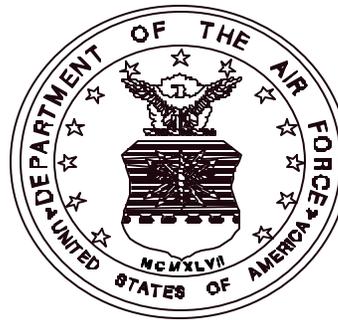


**UNCLASSIFIED**

**DEPARTMENT OF THE AIR FORCE**  
**RDT&E DESCRIPTIVE SUMMARIES FOR**  
**FISCAL YEAR 2002 AMENDED BUDGET SUBMISSION**  
**VOLUME III**



**JUNE 2001**

**UNCLASSIFIED**

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**Fiscal Year 2002 Amended Budget Submission  
RDT&E Descriptive Summaries, Volume III  
June 2001**

**INTRODUCTION AND EXPLANATION OF CONTENTS**

(U) **DISCLAIMER:** This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

1. (U) **GENERAL.** This document has been prepared to provide information on the United States Air Force (USAF) Research, Development, Test and Evaluation (RDT&E) program elements and projects in the FY2002 President's Budget Submission (PB). All formats in this document are in accordance with the guidelines of the DoD Financial Management Regulation, Volume 2B, Chapter 5, with the exception of the R-3 exhibit. The Air Force could not support the format matrix because our programs do not track their programs in the manner required to complete the exhibit.

- g. Contents: Exhibits R-2, R-2a and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY 2002 RDT&E program except the classified program elements. The formats and contents of this document are in accordance with the guidelines and requirement of the Congressional committees insofar as possible. The F-22 "P-5" budget exhibit directed by the Authorization Conference Report number 106-371 has been inserted behind the R-3 exhibit for program element 0604239F.
- h. The "Other Program Funding Summary" portion of the R-2 includes, in addition to RDT&E funds, Procurement funds and quantities, Military Construction appropriation funds on specific development programs, Operations and Maintenance appropriation funds where they are essential to the development effort described, and where appropriate, Department of Energy (DOE) costs.
- i. The Justification book has been assembled in accordance with DoD Financial Management Regulation 7000.14, Vol 2B Cpt 5, Sec 050402 with the exception of the R-1, Project Funding Listing which was distributed under a separate cover due to classification .

2. (U) **CLASSIFICATION.**

a. All exhibits contained in Volumes I, II and III are UNCLASSIFIED. Classified exhibits are not included in the submission due to the level of security classification and necessity of special security clearances.

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## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

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BUDGET ACTIVITY 2: APPLIED RESEARCH	
0602102F Materials	In FY 2002, Project 4915, Deployed Air Base Technology, efforts were transferred from PE 0602201F, Aerospace Vehicle Technologies, Project 4397, Air Base Technology, to align resources with the Air Force Research Laboratory organization.
0602201F Aerospace Vehicle Technologies	<p>In FY 2002, this PE was renamed Aerospace Vehicle Technologies (formerly Aerospace Flight Dynamics). Not reflected in current documentation submission.</p> <p>In FY 2002, selected efforts from Project 2401, Structures, transferred to Project 2403, Flight Control/Vehicle-Pilot Interface, and Project 2404, Aeromechanics, within the PE.</p> <p>In FY 2002, Project 4397, Air Base Technology, transferred efforts to PE 0602102F, Materials, Project 4915, Deployed Air Base Technology, to align resources with the Air Force Research Laboratory organization.</p>
0602202F Human Effectiveness Applied Research	In FY 2002, Project 1900, Environmental Quality Technology, was terminated.
0602203F Aerospace Propulsion	<p>In FY 2002, Project 3012, Advanced Propulsion Technology, efforts were transferred from PE 0603202F, Human Effectiveness Applied Research, Project 3066, Turbine Engine Technology,</p> <p>and 0603216F Aerospace Prop and Power Technology, Project 668A, Aircraft Propulsion Subsys Int, and Project 681B, Advanced Turbine Engine Gas Generator, to align resources with the Air Force Research Laboratory organization.</p>
0602204F Aerospace Sensors	In FY 2002, Project 4916, Electromagnetic Tech, efforts were transferred from PE 0602702F, Command, Control and Communications, Project 4600, Electromagnetic Tech, to align resources with the Air Force Research Laboratory organization.
0602602F Conventional Munitions	In FY 2002, Project 2068, Advanced Guidance Technology, was separated from Project 2502, Ordnance Technology for clarity of describing the different technologies.

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
0602702F Command, Control and Communications	<p>In FY 2002, Project 4600, Electromagnetic Tech, transferred efforts to PE 0602204F, Aerospace Sensors, Project 4916, Electromagnetic Tech.</p> <p>In FY 2002, selected efforts in Project 5581, Command and Control (C2) Technology, Project 4519, Communications Technology, and Project 4594, Information Technology, transferred to Project 4917, Collaborative Technology, within this PE to align resources with the Air Force Research Laboratory organization.</p>
<b>BUDGET ACTIVITY 3: ADVANCED TECHNOLOGY DEVELOPMENT</b>	
0603106F Logistics Systems Technology	<p>In FY 2002, Project 2745 Logistics Performance and Support Technology (S&amp;T), transferred efforts to PE 0603231F, Crew Systems and Personnel Protection Technology, Project 4923, Logistics Readiness and Sustainment, to align resources with the Air Force Research Laboratory organization.</p>
0603112F Advanced Materials for Weapon Systems	<p>In FY 2002, Project 4918, Deployed Air Base Demonstrations, efforts were transferred from PE 0603205F, Flight Vehicle Technology, Project 4398, Air Base Technology.</p>
0603202F Aerospace Prop Subsystems Integration	<p>In FY 2002, Project 668A, Aircraft Propulsion Subsystem Integration, transferred efforts to PE 0603216F, Aerospace Propulsion and Power Technology, Project 4921, Aircraft Propulsion Subsystem Integration, to align resources with the Air Force Research Laboratory organization.</p>
0603203F Advanced Aerospace Sensors	<p>In FY 2002, Project 665A, Advanced Aerospace Sensors Technology efforts were transferred from PE 0603253F, Advanced Sensor Integration, Projects 2735, Avionics Integration Technology, and 666A, Sensor Fusion &amp; Integration Tech.</p>
0603205F Flight Vehicle Technology	<p>In FY 2002, Project 2978, Flight Vehicle Technologies, transferred efforts to PE 0603211F, Aerospace Technology Development/Demo, Project 4920, Flight Vehicle Technology Integration.</p> <p>In FY 2002, Project 4398, Air Base Technology, transferred efforts to PE 0603112F, Advanced Materials for Weapon Systems, Project 4918, Deployed Air Base</p>

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
0603211F Aerospace Technology Development/Demo	<p>In FY 2002, this PE was renamed Aerospace Technology Development/Demo (formerly Aerospace Structures). Not reflected in current documentation submission.</p> <p>In FY 2002, Project 4920, Flight Vehicle Technology Integration efforts were transferred from PE 0603205F, Flight Vehicle Technology, Project 2978, Flight Vehicle Technologies, and PE 0603245F, Flight Vehicle Technology Integration, Project 2568, Flight Vehicle Technology Integration. to align resources with the Air Force Research Laboratory</p>
0603216F Aerospace Prop and Power Technology	<p>In FY 2002, Project 4921, Aircraft Propulsion Subsystems Integration, efforts were transferred from PE 0603202F, Aircraft Propulsion Subsystem Integration, Project 668A, Aircraft Propulsion Subsystem Integration, to align projects with the Air Force Research Laboratory organization.</p> <p>In FY 2002, Project 4922, Space &amp; Missile Rocket Propulsion, efforts were transferred from PE 0603302F, Space &amp; Missile Rocket Propulsion, Project 6340, Satellite Control and Maneuvering Propulsion Technology, to align resources with the Air Force Research Laboratory organization.</p>
0603227F Personnel, Training and Simulation Technology	<p>In FY 2002, Project 2743, Advanced Training/Force Management, transferred efforts to PE 0603231F, Crew Systems and Personnel Protection Technology, Project 4924, Distributed Mission Training Technology, to align resources with the Air Force Research Laboratory organization.</p> <p>In FY 2002, Project 4923, Logistics Readiness and Sustainment, efforts were transferred from PE 0603106F, Logistics Systems Technology, Project 2745, Logistics Performance and Support Technology. to align resources with the Air Force Research Laboratory</p>
0603231F Crew Systems and Personnel Protection Technology	<p>In FY 2002, Project 4924, Distributed Mission Training Technology efforts were transferred from 0603227F, Personnel, Training and Simulation Tech, Project 2743, Advanced Training/Force Management, to align resources with the Air Force Research Laboratory organization.</p>
0603245F Flight Vehicle Technology Integration	<p>In FY 2002, Project 2568, Flight Vehicle Technology Integration, transferred efforts to PE 0603211F, Aerospace Technology Development/Demo, Project 4920, Flight Vehicle Tech Integration.</p>

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
0603253F Advanced Sensor Integration	In FY 2002, Projects 2735, Avionics Integration Technology, and 666A, Sensor Fusion & Integration Tech, transferred efforts to PE 0603203F, Advanced Aerospace Sensors, Project 665A, Advanced Aerospace Sensors Technology.
0603302F Space & Missile Rocket Propulsion	<p>In FY 2002, all rocket propulsion technology efforts performed in Project 6340, Satellite Control and Maneuvering Propulsion Technology, transferred to PE 0603216F Aerospace Prop and Power Technology, Project 4922, Space &amp; Missile Rocket Propulsion, to align resources with the Air Force Research Laboratory organization.</p> <p>In FY 2002, Project 6339, Tactical Propulsion Technology, was terminated.</p>
0603401F Advanced Spacecraft Technology	<p>In FY 2002, Project 4400, Space Systems Protection, efforts were transferred from PE 0603410F, Space Systems Environmental Interactions Technology, Project 2822, Space Environmental Impact Tests, to align resources with the Air Force Research Laboratory organization.</p> <p>In FY 2002, Project 4938, Space Developmental Planning, includes new start efforts.</p>
0603410F Space Systems Environmental Interactions Technology	In FY 2002, Project 2822, Space Environmental Impact Tests, transferred efforts to PE 0603401F, Advanced Spacecraft Technology, Project 4400, Space Systems Protection, to align resources with the Air Force Research Laboratory organization.
0603601F Conventional Weapons	In FY 2002, Project 63670B was separated from Project 670A for clarity in describing the different technology development and demonstration programs.
0603726F Aerospace Info Tech Sys Integration	<p>In FY 2002, Project 2810, Advanced Image/Information/Optical Memory Technology Applications, transferred efforts to Project 4072, Dominant Battlespace Awareness, PE 0603789F, C3I Advanced Development, to align resources with the Air Force Research Laboratory organization.</p> <p>In FY 2002, Project 4850, Collaborative C2, transferred efforts to Project 4925, Collaborative C2, PE 0603789F, C3I Advanced Development, to align resources with the Air Force Research Laboratory organization.</p>

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
0603789F C3I Advanced Development	<p>In FY 2002, Project 4072, Dominant Battlespace Awareness, efforts were transferred from PE 0603726F, Aerospace Info Tech Sys Integration, Project 2810, Advanced Image/Information/Optical Memory Technology Applications, to align resources with the Air Force Research Laboratory organization.</p> <p>In FY 2002, Project 4925, Collaborative C2, efforts were transferred from PE 0603726F, Aerospace Info Tech Sys Integration, Project 4850, Collaborative C2, to align resources with the Air Force Research Laboratory organization.</p>
0603876F Space Based Laser	<p>In FY 2002, all funding was transferred to the Ballistic Missile Defense Organization (BMDO) program.</p>
<b>BUDGET ACTIVITY 4: DEMONSTRATION AND VALIDATION</b>	
0603319F Airborne Laser Program	<p>In FY 2002, all funding was transferred to the Ballistic Missile Defense Organization (BMDO) program.</p>
0603421F Global Positioning System	<p>In FY 2002, this is a new PE. In FY 2002, Project 4993, GPS Block III efforts transferred from PE 0603421F, NAVSTAR Global Positioning System, Project 3030, Navstar GPS Space &amp; Control.</p>
0603434F NPOESS (Space)	<p>In FY 2002, Project 4056, NPOESS, includes new start efforts.</p> <p>In FY 2002, Project 4056, NPOESS, several efforts were terminated.</p>
0603438F Space Control Technology	<p>In FY 2002, Project 2611, Technology Insertion Plan &amp; Analysis, includes new start</p> <p>In FY 2002, Project 2611, Technology Insertion Plan, transferred efforts to PE 0305935F, Space Control, Project 4929, Space Control Technology.</p>
0603617F Command, Control and Communication	<p>In FY 2002, this Program has been terminated.</p>
0603851F ICBM - DEM/VAL	<p>In FY 2002, Project 1021, ICBM Propulsion Applications, and Project 1024, ICBM Command &amp; Control (C2) Applications, include new efforts.</p>
0603854F Wideband Gapfiller System (RDT&E) Space	<p>In FY 2002, Project 2679, Global Broadcast Service (GBS), efforts were transferred to PE 0603840F, Global Broadcast Service (GBS), Project 4887, Global Broadcast Service.</p>

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
BUDGET ACTIVITY 5: ENGINEERING AND MANUFACTURING DEVELOPMENT	
0207701F Full Combat Mission Training	<p>In FY 2002, this is a new PE. In FY 2002, Project 5012, Distributed Mission Training, efforts transferred from PE 0604227F, Distributed Mission Training (DMT), Project 4673, Distributed Mission Training, to provide more effective program management and</p> <p>In FY 2002, Project 5012, Distributed Mission Training efforts were transferred from PE 0604227, Distributed Mission Training (DMT), Project 4673, Distributed Mission Training, to provide more effective program management and oversight.</p>
0401318F CV-22	In FY 2002, this is a new PE. In FY 2002, Project 4103, CV-22, includes new start efforts.
0603840F Global Broadcast Service (GBS)	This is a new PE in FY 2002. In FY 2002, Project 4887, Global Broadcast Service, efforts transferred from PE 0603854 Wideband Gapfiller System (RDT&E) Space, Project 2679, Global Broadcast Service (GBS).
0604840F EW Development	In FY 2002, Project 2462, Compass Call (CC), transferred efforts to PE 0207253, Compass Call (CC), Project 4804 Compass Call (CC).
0604227F Distributed Mission Training (DMT)	In FY 2002, Project 4673, Distributed Mission Training, transferred efforts to PE 0207701F, Full Combat Mission Training, Project 5012, Distributed Mission Training, to provide more effective program management and oversight.
0604240F B2 Advanced Technology Bomber	In FY 2002, Project 3843, B-2 (ATB), includes new start efforts.
0604251F Space Based Radar EMD	In FY 2002, Project 5009, SBR Concept and Tech Development, includes new start efforts.
0604328F Extended Range Cruise Missile (ERCM)	In FY 2002, this is a new PE. In FY 2002, Project 4978, ERCM, includes new start efforts.
0604329F Small Diameter Bomb (SBD)	In FY 2002, this is a new PE. In FY 2002, Project 5006, Small Diameter Bombs (SBD), includes new start efforts.
0604602F Armament/Ordnance Development	In FY 2002, Project 3133, Bombs and Fuzes, includes new start efforts.

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
0604617F Agile Combat Support	<p>In FY 2002, Project 2895, Civil Engineering Readiness, efforts were transferred from PE 0208031F, War Reserve Material - Equipment/Secondary Items, Project 4668, Shelter Development, to provide a more manageable CE Readiness effort.</p> <p>In FY 2002, Project 4910, Aeromedical Readiness, efforts were transferred from PE 0604703F, Aeromedical Systems Development, Project 2866, Aeromedical/Casualty Care Sys Development, to provide a more manageable CE Readiness effort.</p>
0604703F Aeromedical Systems Development	<p>In FY 2002, Project 2866, Aeromedical/Casualty Care Sys Development transferred efforts to PE 0604617F Agile Combat Support, Project 4910, Aeromedical Readiness, to provide a more manageable CE Readiness effort.</p>
0604735F Combat Training Ranges	<p>In FY 2002, Project 2286, Combat Training Ranges Equipment, includes new start efforts.</p>
0604800F Joint Strike Fighter EMD	<p>In FY 2002, Project 3831, Joint Strike Fighter, efforts were transferred from PE 0603800F, Joint Strike Fighter, Project 2025, Joint Strike Fighter.</p>
0604805F DUAP Commercial Operations & Support Savings Initiative	<p>In FY 2002, this Program has been terminated.</p>
0604851F ICBM - EMD	<p>In FY 2002, Project 4371, Safety Enhanced Reentry Vehicle (SERV), Project 5007, Global Positioning System (GPS) Metric Tracking Program, and Project 133B, Rapid Execution and Combat Targeting (REACT) Replacement, include new start efforts.</p>
<b>BUDGET ACTIVITY 6: MANAGEMENT AND SUPPORT</b>	
0604256F Threat Simulator Development	<p>In FY 2002, Project 3321, EW Ground Test Resources, includes new start efforts.</p>
0604759F Major Test and Evaluation Investment	<p>In FY 2002, Project 4597, AF Test Investments, includes new start efforts.</p>
0605807F Test & Evaluation Support	<p>In FY 2002, Project 06TS, Test &amp; Evaluation Support, includes new start efforts.</p>
0605860F RSLP (Space)	<p>In FY 2002, Project 1023, Rocket System Launch Program (RSLP), includes new start efforts.</p>
0804731F General Skill Training	<p>In FY 2002, this is a new PE. In FY 2002, Project 4980, R&amp;D Computer Forensic Analyst Tools, includes new start efforts.</p>

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
BUDGET ACTIVITY 7: OPERATIONAL SYSTEM DEVELOPMENT	
0203761F Warfighter Rapid Acquisition Process	<p>In FY 2002, this is a new PE. In FY 2002, Project 4936, Warfighter Rapid Acquisition Process, efforts were transferred from PE 0207027F, AC2ISR, Project 4814, Expeditionary Force Experiment (EFX).</p> <p>In FY 2002, Project 4936, Warfighter Rapid Acquisition Process, includes new start efforts.</p>
0207027F AC2ISR	<p>In FY 2002, Project 4814, Expeditionary Force Experiment (EFX), transferred efforts to 0203761F, Warfighter Rapid Acquisition Process, Project 4936, Warfighter Rapid Acquisition Process.</p> <p>In FY 2002, Project 4814, Expeditionary Force Experiment (EFX), transferred efforts to 0207028F, Joint Expeditionary Force Experiment, Project 4373, Joint Expeditionary Force Experiment, and Project 4991, Joint Distributed Engineering Plant (JDEP).</p> <p>In FY 2002, Project 4478, Command, Control, Computer &amp; Intelligence Enhancement efforts transferred to PE 0208060F Theatre Missile Defense, Project 4372, Time Critical</p>
0207028F Joint Expeditionary Force Experiment	<p>In FY 2002, this is a new PE. In FY 2002, Project 4373, Joint Expeditionary Force Experiment, and Project 4991, Joint Distributed Engineering Plant (JDEP) include efforts transferred from PE 0207027F, AC2ISR., Project 4814, Expeditionary Force Experiment (EFX).</p>
0207138F F-22 Squadrons	<p>In FY 2002, this is a new PE. In FY 2002, Project 4785, F-22, includes new start efforts.</p>
0207253F Compass Call	<p>In FY 2002, Project 4804, Compass Call (CC), efforts were transferred from PE 064805F, EW Development, Project 2462, Compass Call (CC).</p>
0207277F CSAF Innovation Program	<p>In FY 2002, this is a new PE. In FY 2002, Project 4931, Eagle Vision, efforts were transferred from PE 0305208F, Project 4826, Common Imagery Ground/Surface Systems.</p>

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
0207410F Aerospace Operations Center (AOC)	In FY 2002, this is a new PE. In FY 2002, Project 4372, Time Critical Targeting, efforts were transferred from PE 0208060, Theatre Missile Defense, Project 4478, Command, Control, Communication, Computer and Intelligence Enhancement.
0207417F Airborne Warning & Control System	In FY 2002, Project 411L, Airborne Warning & Control System, includes new start efforts.
0207423F Advanced Communications System	In FY 2002, Project 4934, Tactical Air Control Party (TACP), includes new start efforts.  In FY 2002, Project 1013, Theater Deployable Communications, was terminated.  In FY 2002, Project 2982, Anti-Jam Radio Communications, was terminated.
0207438F Theater Battle Management (TMD) C4I	In FY 2002, Project 4821, Distributed Common Ground System Interoperability, efforts were transferred to Project 4826, Common Imagery Ground/Surface Systems.
0207581F Joint Stars	In FY 2002, Project 0003, JSTARS, includes new start efforts.
0207601F USAF Modeling and Simulation	In FY 2002, Project 5005, EA for Air/Space Natural Environment (ANSE) efforts were transferred from PE 0308601F, Modeling and Simulation Support, Project 4566, EA for Air/Space Natural Environment (ANSE), to provide a more manageable Modeling, Simulation, and Analysis effort.  In FY 2002, Project 5004, Joint Model Transition (JMT) efforts were transferred from PE 0308601F, Modeling and Simulation Support, Project 1011, Legacy Model Transition (LMT), to provide a more manageable Modeling, Simulation, and Analysis effort.
0208031F War Reserve Materials - Equipment/Secondary Items	In FY 2002, Project 4468, Shelter Development, efforts were transferred to PE 0604617F, Agile Combat Support, Project 2895, Civil Engineering Readiness.
0208060F Theater Missile Defense	In FY 2002, Project 4478, Command, Control, Computers & Intelligence Enhancement, transferred efforts to PE 0207410F, Aerospace Operation Center (AOC), Project 4372, Time Critical Targeting.
032015F E-4B National Airborne Operations Center	In FY 2002, Project 4777, E-4B Aircraft Modernization, includes new start efforts.

## PROGRAM ELEMENT COMPARISON SUMMARY

### INTRODUCTION AND EXPLANATION OF CONTENTS

<b>Program Element</b>	<b>Remarks</b>
0303131F Minimum Emergency Communications Network (MEECN)	In FY 2002, Project 4521, DIRECT, includes new start efforts.
0303141F Global Combat Support System	<p>In FY 2002, Project 4655, Integrated Log Sys-Supply (ILS-S) efforts were separated into six projects within the same PE to provide a more efficient and manageable program.</p> <p>In FY 2002, Project 4928, Electronic Business/Electronic Commerce, includes new start efforts.</p>
0303601F MILSATCOM Terminals	In FY 2002, Project 2487, MILSATCOM Terminals, includes new start efforts.
0305165F NAVSTAR GPS	In FY 2002, Project 3030, Navstar GPS Space & Control, transferred efforts to PE 0603421F, NAVSTAR Global Positioning System, Project 4993, GPS Block III.
0305202F Dragon U-2 (JMIP)	In FY 2002, efforts in Project 4818, Imaging and Targeting System transferred to Project 4945, High Altitude Systems, within the same PE.
0305205F Endurance Unmanned Aerial Vehicle	In FY 2002, Project 4755, Predator, includes new start efforts.
0305206F Airborne Reconnaissance Systems	In FY 2002, Project 4817, Joint Sigint Avionics Family (JSAF), efforts were terminated.
0305906F NCMC - TW/AA Systems	In FY 2002, Project 3881, Integrated TW/AA, transferred efforts to Project 4806, N/UWSS NORAD/USSPACECOM Warfight Sys, within the same PE.
0305910F SPACETRACK (Space)	In FY 2002, Project 4930, Space Based Space Surveillance, and Project 5010, Space Situational Awareness Initiatives, include new start efforts.
0305935F Space Control	In FY 2002, Project 4929, Space Control Technology, transferred efforts to PE 0603438F, Space Control Technology, Project 2611, Technology Insertion Plan & Analysis.

## **PROGRAM ELEMENT COMPARISON SUMMARY**

### **INTRODUCTION AND EXPLANATION OF CONTENTS**

<b>Program Element</b>	<b>Remarks</b>
0308601F Modeling and Simulation Support	<p>In FY 2002, Project 4566, EA for Air/Space Natural Environment (ANSE), transferred efforts to PE 0207601F, USAF Modeling and Simulation, Project 5005, EA for Air/Space Natural Environment (ANSE), to provide a more manageable Modeling, Simulation, and Analysis effort.</p> <p>In FY 2002, Project 1011, Legacy Model Transition (LMT), transferred efforts to PE 0207601F, USAF Modeling and Simulation, Project 5004, Joint Model Transition (JMT), to provide a more manageable Modeling, Simulation, and Analysis effort.</p>
0401130F C-17 Aircraft	<p>In FY 2002, Project 4886, LAIRCM, transferred efforts to PE 0401134F, Large Aircraft IR Countermeasures, Project 4885, LAIRCM.</p> <p>In FY 2002, Project 2569, C-17, includes new start efforts.</p>
0401134F Large Aircraft IR Countermeasures	<p>In FY 2002, this is a new PE. In FY 2002, Project 4885, LAIRCM, efforts transferred from PE 0401130F, C-17 Aircraft, Project 4886, LAIRCM.</p>
0401218F KC-135S	<p>In FY 2002, Project 4494, KC-135 Aging Aircraft Program, includes new start efforts.</p>

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**June 2001**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0101113F B-52 SQUADRONS**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	38,440	50,321	66,874	41,820	4,712	15,975	40,390	0	0	229,167
4401 Air Force Mission Support System (AFMSS)	2,658	0	0	0	0	0	0	0	0	9,393
4810 Avionics Midlife Improvement (AMI)	27,858	38,515	37,987	19,168	0	0	0	0	0	14,400
4875 Situational Awareness Defensive Improvement	7,924	11,806	28,887	22,652	0	0	0	0	0	134,400
4876 B-52 Global Air Traffic Management (GATM)	0	0	0	0	4,712	15,975	40,390	0	0	70,974
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) FY03-07 budget numbers do not reflect the DoD strategic review results.

(U) Note: RDT&E articles are not separately priced.

**(U) A. Mission Description**

The B-52 is the primary nuclear roled bomber in the USAF inventory. It provides the only Air Launch Cruise Missile carriage in the USAF. The B-52 also provides theater CINCs with a long range strike capability. The current service life of the aircraft extends to 2040. The Advanced Weapons Integration (AWI) program supports the conventional enhancement of the B-52 through the addition of the Wind Corrected Munitions Dispenser (WCMD), Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW), and the Joint Air-to-Surface Stand-off Missile (JASSM). The Air Force Mission Support System (AFMSS) supports the Air Force movement of all mission planning to a common system. The B-52's Avionics Midlife Improvement (AMI) program replaces insupportable mission critical parts of the Offensive Avionics System that control navigation and weapons delivery on the B-52. Situational Awareness Defensive Improvement (SADI) program improves supportability, increases memory, allows reprogrammability, and adds a new display for improved situational awareness and system control. Global Air Traffic Management (GATM) avionics upgrades reduce airspace congestion, increase safety, and cost savings through more efficient flight routes and altitudes. The B-52 program management is provided by Air Force Material Command's Oklahoma Air Logistics Center. The prime contractor for these projects is Boeing, McDonnell Defense in Wichita Kansas.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE		
BUDGET ACTIVITY			June 2001		
07 - Operational System Development			0101113F B-52 SQUADRONS		
(U) <b>B. Budget Activity Justification</b>					
This program is in budget activity 7 - Operational System Development, because it supports a currently operational system.					
(U) <b>C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	39,658	50,787	48,776	TBD
(U)	Appropriated Value	39,658	50,787		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-356		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions	-157	-110		
(U)	Adjustments to Budget Years Since FY 2001 PBR	-1,061		18,098	
(U)	Current Budget Submit/FY 2002 PBR	38,440	50,321	66,874	TBD
(U) <b>Significant Program Changes:</b>					
(U) FY01 number includes approximately \$12.0M for the Situational Awareness Defensive Improvement (SADI) program. The EMD schedule will lengthen by at least three months.					
(U) FY02 was increased to perform ground and flight testing for Avionics Midlife Improvement (AMI) and Situational Awareness Defensive Improvement (SADI)					

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>					PROJECT <b>4401</b>
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4401    Air Force Mission Support System (AFMSS)	2,658	0	0	0	0	0	0	0	0	14,400
<p>(U) <b><u>A. Mission Description</u></b>            B-52 Air Force Mission Support System (AFMSS) was previously funded out of the AFMSS program element prior to FY98. The project develops aircraft/weapons/electronic (A/W/E) countermeasures modules to be used in conjunction with the core software modules to provide a Mission Planning Environment for planning B-52 missions. AFMSS is the replacement system for the current Mission Data Preparation System (MDPS), the legacy system used for B-52 SIOP capability. Block 1 provided the capability to plan conventional gravity missions at the unit level. Block 2 is Y2K compliant and provides the capability to plan JDAM and WCMD missions. It also adds interface unit/Tacan replacement system (IU/TRS) capability. Block 3 adds planning capability for AGM-84 and AGM-86C. Block 4 provides Triad Computer System (TRICOMS) mission data import capability and allows the retirement of MDPS. Plus, it includes capability to plan the AGM-142, JSOW and JASSM. Block 5 will enable migration of the mission planning capability to the Joint Mission Planning System (JMPS).</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$569                    Initiate Block 5 operational requirements for migration to JMPS            (U) \$789                    Complete Block 3 operational software test and installation            (U) \$1,300                 Complete Block 4 operational software test and installation            (U) \$2,658                 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0                        No Activity            (U) \$0                        Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0                        No Activity            (U) \$0                        Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>            N/A</p>										
Project 4401			Page 3 of 14 Pages				Exhibit R-2A (PE 0101113F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>					PROJECT <b>4401</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
<b>(U) D. Acquisition Strategy</b>													
The AFMSS program is organically conducted at OC-ALC/LAS. Previously funded by the AFMSS program element.													
<b>(U) E. Schedule Profile</b>													
		<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>							
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete Block 2 development													
(U) Software development Block 3													
(U) Contract award Block 4													
(U) Software development Block 4						*							
(U) Contract award Block 5				*									
(U) Software development Block 5				*									
(U) Operational requirements for migration to JMPS				*	*	*	*	*	*	*	X	X	X
The B-52 peculiar mission planning software development is accomplished and delivered incrementally. Each work package within a block build is treated as a mini-development with its own analysis, design, and test. The work package are integrated with one another and with the AFMSS core. Continuing efforts in FY01 and FY02 for migration to JMPS requirements.													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE  
June 2001

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0101113F B-52 SQUADRONS**

PROJECT  
**4401**

(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) Software development	2,584	0	0
(U) System Program Office support	74	0	0
(U) Total	2,658	0	0

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Oklahoma ALC/LAS	Project Order	Nov 99	2,299	N/A	5,616	2,299			2,733	10,648
<u>Support and Management Organizations</u>										
OC-ALC/LH	PMA	Nov 99	51	N/A	245	51				296
OC-ALC/LAP/050 a/c	Project Order	Jun 97	3,053	N/A	3,053				0	3,053
<u>Test and Evaluation Organizations</u>										
419th/Edwards	Project Order	Mar 00	100	0	95	100			0	195
46 OG/Eglin	Project Order	Mar 00	208			208				208

(U) **Government Furnished Property:**

<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>		PROJECT <b>4401</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	5,616	2,299			2,733	10,648
Subtotal Support and Management	3,298	51			0	3,349
Subtotal Test and Evaluation	95	308			0	403
Total Project	9,009	2,658			2,733	14,400

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>					PROJECT <b>4810</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4810 Avionics Midlife Improvement (AMI)	27,858	38,515	37,987	19,168	0	0	0	0	Continuing	TBD	
<p>(U) FY03 - FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The current B-52H Offensive Avionics System (OAS) contains several subsystems which must be replaced. The Inertial Navigation System (INS) includes a spinning mass gyro based on 1960's technology which will soon be unsupportable. The Avionics Control Unit (ACU) is an aging computer system with limited processing capability and memory. The Data Transfer Unit Cartridges (DTUCs) are bulky, unreliable and also based on old technology. The AMI program will use existing technology to replace these systems and the associated software to significantly increase OAS reliability, maintainability, and supportability while increasing capability and reducing operating costs.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$12,042 Design and development of Group A Hardware                      (U) \$15,816 Design and development of replacement software                      (U) \$27,858 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$36,812 Design and development of replacement software                      (U) \$1,703 Ground and flight test                      (U) \$38,515 Total</p> <p>The following net transactions are not reflected in the FY01 program total: BTR=-625K, and SIBR=-1766K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$35,587 Design, development of replacement software                      (U) \$2,400 Ground and Flight Test                      (U) \$37,987 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>                      The EMD contract was awarded on 23 December 1999</p>											
Project 4810			Page 7 of 14 Pages				Exhibit R-2A (PE 0101113F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101113F B-52 SQUADRONS					PROJECT 4810			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
(U) Aircraft Procurement (BP1100)			0	0	17,902	18,450	4,600		62,328	103,280			
Additional funding is being sought in the FY03 APOM.													
<b>(U) D. Acquisition Strategy</b>													
The AMI program will contract with Boeing Wichita for aircraft hardware integration and software development of the Flight Management System and the Stores Management Overlays. Specific vendors will be selected to provide hardware for use during EMD. The Government will contract with these vendors for production hardware to support the aircraft installations.													
<b>(U) E. Schedule Profile</b>													
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Award		*	*	*	*	*	*	X	X	X	X	X	X
(U) Interface Development		*	*	*	*								
(U) Software Development		*	*	*	*								
(U) Test Planning		*	*	*	*	*	X						
(U) Group A Design		*	*	*	*								
(U) Group A Fabrication					*	*	*	X	X	X	X	X	
(U) Trial Install											X	X	X
(U) Flight Test												X	X
(U) Program Office Support		*	*	*	*	*	*	X	X	X	X	X	X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS			PROJECT 4810				
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Prototype Hardware					93		3,659		2,602	
(U)	Non-recurring Engineering					26,313		29,600		30,000	
(U)	Ground/Flight Test					30		1,703		2,400	
(U)	System Program Office Support					1,000		3,100		2,600	
(U)	Miscellaneous					422		453		385	
(U)	Total					27,858		38,515		37,987	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Boeing, Wichita	CONTRACT	FY00	109,100	109,100		26,670	31,812	30,952	Continuing	TBD
<u>Support and Management Organizations</u>											
	OC-ALC/LH	PMA	FY00	180	180		538	3,100	2,600	Continuing	TBD
	OC-ALC/LAS	206	FY00	400	400		400	1,600	1,735	Continuing	TBD
	OO-ALC/LIR	616	Feb 00	100	100		100	200	200	Continuing	TBD
	SER/CASU	MIPR	Feb 00	100	100		100	100	100	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	419 FLTS	Project Order	Mar 00	30	30		50	1,703	2,400	Continuing	TBD
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development						26,670	31,812	30,952	TBD	TBD
	Subtotal Support and Management						1,138	5,000	4,635	TBD	TBD
	Subtotal Test and Evaluation						50	1,703	2,400	TBD	TBD
	Total Project						27,858	38,515	37,987	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>					PROJECT <b>4875</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4875      Situational Awareness Defensive Improvement	7,924	11,806	28,887	22,652	0	0	0	0	0	71,269	
FY03 - FY07 budget numbers do not reflect the DoD strategic review results											
<p>(U) <b><u>A. Mission Description</u></b>                      The existing ALR-20A system provides the Electronic Warfare Officer (EWO) with the capability of simultaneously surveying, detecting, and displaying all radio frequency (RF) transmissions within its frequency range of coverage. It displays the detected signals in a spectrum analyzer like presentation (i.e., in an amplitude versus frequency format) to the EWO on a multi-trace cathode ray tube (CRT). The ALR-20A provides the EWO with two (2) capabilities. First, it is the main receiver used for providing early warning and situational awareness. Second, the analog signals displayed by the ALR-20A are required for the successful employment (i.e., jamming) of the following electronic countermeasures (ECM) systems: ALQ-122/ALQ-16A, ALT-32s, and all ALQ-155(V) systems. The present ALR-20A system was designed in the 1960's and is becoming increasingly unsupportable due to vanishing vendors and obsolete technology. SADI removes and replaces the ALR-20A Panoramic receiver system. Includes Group B System and Group A Integrator Kit.</p>											
(U) <b><u>FY 2000 (\$ in Thousands)</u></b>											
(U) \$6,153	Group A (antennas) NRE, Group B (LRUs) NRE										
(U) \$1,000	Software										
(U) \$771	Program Management										
(U) \$7,924	Total										
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>											
(U) \$3,080	Group A kit and NRE										
(U) \$3,820	Group B kit and NRE										
(U) \$3,820	Software										
(U) \$1,086	Program Management										
(U) \$11,806	Total										
The following net transactions are not reflected in the FY01 program total: BTR=-730K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.											

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>			PROJECT <b>4875</b>		
<b>(U) A. Mission Description Continued</b>										
<b>(U) FY 2002 (\$ in Thousands)</b>										
(U)	\$3,790	Group A kit and NRE								
(U)	\$2,879	Group B kit and NRE								
(U)	\$10,738	Ground/Flight Test								
(U)	\$540	Install								
(U)	\$1,620	Program Management								
(U)	\$1,080	Trainers								
(U)	\$4,550	Support Equipment/NRE								
(U)	\$3,690	Software								
(U)	\$28,887	Total								
<b>(U) B. Project Change Summary</b>										
None.										
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN				31,300	42,800	21,600	27,200	35,800	158,700
<b>(U) D. Acquisition Strategy</b>										
The present ALR-20A system was designed in the 1960's and is unsupportable due to vanishing vendors and obsolete technology. The SADI program will remove and replace the ALR-20A and ALR-46 RWR. The SADI program will contract with Boeing Wichita for aircraft hardware integration. Lockheed-Martin has been selected to provide hardware for use during EMD. The Government will contract with these vendors for production hardware to support the aircraft installations.										
<b>(U) E. Schedule Profile</b>										
				<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE		
										June 2001		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development					010113F B-52 SQUADRONS					4875		
(U) <u>E. Schedule Profile Continued</u>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Award			*	*	*	*	X	X	X	X	X	X
(U) Interface Development				*	*	*	X	X	X	X	X	X
(U) Test Planning				*	*	*	X	X	X	X	X	X
(U) Group A Design				*	*	*	X	X	X	X	X	X
(U) Group A Fabrication							X	X	X	X	X	X
(U) Group B Design				*	*	*	X	X	X	X	X	X
(U) Group B Fabrication							X	X	X	X	X	X
(U) DT ( 2 Qtr FY 02)										X	X	X
(U) OT (2 Qtr FY03)												
(U) Program Office Support			*	*	*	*	X	X	X	X	X	X
* = Complete												
X = On going												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101113F B-52 SQUADRONS			PROJECT 4875		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Hardware/NRE					6,153		6,900		6,669
(U)	Software					1,000		3,820		3,690
(U)	Program management					771		1,086		1,620
(U)	Trainers									1,080
(U)	Support Equipment/NRE									4,550
(U)	Ground/Flight Test									10,738
(U)	Install									540
(U)	Data									
(U)	Total					7,924		11,806		28,887
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Boeing Military Programs,	CPAF	Aug 00	2,793			6,863	10,732	22,255	15,832	55,682
Wichita Division										
<u>Support and Management Organizations</u>										
OC-ALC/LH	PMA	Jun 00	225	N/A		813	694	900	900	3,307
WR/ALC	616	Aug 00	98	N/A		98	120	120	120	458
OO-ALC/YWT			N/A	N/A		110	130	1,080	1,080	2,400
HQ ACC/XRA52	MORD	Jun 00	10	N/A		10	10	10	10	40
<u>Test and Evaluation Organizations</u>										
36 EWS//EWF	616	Jun 00	10	N/A		10	20	110	110	250
419 FLTS	616	Jun 00	10	N/A		10	50	2,110	2,200	4,370
2LG & 49 TES	616	Jun 00	10	N/A		10	50	2,302	2,400	4,762
Project 4875					Page 13 of 14 Pages	Exhibit R-3 (PE 0101113F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS				PROJECT 4875	
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					6,863	10,732	22,255	15,832	55,682
Subtotal Support and Management					1,031	954	2,110	2,110	6,205
Subtotal Test and Evaluation					30	120	4,522	4,710	9,382
Total Project					7,924	11,806	28,887	22,652	71,269

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101120F Advanced Cruise Missile					PROJECT 4798	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4798	Life Extension Study	0	4,144	2,487	2,795	3,042	3,106	3,172	3,242	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>FY03-FY07: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Advanced Cruise Missile (ACM) is a low-observable air-launched, strategic missile with significant improvements over the Air Launched Cruise Missile B version (ALCM-B) in range, accuracy, and survivability. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike heavily defended, hardened targets at any location within any enemy's territory. An ACM Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ACM service life to FY30. The ACM is designed for B-52H external carriage. Missile procurement is complete. The ACM fleet design service life expires between the years 2003 and 2008. The results of Service Life Extension Program (SLEP) studies should identify those components that cannot be sustained beyond the normal service life.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$562 Accomplish design definition, develop prime item specification and begin Preliminary Design Review (PDR) for development of the Joint Test Instrumentation Kit (JTIK) doors.                      (U) \$903 JTIK component qualification                      (U) \$2,679 Build 2 each prototype JTIK doors                      (U) \$4,144 Total</p>											
Project 4798			Page 1 of 6 Pages				Exhibit R-2 (PE 0101120F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																															
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0101120F Advanced Cruise Missile</b>	PROJECT <b>4798</b>																																																															
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Project 4798	Page 2 of 6 Pages	Exhibit R-2 (PE 0101120F)																																																															

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0101120F Advanced Cruise Missile</b>	<b>PROJECT</b> <b>4798</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

(U) **Significant Program Changes Continued:**  
funding increase of \$2,487 in FY02 is for development and qualification of the newly designed JTIK doors. The final results of the SLEP study are required to determine other actions on critical components.

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Missile Procurement, AF										
(U) Aeronautical Vehicle (BA2, PE 11120F, P-1#2)	0	1,988	0	0	0	0	0	0	0	1,988
(U) Missile Modifications (BA3, PE 11120F, P-1#9)	0	0	784	2,073	2,006	2,040	2,069	1,343	Continuing	TBD
(U) Replen Spares & Spares (BA4, PE 11120F, P-4#17)	3,058	318	6,773	2,412	2,414	2,557	863	948	Continuing	TBD
(U) Mod Initial Spares (BA4, PE 11120F, P-1#17)	0	1,924	0	381	325	326	326	257	Continuing	Continuing

(U) **E. Acquisition Strategy**

Development will be through the prime contractor, Raytheon. A Cost Plus Fixed Fee (CPFF) CLIN is being added to the Time and Materials contract. Contract number: F34601-96-C-0775.

(U) **F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) JTIK Development												
(U) Contract Award									X			
(U) PDR										X		
(U) CDR											X	
(U) Prototype (2)												X
(U) Integration Testing											X	X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE <b>June 2001</b>																																								
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	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>																																									
	1	2	3	4	1	2	3	4	1	2	3	4																																						
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Project 4798			Page 4 of 6 Pages					Exhibit R-2 (PE 0101120F)																																										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0101120F Advanced Cruise Missile</b>			<b>4798</b>				
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Accomplish design definition, develop prime item specification and begin Preliminary Design Review (PDR) for development of the Joint Test Instrumentation Kit (JTIK) doors.					0		562			
(U)	JTIK component qualification					0		903			
(U)	Build 2ea prototype JTIK doors							2,679			
(U)	JTIK Integration testing, door/vehicle qualification, EMC testing of new JTIK door/vehicle									2,487	
(U)	Total					0		4,144		2,487	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Raytheon	CPFF	Aug 01	6,631	6,631	0	0	4,144	2,487	Continuing	TBD
	<u>Support and Management Organizations</u>										
	N/A										
	<u>Test and Evaluation Organizations</u>										
	N/A										
<b>(U) Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										
	None										
Project 4798						Page 5 of 6 Pages	Exhibit R-3 (PE 0101120F)				

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0101120F Advanced Cruise Missile</b>			<b>4798</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			0	0	4,144	2,487
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						
Total Project			0	0	4,144	2,487
						TBD
						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0101122F Air Launched Cruise Missile</b>					PROJECT <b>4797</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4797	Flight Testing & Navigation Enhancement	5,104	6,398	6,841	13,178	11,720	7,919	0	0	0	50,890
	Quantity of RDT&E Articles	0	0	5	0	0	0	0	0	0	0
<p>This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>            (U) The Air Launched Cruise Missile (ALCM) AGM-86B is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage. Missile procurement is complete. An ALCM Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ALCM Service Life to FY30. Initial SLEP assessment requires acquisition of new Conventional Air Launched Cruise Missile/Air Launched Cruise Missile Test Instrumentation Kit (CATIK) payload doors, replacement of current obsolete navigation system, and replacement of Operational Test &amp; Evaluation (OT&amp;E) hardware and software. This program commenced in FY00 based on the decision to maintain this weapon system beyond its current design life. CATIK flight test payload doors, containing range transponder and battery, are required to be replaced, due to Department of Energy (DOE) range safety requirements and lack of current payload door assets. The current obsolete Inertial Navigation Element (INE) system has parts without spares or suppliers that are now supportable only through use of cannibalized parts from excess INE units. The INE has been identified as the ALCM item with largest number of unscheduled maintenance hours.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$5,104 - CATIK payload door Interface Design/Development, Operational Flight/Flight Termination Software Development, and Automated Test Equipment Development.            (U) \$5,104 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$907 - Continue CATIK Hardware Interface Development, Finalize Hardware Testing/Integration.            (U) \$2,383 - Continue Operational Flight Software Development, Software Testing and Integration.            (U) \$1,605 - Pre EMD Inertial Navigation Element (INE) Hardware Interface Development, Testing/Integration            (U) \$1,503 - Pre EMD INE Software Emulation Development, Testing and Integration            (U) \$6,398 Total</p>											
Project 4797			Page 1 of 7 Pages				Exhibit R-2 (PE 0101122F)				

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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$3,460                    -CATIK payload door Interface Design/Development, Operational Flight/Flight Termination Software Development, Automated Test Equipment Development</p> <p>(U) \$3,381                    Continue INE Hardware Interface Pre-EMD , Testing/Integration</p> <p>(U) \$6,841                    Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>These programs are in budget activity 7, Operational System Development. ALCM has completed procurement, is fielded, and is undergoing modification to extend its Service Life.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">5,344</td> <td style="text-align: center;">6,457</td> <td style="text-align: center;">6,841</td> <td style="text-align: center;">50,890</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">5,344</td> <td style="text-align: center;">6,457</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: center;">-34</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-152</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-54</td> <td style="text-align: center;">-59</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">5,104</td> <td style="text-align: center;">6,398</td> <td style="text-align: center;">6,841</td> <td style="text-align: center;">50,890</td> </tr> <tr> <td>(U) <u>Significant Program Changes:</u></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    N/A</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	5,344	6,457	6,841	50,890	(U) Appropriated Value	5,344	6,457			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-34				b. Small Business Innovative Research	-152				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions	-54	-59			(U) Adjustments to Budget Years Since FY 2001 PBR					(U) Current Budget Submit/FY 2002 PBR	5,104	6,398	6,841	50,890	(U) <u>Significant Program Changes:</u>					N/A				
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<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) Missile Procurement, AF											
(U) Missile Modifications (BA 3, PE 11122F, P-1#14)		4,029	0	15,608	11,913	16,228	17,597	10,042	27,232		102,649
(U) Replenishment + Spares/Spare Parts (BA 4, PE 11122F, P-1#17)	213	252	9,857	264	269	276	292	297	Continuing		TBD
(U) Other Procurement (BP83) Electronics and Telecommunications Equipment (BA 3, PE 11122F, P-1#51) FY02 Replenishment Spares funding reflects PMD 810 for ALCM Pyrotechnical Devices	1,297	1,287	1,331	1,333	1,362	1,389	1,443	1,476	Continuing		TBD
<b>(U) E. Acquisition Strategy</b>											
ALCM is using Boeing for the SLEP MOD development and production. An Engineering Assignment was used for the CATIK portion of the SLEP MOD development with a Cost Plus Award Fee contract. Firm Fixed Price will be used for all SLEP MOD production. CATIK development started in Jul FY00 and the production contract will award in Oct FY03. Parellel efforts for INE replacement Pre-EMD started with TRW contract in Jun FY01: Boeing effort to begin Jul FY01. Production contract award will be Jan FY05.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U) CATIK Milestones											
(U) PDR					*						
(U) CDR									X		
(U) INE Milestones											
(U) PDR											X
(U) CDR (1st Qtr FY03)											
Project 4797	Page 3 of 7 Pages					Exhibit R-2 (PE 0101122F)					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101122F Air Launched Cruise Missile					PROJECT 4797		
(U) <b><u>F. Schedule Profile Continued</u></b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Contract Milestones- Development											
(U)	Contract Award - CATIK			*								
(U)	Contract Award -INE						*					
(U)	Contract Milestones- Procurement											
(U)	Contract Award - CATIK (1st Qtr of FY03)											
(U)	Contract Award - INE (2nd Qtr of FY05)											
	CDR Slipped due to late contract award with Boeing											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE		
07 - Operational System Development		June 2001		
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
07 - Operational System Development		0101122F Air Launched Cruise Missile		4797
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>				
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) CATIK:				
(U) Hardware Development				
(U)     Interface Development		2,274	407	660
(U)     Testing/Integration		281	100	400
(U) Software Development				
(U)     Operational Flight Software		1,601	785	958
(U)     Automated Test Equipment Development			423	
(U)     Testing/Integration		492	142	539
(U)     Data Collection/Documentation		456		250
(U) CATIK Design for Test Range Requirements				
(U) Flight Test				
(U)     Flight Test				400
(U)     Flight Test Support				100
(U) INE:				
(U) Hardware Development				
(U)     Card Development			1,409	1,150
(U)     Nuclear Certification			195	
(U)     Testing/Integration			202	
(U) Software Development				
(U)     Operational Flight Software			2,588	2,096
(U)     Nuclear Certification				100
(U)     Automated Test Equipment Development				
(U)     Mission Planning				
(U)     Testing/Integration			71	88
(U)     Flight Testing			17	
(U)     Data Collection/Documentation				100
(U) Congressional Withhold			59	
(U) Total		5,104	6,398	6,841

Project 4797

Page 5 of 7 Pages

Exhibit R-3 (PE 0101122F)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101122F Air Launched Cruise Missile			PROJECT 4797		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Development:										
Boeing - CATIK	Eng Asgn/CPAF	Jul 00	5,104	5,104	0	5,104	3,290	2,858	3,677	14,929
TRW - INE	Eng Asgn/T&M	Jun 01	1,444	1,444	0	0	1,444	0	0	1,444
Boeing - INE	EngAsgn/CPAF	Jul 01	6,400	6,400	0	0	1,664	3,483	17,870	23,017
<u>Support and Management Organizations</u>										
N/A										
<u>Test and Evaluation Organizations</u>										
Utah Test Range	MIPR	Sept 02	N/A	N/A	0	0	0	400	8,500	8,900
49th Test Wing	MIPR	Sept 02	N/A	N/A	0	0	0	100	2,500	2,600
<b>(U) Government Furnished Property:</b>										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>										
N/A										
N/A										
<u>Support and Management Property</u>										
N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
07 - Operational System Development		0101122F Air Launched Cruise Missile			June 2001	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
(U) <u>Government Furnished Property Continued:</u>						
N/A						
<u>Test and Evaluation Property</u>						
None						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
		<u>Total</u>	<u>Program</u>			
<u>Subtotals</u>						
Subtotal Product Development		0	5,104	6,398	6,341	21,547
Subtotal Support and Management						
Subtotal Test and Evaluation		0	0	0	500	11,000
Total Project		0	5,104	6,398	6,841	32,547
		50,890				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0102325F Joint Surveillance System					PROJECT 2996		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2996	FAA/AF Radar Replacement (FARR)	350	0	0	0	0	0	0	0	0	23,195
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 The Joint Surveillance System (JSS) provides command, control and communications (C3) capability in support of CINC NORAD's (North American Aerospace Defense) Atmospheric Tactical Warning and Attack Assessment (ATW/AA) air sovereignty, and air defense requirements. The FAA/Air Force Radar Replacement (FARR) program replaces 39 existing JSS radars and 1 log set radar with solid-state, three-dimensional Air Route Surveillance Radar (ARSR)-4 radars to improve mission performance and reduce operation and maintenance costs. The ARSR-4 radars provide three-dimensional (range, azimuth, and height) digital data on aircraft targets within a 200+ nautical mile radius.

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$350 Program Office Support  
 (U) \$350 Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$0 No further funding in this project  
 (U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **B. Budget Activity Justification**  
 This program is in budget activity 7 - Operational System Development because it provides funding for the modernization of an existing and operating system.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0102325F Joint Surveillance System</b>			PROJECT <b>2996</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Previous President's Budget (FY 2001 PBR)			0				22,845			
(U)	Appropriated Value			0							
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions										
	b. Small Business Innovative Research										
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram			350							
	e. Rescissions										
(U)	Adjustments to Budget Years Since FY 2001 PBR										
(U)	Current Budget Submit/FY 2002 PBR			350				23,195			
(U)	<u>Significant Program Changes:</u>										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN	191	61	28	0	0	0				280
<b>(U) E. Acquisition Strategy</b>											
The Federal Aviation Administration (FAA) is the lead acquisition agency for the FAA/AF Radar Replacement Program in accordance with a 19 November 1984 sub-agreement (as amended by Amendment 1, dated 1 September 1988) to FAA/AF National Agreement (NAT) 711. The FAA and the Air Force have established a joint Program Office at HQ, FAA, Washington, DC for this procurement. Northrup Grumman Corporation, Linthicum, MD is the prime contractor for the FARR program.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0102325F Joint Surveillance System</b>					PROJECT <b>2996</b>		
<b>(U) <u>F. Schedule Profile Continued</u></b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	FARR last operational readiness date			*								
(U)	FARR follow-on support including baselining/commissioning before FAA final					*						
Note: * denotes completed event, X denotes planned event.												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0102325F Joint Surveillance System			PROJECT 2996			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	Systems engineering				0		0				
(U)	Contractor engineering support				0		0				
(U)	Installation/Test/Checkouts				0		0				
(U)	Program Office support				350		0				
(U)	Total				350		0				
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
None											
<u>Support and Management Organizations</u>											
	MITRE	Various		N/A	N/A	5,699	100	0		0	5,799
	TEMS	Various		N/A	N/A	1,784	0	0		0	1,784
	Martin Marietta	Various		N/A	N/A	6,339	0	0		0	6,339
	Program Office Support	Various		N/A	N/A	2,288	250	0		0	2,538
<u>Test and Evaluation Organizations</u>											
	Various					6,735	0	0		0	6,735
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
none											
Project 2996					Page 4 of 5 Pages			Exhibit R-3 (PE 0102325F)			

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>		<b>DATE</b>				
<b>07 - Operational System Development</b>		<b>0102325F Joint Surveillance System</b>			<b>June 2001</b>	
<b>BUDGET ACTIVITY</b>		<b>PE NUMBER AND TITLE</b>			<b>PROJECT</b>	
<b>07 - Operational System Development</b>		<b>0102325F Joint Surveillance System</b>			<b>2996</b>	
<b>(U) <u>Government Furnished Property Continued:</u></b>						
<u>Support and Management Property</u>						
none						
<u>Test and Evaluation Property</u>						
none						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development					
	Subtotal Support and Management	16,110	350	0		16,460
	Subtotal Test and Evaluation	6,735	0	0		6,735
	Total Project	22,845	350	0		23,195

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0102326F Region/ Sector Operations Control Center</b>					PROJECT <b>4592</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4592	Region/Sector Operations Modernization Center (R/SAOC)	11,557	983	0	0	0	0	0	30,326	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 NOTE: Region/Sector Air Operations Center (R/SAOC), now referred to as the Region Air Operations Center Air Defense Sector (RAOC/ADS) - USAF notified congress of the termination of contractor, Litton Data Systems, Agoura, CA. Contractor terminated 1 Oct 1999 because of excessive cost growth, schedule slips, and an improved understanding of requirements by both users and industry. Program being re-structured and Congress will be notified with more detailed cost and schedule information when Bi-National Steering Committee approves re-structured RAOC/ADS. RAOC/ADS is pursuing an acquisition strategy entitled Common Battle Management Software (CBMS) that could be utilized by several C2 platforms to further advance C2 concepts supporting future aerospace operations. Conducting acquisition activities to include, but not limited to studies, requirements analysis, modeling and simulation, risk reduction, acquisition planning and enterprise integration.

The Region and Sector Air Operations Center/Air Defense Sector (RAOC/ADS) Modernization Program will provide a modernized Command, Control, Communication, Computer and Intelligence (C4I) system with enhanced capability to integrate data from existing and future civil and military defense surveillance system into a comprehensive recognized air picture to enhance CINC NORAD's (North American Aerospace Defense Command) capability to conduct a peacetime air sovereignty, transition and conventional warfare in the event of aggression toward the North American Continent. The current system has reached saturation in its capability to receive, process, display, exchange, and employ air surveillance data from current sensor and communication systems. In some cases, it has exceeded processing and displaying capacity, thus contributing to delayed C4I decisions. The outdated technology has become increasingly difficult and costly to sustain and provides no application enhancement..

(U) **FY 2000 (\$ in Thousands)**

(U) \$6,532	Close out of terminated contract with Litton Data Systems
(U) \$3,947	Program Management and Technical Support
(U) \$1,052	Program Office Support
(U) \$26	Test and Evaluation
(U) \$11,557	Total

Project 4592

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																																			
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0102326F Region/ Sector Operations Control Center</b>	PROJECT <b>4592</b>																																																																			
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$750</td> <td>Program Management Technical Support</td> </tr> <tr> <td>(U) \$233</td> <td>Program Office Support</td> </tr> <tr> <td>(U) \$0</td> <td>Program Restructuring Analysis</td> </tr> <tr> <td>(U) \$983</td> <td>Total</td> </tr> </table> <p>The following net transactions are not reflected in the FY01 program total: BTR=+850K and SBIR=-30K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>No Activity</td> </tr> <tr> <td>(U) \$0</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is a budget activity 7 - Operational System Development because it provides funding for the modernization of a currently existing and operating system.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">13,239</td> <td style="text-align: center;">992</td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">13,239</td> <td style="text-align: center;">992</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-384</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">-2,723</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: center;">1,477</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-52</td> <td style="text-align: center;">-9</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">11,557</td> <td style="text-align: center;">983</td> <td></td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table>			(U) \$750	Program Management Technical Support	(U) \$233	Program Office Support	(U) \$0	Program Restructuring Analysis	(U) \$983	Total	(U) \$0	No Activity	(U) \$0	Total		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	13,239	992		TBD	(U) Appropriated Value	13,239	992			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research	-384				c. Omnibus or Other Above Threshold Reprogram	-2,723				d. Below Threshold Reprogram	1,477				e. Rescissions	-52	-9			(U) Adjustments to Budget Years Since FY 2001 PBR					(U) Current Budget Submit/FY 2002 PBR	11,557	983		TBD
(U) \$750	Program Management Technical Support																																																																				
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Project 4592	Page 2 of 6 Pages	Exhibit R-2 (PE 0102326F)																																																																			

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0102326F Region/ Sector Operations Control Center</b>	PROJECT <b>4592</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

(U) **Significant Program Changes:**

NOTE: USAF notified Congress of termination of contractor, Litton Data Systems, Agoura, CA - terminated 1 Oct 1999 for excessive cost growth, schedule slips and improved understanding of requirements by both users and industry. Program being re-structured and Congress will be notified with detailed cost and schedule information when Bi-National Steering Committee approves re-structured RAOC/ADS program. Studying an acquisition strategy embracing a Common Battle Management Software (CBMS) that could be utilized by several C2 platforms to further advance C2 concepts supporting future aerospace operations. Conducting acquisition activities to include, but not limited to, studies, requirements analysis, modeling and simulation, risk reduction, acquisition planning and enterprise integration.

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E	0	0	0	0	0	0	0	0		
(U) Other Procurement, OPAF (3080)	0	0	0	0	0	0	0	0		TBD
(U) Other APPN	0	0	0	0	0	0	0	0		

NOTE 1: Funding for procurement removed pending program restructure.

(U) **E. Acquisition Strategy**

Management for the RAOC/ADS Modernization is by ESC, AFMC, Hanscom AFB, MA. The RAOC/ADS Modernization acquisition is being pursued through an evolutionary acquisition approach to develop a modular, open system architecture, Defense Information Infrastructure (DII) Command Operating Environment (COE) compliant system through incremental software release and periodic hardware and commercial software refresh. Initial development focused on system to provide an initial capability designated as the Core Operating Capability (CO). Prime Contract was awarded in March 1997 to Litton Data Systems Division, Agoura Hills, CA.

Original contractor terminated 1 Oct 1999. USAF notified Congress of termination of contractor, Litton Data Systems, Agoura Hills, CA for excessive cost growth, schedule slips and improved understanding of requirements by users and industry. Program being re-structured and Congress will be notified with detailed cost and schedule information when Bi-National Steering Committee approves re-structured RAOC/ADS program. RAOC/ADS is pursuing an acquisition strategy entitled Common Battle Management Software (CBMS) that could be utilized by several C2 platforms to further advance C2 concepts supporting future aerospace operations. Conducting acquisition activities to include, but not limited to, studies, requirements analysis, modeling and simulation, risk reduction, acquisition planning and enterprise integration.

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0102326F Region/ Sector Operations Control Center</b>	PROJECT <b>4592</b>
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(U) **F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contractor Terminated/Congress notified												
*Denotes completed event												
Program under re-structure.												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0102326F Region/ Sector Operations Control Center			PROJECT 4592			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Program Office Support					1,052		233			
(U)	Program Management and Technical Support					3,947		750			
(U)	Contract Close due to termination of Litton Data Systems					6,532					
(U)	Test and Evaluation					26					
(U)	Total					11,557		983			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	LITTON*	CPAF	14 Mar 97			21,242	6,532	0		Continuing	TBD
	<u>Support and Management Organizations</u>										
	MITRE	Various	N/A	N/A	N/A	2,773	1,890	500		Continuing	TBD
	TEMS	Various	N/A	N/A	N/A	2,664	2,057	250		Continuing	TBD
	Program Office Support	Various	N/A	N/A	N/A	778	1,052	233		Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	46th Test Wing/Other Test Act					215	26	0		Continuing	TBD
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE		
				June 2001		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0102326F Region/ Sector Operations Control Center			4592	
(U) <u>Government Furnished Property Continued:</u>						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					
	Subtotal Product Development	21,242	6,532	0		TBD
	Subtotal Support and Management	6,215	4,999	983		TBD
	Subtotal Test and Evaluation	215	26	0		TBD
	Total Project	27,672	11,557	983		TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0102411F North Atlantic Defense System					PROJECT 2980	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2980	North Atlantic Defense System (NADS)	2,000	0	0	0	0	0	0	0	0	63,699
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 This program provides improvements to command, control, and communications (C3) and air surveillance capabilities in Iceland. The Control Reporting Center (CRC) and air surveillance radars support air defense requirements in the strategically important Greenland-Iceland-Norwegian gap. The program is a joint program with NATO funding infrastructure while the US funds cryptographic capabilities, system engineering and integration activities. The Joint Formal Acceptance Inspection (JFAI), a NATO required technical inspection of the entire system, is complete. Both the JFAI and a NATO required financial audit are completed and the system has been turned over to NATO/Iceland.

In Jul 99 NATO approved full program funding for implementation of a Link 16 capability for North Atlantic Defense System (NADS) in Iceland (approx \$28M). As the host nation in Iceland, the US will be responsible for funding the system engineering and integration activities).

FY01 SPO Support performed with FY00 3600 funding provided by FY00 Omnibus.

(U) FY 2000 (\$ in Thousands)  
 (U) \$2,000 Program Management and Technical Support for Link 16 for NATO/Iceland  
 (U) \$2,000 Total

(U) FY 2001 (\$ in Thousands)  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) FY 2002 (\$ in Thousands)  
 (U) \$0 No Activity  
 (U) \$0 Total

Project 2980

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>																																																																																																			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0102411F North Atlantic Defense System</b>			PROJECT <b>2980</b>																																																																																																			
<p>(U) <b><u>B. Budget Activity Justification</u></b> The program is in Budget Activity 7 since it supports improvements to currently operational systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: right;">61,699</td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">2,000</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">0</td> <td></td> <td></td> <td style="text-align: right;">0</td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">2,000</td> <td></td> <td></td> <td style="text-align: right;">63,699</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b></p> <p>(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <td></td> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>E. Acquisition Strategy</u></b> The acquisition of hardware has been completed. Prior year funding provided engineering support during the NATO Operational Review known as the JFAI (Joint Formal Acceptance Inspection). The JFAI is a NATO technical and financial audit. Any discrepancies must be corrected to satisfy NATO.</p> <p>The anticipated three year contract will be funded under the NATO Infrastructure Program and will be conducted in accordance with NATO's document AC/4-D/2261, 'Infrastructure Committee The NATO Security Investment Programme Procedures for International Competitive Bidding (1996 Edition)'. As such, the contract type will be Firm Fixed Price (FFP). Additionally, the contract will direct that required changes to the NADS CRC software be accomplished through subcontract to Raytheon Integrated Systems Division, the OEM and owner of the software data rights.</p>									<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	0	0		61,699	(U) Appropriated Value					(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram	2,000				d. Below Threshold Reprogram					e. Rescissions	0			0	(U) Adjustments to Budget Years Since FY 2001 PBR					(U) Current Budget Submit/FY 2002 PBR	2,000			63,699		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN																
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																																																																						
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(U) Other APPN																																																																																																										
Project 2980		Page 2 of 5 Pages			Exhibit R-2 (PE 0102411F)																																																																																																					



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0102411F North Atlantic Defense System			PROJECT 2980			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Engineering Support					500		0			
(U)	Intergation Activiy Support										
(U)	Program Support					1,500					
(U)	Total					2,000		0			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	<u>Support and Management Organizations</u>										
	MITRE	Various	Oct 94	N/A	N/A	38,098	1,170	0		0	39,268
	TEMS	Various	Jun 94	N/A	N/A	16,761	498	0		0	17,259
	Program Office Support	Various		N/A	N/A	3,462	82	0		0	3,544
	<u>Test and Evaluation Organizations</u>										
	Various					3,378	0	0		0	3,378
	46th Test Wing/Other Test						250				250
	GFP/GFE	None					0	0		0	0
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0102411F North Atlantic Defense System</b>			PROJECT <b>2980</b>
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development						
Subtotal Support and Management	58,321	1,750	0		0	60,071
Subtotal Test and Evaluation	3,378	250	0		0	3,628
Total Project	61,699	2,000	0		0	63,699

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0203761F Warfighter Rapid Acquisition Program					PROJECT 4936		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4936	Warfighter Rapid Acquisition Program	0	0	30,247	25,168	25,193	25,218	25,241	25,269	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>- Funding for WRAP is moved from PE 27027 #674814 to PE 23761 #674936 beginning in FY02</p> <p>- FY03 - FY07 budget numbers do not reflect the DoD strategic review results</p> <p>(U) <b><u>A. Mission Description</u></b>            WRAP provides approval and rapid transition funding, up to 2 years, for the development and fielding of the results of highly successful competitive experiments, demonstrations, and innovative approaches to support the Expeditionary Air Force (EAF) and other warfighters. WRAP supports the specific DoD goal of significantly shortening the acquisition response time and acquisition cycle times. This process is expected to shorten the project decision/initiation time by 2-5 years for selected projects due to the integrated headquarters review and immediate availability of transition funding. Candidate projects will compete for WRAP approval and funds based on business case analyses; identified and demonstrated operational impact; cost savings; project development, production, and lifecycle costs; project risk; and cost of delay. The Air Force corporate structure will nominate projects to the VCSAF, CSAF and SECAF for final approval. Potential sources of projects include, but are not limited to, JEFX, Battlelabs, Joint Experimentation, ATDs, ACTDs, S&amp;T, and IR&amp;D efforts. MAJCOM/Agencies must commit full project funding in the subsequent programming cycle. AF will ensure the successful projects are incorporated in the future annual planning and programming guidance.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$30,247 WRAP project selection and project initiation            (U) \$30,247 Total</p>											
Project 4936				Page 1 of 4 Pages				Exhibit R-2 (PE 0203761F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0203761F Warfighter Rapid Acquisition Program</b>			PROJECT <b>4936</b>		
(U) <b><u>B. Budget Activity Justification</u></b>									
This effort is Budget Activity 7, Operational System Development, because the program provides a vehicle for developing operational concepts and attendant new technologies for enhancing capabilities of the 21st century aerospace force.									
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>									
			<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>		
(U)	Previous President's Budget (FY 2001 PBR)		0	0	25,000		TBD		
(U)	Appropriated Value								
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions								
	b. Small Business Innovative Research								
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram								
	e. Rescissions								
(U)	Adjustments to Budget Years Since FY 2001 PBR				5,247				
(U)	Current Budget Submit/FY 2002 PBR				30,247		TBD		
(U) <u>Significant Program Changes:</u>									
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
(U)	AF RDT&E								
(U)	Other APPN								
(U) <b><u>E. Acquisition Strategy</u></b>									
WRAP enables the Air Force experimentation and spiral development processes to decrease fielding timelines and allows development, fielding, or upgrading of systems until the sponsoring MAJCOM/Agency can incorporate them into their subsequent POM submission. AF through appropriate program offices will manage the acquisition and development process for the integration and fielding of WRAP approved projects. Each project will have a complete acquisition plan defined and approved prior to project selection. The Air Staff and the Air Force corporate structure will complete a Operations Review and an Acquisition Review to ensure project affordability and appropriateness within the Air Force Overall program. Requirements, funding, and acquisition plans will be approved by the Air Force corporate structure. The AF corporate structure will nominate projects to the VCSAF, CSAF and SECAF for final approval.									
Project 4936			Page 2 of 4 Pages			Exhibit R-2 (PE 0203761F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0203761F Warfighter Rapid Acquisition Program</b>					PROJECT <b>4936</b>		
<b>(U) F. Schedule Profile</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	WRAP Project Initiation Round 1									X		
(U)	WRAP Project Initiation Round 2										X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0203761F Warfighter Rapid Acquisition Program				PROJECT 4936	
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>
(U)	WRAP Projects Round 1									25,000
(U)	WRAP Projects Round 2									5,247
(U)	Total									30,247
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
ESC, ASC, SMC, Various	Various	Various	N/A	N/A	0	0	0	30,247	Continuing	TBD
<u>Product Development Organizations</u>										
Various										
<u>Support and Management Organizations</u>										
Various										
<u>Test and Evaluation Organizations</u>										
Various										
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>					0	0	0	30,247	TBD	TBD
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					0	0	0	30,247	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207027F Air Space Command & Control Agency					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	24,542	0	0	0	0	0	0	Continuing	TBD
4372 Time Critical Targeting	0	0	0	0	0	0	0	0	Continuing	TBD
4814 Expeditionary Force Experiment (EFX)	0	24,542	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

- Funding for JEFX transitions from PE 0207027 #674814 to PE 0202028 #674373 beginning in FY02  
 - Funding for TCT in FY00 and FY01 exists in PE 0208060 and begins in PE 0207027 #674372 beginning in FY02  
 - Funding for TCT transferred from PE 0207027 #674372 to PE 0207410 #674372 in FY02  
 -FY03-FY07 budget numbers do not reflect the DoD strategic review results

(U) **A. Mission Description**  
 This program provides fund for the Joint Expeditionary Force Experiments (JEFX) until FY 02 when it transitions to PE 0207028 and Time Critical Targeting (TCT) beginning in FY02.

JEFX are large-scale warfighter experiments and are part of the total Air Force experimentation effort. They combine live-fly forces and simulations into an operationally representative warfighter environment. These experiments provide a vehicle for experimentation with operational concepts and attendant new technologies for enhancing capabilities of the 21st century aerospace force. They are part of a broader effort to implement the Joint Vision 2020, exploit the Revolution in Military Affairs, and demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force Commander (JFC).

TCT cells will be fielded in Air Operations Centers (AOCs) to augment the dynamic aerospace command and control (C2) of Air Force and other theater assets in support of JFC prosecution of the highest priority time sensitive targets. The TCT cell supports the AOCs' ability to find, fix, track, engage and assess TCTs. Automated decision aids/tools will allow operators to quickly retrieve, process and fuse Intelligence Preparation of the Battlespace (IPB) data into actionable intelligence products to support successful prosecution of TCTs; model terrain affects within an Area of Interest (AOI); model both fixed and mobile threat behavior; track, develop, and nominate TCTs; and provide optimized near-real-time weapon-to-target pairing recommendations. An interface to an Intelligence, Surveillance, and Reconnaissance (ISR) battle manager application will also allow Theater Air Control System (TACS) elements to dynamically re-task ISR assets to support real-time

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																								
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0207027F Air Space Command &amp; Control Agency</b>																																																								
<p>(U) <b><u>A. Mission Description Continued</u></b>  target development, tracking, nomination of TCTs as well as strike assessment. TCT cells will reduce the targeting timelines to acceptable parameters defined in the Operational R requirements Document for the TCT cell.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>  This is a Budget Activity 7, Operational System Development, program providing a vehicle for experimentation with operational concepts and upgrades to existing operational systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">24,769</td> <td style="text-align: center;">13,900</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">24,769</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td></td> <td style="text-align: center;">-173</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: center;">0</td> <td style="text-align: center;">-54</td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: center;">-13,900</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">24,542</td> <td style="text-align: center;">0</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b>  - JEFX funding moved from from PE 0207027F to PE 0207028F in FY02.  - Time-Critical-Targeting (TCT) transitions from PE 0208060F (Pre EMD) into PE 0207027F (EMD) during the FY02.  - TCT RDT&amp;E funding transitioned from PE 020027F to PE 0207410F during the FY02 PB cycle to align under new Air Operations Center Program Element</p>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	0	24,769	13,900	TBD	(U) Appropriated Value	0	24,769			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-173			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions	0	-54		TBD	(U) Adjustments to Budget Years Since FY 2001 PBR			-13,900		(U) Current Budget Submit/FY 2002 PBR	0	24,542	0	TBD
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																						
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(U) Current Budget Submit/FY 2002 PBR	0	24,542	0	TBD																																																						
Page 2 of 6 Pages		Exhibit R-2 (PE 0207027F)																																																								

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207027F Air Space Command &amp; Control Agency</b>					PROJECT <b>4814</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4814    Expenditary Force Experiment (EFX)	0	24,542	0	0	0	0	0	0	Continuing	TBD	
<p>Note:</p> <ul style="list-style-type: none"> <li>- JEFX 98, 99,00 were executed within existing command and control space programs.</li> <li>- FY2001 is the first year EFX has been included in the BES cycle.</li> <li>- Starting FY 2002 EFX will be performed under PE 0207028F, Joint Expeditionary Force Experiment, Project #674373.</li> <li>- FY03 - FY07 budget numbers do not reflect the DoD strategic review results.</li> </ul> <p>(U) <b><u>A. Mission Description</u></b></p> <p>The Joint Expeditionary Force Experiments (JEFX) are large-scale warfighter experiments and are part of the total AF experimentation effort. They combine live-fly forces and simulations into an operationally representative warfighter environment. These experiments provide a vehicle for experimentation with operational concepts and attendant new technologies for enhancing capabilities of the 21st century aerospace force. They are part of a broader effort to implement the Joint Vision 2010, exploit the Revolution in Military Affairs, and demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force Commander.</p> <p>JEFX 2000 emphasized Agile Combat Support, but exploration also occurred in managing intelligence, surveillance, and reconnaissance assets; global mobility; and dynamic battle control. JEFX 2000 was planned and executed with reprogrammed funds and other Air Force funding from existing command and control, global power, global reach, and space Program Elements.</p> <p>In FY01, the Air Force moves to a biennial schedule for JEFX conducted in the even years. In addition, the Air Force begins the integration of proven initiatives into integrated Air Force/Joint/Coalition Command and Control providing integrated/interoperable fielded capabilities for warfighter use. Transition of selected technologies to the warfighter will be based on a rigorous, defined process which ensures interoperability with fielded programs and maximum return on investment. Specific weapon system development and procurement activities are funded in their own budget lines as applicable. A full-scale experiment, as performed in FY99 and FY00, will be conducted in FY02 in PE 0207028. Integrated Air Force/Joint/Coalition Command and Control integration of new initiatives and legacy systems into an integrated Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) baseline will be an ongoing activity.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$0                      No Activity</p> <p>(U) \$0                      Total</p>											
Project 4814			Page 3 of 6 Pages				Exhibit R-2A (PE 0207027F)				

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207027F Air Space Command &amp; Control Agency</b>	<b>PROJECT</b> <b>4814</b>
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(U) **A. Mission Description Continued**

(U) **FY 2001 (\$ in Thousands)**

- (U) \$1,200 Initiatives from government and industry, selection and prioritization of new and previously considered initiatives, C2 Center Communications and computer development upgrades
- (U) \$3,760 Development of systems architecture and integration, including engineering, for the experiment
- (U) \$6,039 Planning and coordination for the experiment
- (U) \$3,543 Implement JEFX 2000 architectural configuration, conduct M&S, install infrastructure, install and test LAN configurations and communications, and test operational software
- (U) \$10,000 Integration of new initiatives and legacy systems into an integrated C2ISR baseline
- (U) \$24,542 Total

The following net transactions are not reflected in the FY01 program total: BTR=+\$4,999K, and SBIR = -\$1,000K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) **FY 2002 (\$ in Thousands)**

- (U) \$0 No Activity
- (U) \$0 Total

(U) **B. Project Change Summary**

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E	22,296	0	0	0	0	0			Continuing	TBD
(U) Other Procurement (OPAF)	2,186									
(U) Other APPN	35,900	0	0	0	0	0			Continuing	TBD

FY 2000 executed with reprogrammed funds and other Air Force funding from existing command and control, global power, global reach, and space Program Elements.

(U) **D. Acquisition Strategy**

Electronic Systems Center (ESC), Hanscom AFB, MA manages the acquisition and development process for the experimentation, integration, and fielding of selected technologies with legacy systems in an integrated C2ISR baseline. The spiral development system was created to field new and emerging technologies quickly. One of the tenets of the streamlined acquisition philosophy is to provide new capabilities through the integration of existing software components. JEFX periodically provides the opportunity to demonstrate new capabilities that provide decisive air and space power by identifying existing components and other software that can be integrated to

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207027F Air Space Command &amp; Control Agency</b>	PROJECT <b>4814</b>
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(U) **D. Acquisition Strategy Continued**  
 further advance effectiveness. Research and development funding is used to develop the integrating code for various systems ranging from communications, C2, computers, weapons, ISR and aerospace delivery vehicles. In addition, funds are used to develop enhancements to existing capabilities necessary to demonstrate how emerging products can improve the warfighters' effectiveness. Spirals within the acquisition cycle allow deficiencies to be identified and considered for future spirals as well as the next experiment or applied to current capabilities. Selected technologies will be identified via a vigorous, defined process for integration with existing systems and transitioned to the field for warfighter use. Integration efforts will capitalize on the synergy between evolving technologies and on-going system program modifications to maximize the return on investment.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Commence movement of selected initiatives to the field					X							
(U) Call for Initiatives APTX 01					X							
(U) Initiative Selection, APTX 01						X						
(U) Architectural Development, APTX 01							X					
(U) Conduct APTX 01											X	
(U) Call for Initiatives, JEFX 2002											X	
(U)												

\* Denotes completed event  
 X Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207027F Air Space Command & Control Agency			PROJECT 4814		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>			
(U) Initiatives from government and industry, selection and prioritization of new and previously considered initiatives, C2 Center Communications and Computer development upgrades						1,200				
(U) Development of systems architecture and integration, including engineering, for the experiment						3,760				
(U) Planning and coordination for the experiment						6,039				
(U) Implement architectural configuration, conduct M&S, , install and test communications configurations						3,543				
(U) Integration of new initiatives and legacy systems into an integrated C2ISR baseline						10,000				
(U) Total						24,542				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
ESC, AC2ISRC	various	various	N/A	N/A			24,542		Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
<u>Subtotals</u>					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Subtotal Product Development							24,542		TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project							24,542		TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207028F Joint Expeditionary Force Experiment						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	64,005	31,987	67,377	32,906	68,461	33,245	Continuing	TBD
4373 JEFX	0	0	59,378	25,544	60,625	26,147	63,412	28,191	Continuing	TBD
4991 JDEP	0	0	4,627	6,443	6,752	6,759	5,049	5,054	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

- FY03 - FY07 budget numbers do not reflect the DoD strategic review results

(U) **A. Mission Description**  
 The Joint Expeditionary Force Experiments (JEFX) are large-scale warfighter experiments and are part of the total AF experimentation effort. They combine live-fly forces and simulations into an operationally representative warfighter environment. These experiments provide a vehicle for experimentation with operational concepts and attendant new technologies for enhancing capabilities of the 21st century aerospace force. They are part of a broader effort to implement the Joint Vision 2020, exploit the Revolution in Military Affairs, and demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force Commander.

In FY01, the Air Force moved to a biennial schedule for JEFX conducted in the even years. In order to reduce risk in the large scale experiments in the even years, a small scale Advanced Process and Technology Experiment (APTX) is scheduled for the odd years. These experiments will focus on a single problem that will be part of the JEFX experiment. For 2001 (performed under PE 0207027) the focus is alliance operations which requires building an open Combined Aerospace Operations Center (CAOC) floor. In addition, the Air Force begins the integration of proven initiatives into integrated Air Force/Joint/Coalition Command and Control providing integrated/interoperable fielded capabilities for warfighter use. Transition of selected technologies to the warfighter will be based on a rigorous, defined process which ensures interoperability with fielded programs and maximum return on investment. Funding for transition of selected technologies is provided in the odd years only. Specific weapon system development and procurement activities are funded in their own budget lines as applicable.

A full-scale experiment as performed in FY99 and FY00 will be conducted in FY02. The amounts listed below for each category are based on previous large scale experiments. While the total program funding isn't affected, the amounts in each category may change based on the scope and direction for the experiment, and the initiatives selected. This flexibility is necessary to fully support the Congressionally directed joint force experiment, Millennium Challenge 02. Also, the JEFX

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207028F Joint Expeditionary Force Experiment</b>
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(U) **A. Mission Description Continued**  
 experiment will be scheduled at the same time as USJFCOM's Millennium Challenge 02, in order for both experiments to leverage each other. Integrated Air Force/Joint/Coalition Command and Control integration of new initiatives and legacy systems into an integrated Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) baseline will be an ongoing activity.

The Joint Distributed Engineering Plant (JDEP) connects combat system engineering sites and replicates Joint Force Combat Systems to create a network testbed to assess joint Battle Management, Command, Control, Communication, Computers and Intelligence. Its objective is to improve interoperability of weapons systems and platforms through more rigorous interoperability evaluation in a replicated battlefield environment. JDEP will provide the capability both to improve service and joint systems performance in a system-of-systems environment.

JDEP will link existing service and joint combat system engineering and test sites, such as C4I hardware in-the-loop and computer-program in-the-loop engineering sites (including design activities, software support activities, test and evaluation facilities and training commands) located around the country.

(U) **B. Budget Activity Justification**  
 This effort is a Budget Activity 7, Research, Development, Test and Evaluation, Management Support, because the program provides a vehicle for developers, testers and warfighters for experimentation, analysis, operational concepts and new technologies for enhancing capabilities of the 21st century aerospace force.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)			63,053	
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2001 PBR			952	
(U) Current Budget Submit/FY 2002 PBR			64,005	TBD

(U) **Significant Program Changes:**  
 \$4.6M was added to PE 0207028F for JDEP in FY02 to support interoperability assessment of key joint BMC4I systems.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207028F Joint Expeditionary Force Experiment</b>					PROJECT <b>4373</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4373    JEFX	0	0	59,378	25,544	60,625	26,147	63,412	28,191	Continuing	TBD	
<p>Note:</p> <ul style="list-style-type: none"> <li>- JEFX 98, 99,00 were executed within existing programs.</li> <li>- FY2001 is being executed under PE 0207027 Expeditionary Force Experiment, Program #674814.</li> <li>- FY 2002 JEFX is the first year of execution under this PE 0207028F.</li> </ul> <p>(U) <b><u>A. Mission Description</u></b></p> <p>The Joint Expeditionary Force Experiments (JEFX) are large-scale warfighter experiments and are part of the total AF experimentation effort. They combine live-fly forces and simulations into an operationally representative warfighter environment. These experiments provide a vehicle for experimentation with operational concepts and attendant new technologies for enhancing capabilities of the 21st century aerospace force. They are part of a broader effort to implement the Joint Vision 2020, exploit the Revolution in Military Affairs, and demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force Commander.</p> <p>In FY01, the Air Force moved to a biennial schedule for JEFX conducted in the even years. In order to reduce risk in the large scale experiments in the even years, a small scale Advanced Process and Technology Experiment (APTX) is scheduled for the odd years. These experiments will focus on a single problem that will be part of the JEFX experiment. For 2001 (performed under PE 0207027) the focus is alliance operations which requires building an open Combined Aerospace Operations Center (CAOC) floor. In addition, the Air Force begins the integration of proven initiatives into integrated Air Force/Joint/Coalition Command and Control providing integrated/interoperable fielded capabilities for warfighter use. Transition of selected technologies to the warfighter will be based on a rigorous, defined process which ensures interoperability with fielded programs and maximum return on investment. Funding for transition of selected technologies is provided in the odd years only. Specific weapon system development and procurement activities are funded in their own budget lines as applicable.</p> <p>A full-scale experiment as performed in FY99 and FY00 will be conducted in FY02. The amounts listed below for each category are based on previous large scale experiments. While the total program funding isn't affected, the amounts in each category may change based on the scope and direction for the experiment, and the initiatives selected. This flexibility is necessary to fully support the Congressionally directed joint force experiment, Millennium Challenge 02. Also, the JEFX experiment will be scheduled at the same time as USJFCOM's Millennium Challenge 02, in order for both experiments to leverage each other. Integrated Air Force/Joint/Coalition Command and Control integration of new initiatives and legacy systems into an integrated Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) baseline will be an ongoing activity.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
<b>07 - Operational System Development</b>		<b>4373</b>
PE NUMBER AND TITLE		
<b>0207028F Joint Expeditionary Force Experiment</b>		
(U) <b><u>A. Mission Description Continued</u></b>		
(U) <u>FY 2000 (\$ in Thousands)</u>		
(U) \$0	No Activity	
(U) \$0	Total	
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$0	No Activity	
(U) \$0	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$19,728	Initiatives from government and industry, selection and prioritization of new and previously considered initiatives, C2 center communications and computer development upgrade. Initiatives are the pieces of the experiment that utilize the infrastructure to expand the capabilities of the Aerospace Expeditionary Force (AEF) and consist of proposals submitted by government and industry for experimentation in the JEFX environment. They are both process as well as technology. The JEFX environment is a future environment that leverages as much as possible existing infrastructure but projects capabilities that will or should be obtained in the near future. They introduce these new technologies and operational capabilities into the AEF Concept of Operations (CONOPS). The systems architecture for JEFX 2002 will consist of capabilities carried over from JEFX 2000 and new capabilities in the form of initiatives for JEFX 2002. The main focus area for JEFX 02 is Time Critical Targeting and the C2 of ISR that enable it. The environment is a Combined Aerospace Operations Center (CAOC) with alliance integration on an open floor. Initiatives are the key to implementing improvements in these areas. Spiral development of some of the initiatives will be necessary to enable rapid fielding. Funding also provides enabling technologies for enhancements to the global grid which gives geographically separated C2 centers the ability to communicate.	
(U) \$12,593	Development of systems architecture and integration, including engineering, for the experiment. Contract engineering expertise is required to integrate initiatives into the cohesive systems architecture creating a C2 system of systems. In other words, the initiatives must be able to perform in an integrated fashion with the designed architecture. Previous experiments have successfully used a team of contractors for this effort. Integration is the major reason JEFX is an experiment and not simply a demonstration or exercise.	
(U) \$7,793	Planning, coordination, and assessing the experiment. Provides the funds that are essential to plan, design, assess the experiment, and provide a final report to the CSAF. It also provides expertise to support SPO functions of initiative selection, acquisition, program administration, communications and systems planning.	
(U) \$19,264	Implement architectural configuration, conduct modeling and simulation (M&S), install infrastructure, install and test communications and architecture configurations for spirals and the experiment. Three spirals are conducted prior to the experiment to develop the JEFX environment, to identify and fix problem areas, and to provide training to the operators on new tools and processes. The training is needed to obtain a valid	
Project 4373	Page 4 of 13 Pages	Exhibit R-2A (PE 0207028F)

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																												
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207028F Joint Expeditionary Force Experiment</b>			PROJECT <b>4373</b>																																												
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b>                  assessment of the performance of the initiatives. The experiment fully executes the environment by bringing operators, communicators, live fly participants, evaluators and others to fully integrated, distributed nodes. M&amp;S provides the ability to replicate as much as possible the aerospace environment and Concept of Operations (CONOPS) for experimentation while minimizing costly real world assets. Some tools and processes require live fly assets to obtain valid assessments</p> <p>(U) \$0 Integration of new initiatives and legacy systems into an integrated C2ISR baseline. Funding provided in odd years only.</p> <p>(U) \$59,378 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b>                  Electronic Systems Center (ESC), Hanscom AFB, MA will manage the acquisition and development process for the experimentation, integration, and fielding of selected technologies with legacy systems in an integrated C2ISR baseline. The spiral development system was created to field new and emerging technologies quickly. One of the tenets of the streamlined acquisition philosophy is to provide new capabilities through the integration of existing software components. JEFX periodically provides the opportunity to demonstrate new capabilities that provide decisive air and space power by identifying existing DII components and other software that can be integrated to further advance effectiveness. Research and development funding will be used to develop the integrating code for various systems ranging from communications, C2, computers, weapons, Intelligence, Surveillance and Reconnaissance (ISR) and aerospace delivery vehicles. In addition, funds will be used to develop enhancements to existing capabilities necessary to demonstrate how emerging products can improve the warfighters' effectiveness. Spirals within the acquisition cycle allow deficiencies to be identified and considered for future spirals as well as the next experiment or applied to current capabilities. Selected technologies will be identified via a vigorous, defined process for integration with existing systems and transitioned to the field for warfighter use. Integration efforts will capitalize on the synergy between evolving technologies and on-going system program modifications to maximize the return on investment. Various time &amp; materials CAAS contracts will be awarded during the first quarter of FY02 to provide program support and various other contracts, CPFF, T&amp;M, cost plus award fee, etc., will be awarded during the first and second quarters pending the initiatives selected during the initiative selection process</p>									<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN																
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																									
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(U) Other APPN																																																			
Project 4373			Page 5 of 13 Pages			Exhibit R-2A (PE 0207028F)																																													

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0207028F Joint Expeditionary Force Experiment</b>					<b>4373</b>				
<b>(U) E. Schedule Profile</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U)	Call for initiatives for JEFX 2002 (Performed under PE 0207027F)											*		
(U)	Initiative selection, JEFX 2002 (Performed under PE 0207027F)											X		
(U)	Architectural Development, JEFX 2002											X		
(U)	Conduct Spiral I											X		
(U)	Conduct Spiral II											X		
(U)	Conduct Spiral III											X		
(U)	Conduct JEFX 2002 Experiments											X		
(U)	Perform Assessment, JEFX 2002 Experiments (1QFY03)													
(U)	Commence integration of selected initiatives (1QFY03)													
(U)	Call for Initiatives, APTX 03											X		
(U)	Implement JDEP sites at Hurlburt, Hanscom and Langley											X		
(U)	* Denotes completed event													
	X Denotes planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207028F Joint Expeditionary Force Experiment			PROJECT 4373		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>			
(U) Initiatives from government and industry, selection and prioritization of new and previously considered initiatives, C2 Center Communications and computer development upgrade							19,728			
(U) Development of systems architecture and integration, including engineering, for the experiment							12,593			
(U) Planning, coordination, and assessing the experiment.							7,793			
(U) Implement architectural configuration, conduct modeling and simulation (M&S), install infrastructure, install and test communications configurations.							19,264			
(U) Integration of new initiatives and legacy systems into an integrated C2ISR baseline. Funding provided in odd years only.							0			
(U) Total							59,378			
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
ESC	MITRE	1 October	N/A	N/A				6,000	Continuing	TBD
ESC	GSA	1 April	N/A	N/A				5,500	Continuing	TBD
ESC	IDIQ	1 October	N/A	N/A				1,500	Continuing	TBD
ESC	TBD	TBD	N/A	N/A				24,587	Continuing	TBD
AC2ISRC	Time & Materials	1 December	N/A	N/A				1,000	Continuing	TBD
AC2ISRC	Time & Materials	1 October	N/A	N/A				300	Continuing	TBD
AC2ISRC	Time & Materials	1 October	N/A	N/A				250	Continuing	TBD
AC2ISRC	Time &	1 February	N/A	N/A				200	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0207028F Joint Expeditionary Force Experiment</b>			<b>4373</b>			
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Product Development Organizations</u>										
	Materials									
AC2ISRC	Time & Materials	1 December	N/A	N/A		1,811	Continuing	TBD		
AC2ISRC	Time & Materials	1 December	N/A	N/A		499	Continuing	TBD		
AC2ISRC	Time & Materials	1 December	N/A	N/A		959	Continuing	TBD		
AC2ISRC	Time & Materials	1 December	N/A	N/A		961	Continuing	TBD		
AC2ISRC	Time & Materials	1 December	N/A	N/A		287	Continuing	TBD		
AC2ISRC	Time & Materials	1 December	N/A	N/A		220	Continuing	TBD		
AC2ISRC	TBD	TBD	N/A	N/A		15,304	Continuing	TBD		
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development								59,378	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project								59,378	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207028F Joint Expeditionary Force Experiment</b>					PROJECT <b>4991</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4991	JDEP	0	0	4,627	6,443	6,752	6,759	5,049	5,054	Continuing	TBD
<p>- FY02 is first year of funding for JDEP in PE 0207028F</p> <p>- FY03 - FY07 budget numbers do not reflect the DoD strategic review results</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>The Joint Distributed Engineering Plant (JDEP) connects combat system engineering sites and replicates Joint Force Combat Systems to create a network testbed to assess joint Battle Management, Command, Control, Communication, Computers and Intelligence. It's objective is to improve interoperability of weapons systems and platforms through more rigorous interoperability evaluation in a replicated battlefield environment. JDEP will provide the capability both to improve service and joint system performance in a system-of-systems environment.</p> <p>JDEP will link existing Service and Joint combat system engineering and test sites, such as C4I hardware in the loop and computer-program-in-the-loop engineering sites (including Design Activities, software support activities, test &amp; evaluation facilities and training commands) located around the country.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$1,500 Site activation and Ops support: JDEP leverages as much as possible the existing infrastructure at sites throughout DoD to connect combat system engineering sites to emulate tactical data links. It builds on a federation of sites that are activated expanding on the current sites and identifying which ones should be activated in the future. This process gives geographically separated C2 centers and program offices the ability to work interoperability issues early in the acquisition process. There are 3-programmed AF sites scheduled to be activated. This includes hardware, software and activation cost for each site.</p> <p>(U) \$880 Communication architectures, links and engineering and support for site activities. This includes hardware, software and network connections for each site activated. It incorporates configuration management, scheduling, development &amp; implementation of communications architectures.</p>											
Project 4991			Page 9 of 13 Pages				Exhibit R-2A (PE 0207028F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>June 2001</b>																																																				
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207028F Joint Expeditionary Force Experiment</b>	PROJECT <b>4991</b>																																																				
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b></p> <p style="padding-left: 40px;">This will support distributed hardware, software and warfighter-in-the-loop joint integration activities. It leverages connections at existing facilities, which allows a repeatable environment to be readily available to developers, engineers and warfighters.</p> <p>(U) \$600 Existing JDEP support activities. This includes ops and maintenance of the current sites, which are JDEP capable. This includes ops &amp; maintenance support along with contracted personnel to assist in event activities.</p> <p>(U) \$295 Development of systems architecture and integration, including engineering, for the JDEP repeatable environment. This effort will include development of Joint simulation and stimulation environments to support integration &amp; interoperability assessment. Allows a customer to come to a single facility for resolution to system solutions.</p> <p>(U) \$825 Experiment implementation and analysis to participant in various events during pre, during and post exercise events. It includes support staff to assist users in the analysis of data, identifying problems and assistance in system solutions</p> <p>(U) \$527 Development of a simulation/stimulation environment for JDEP events. This incorporates the simulation of an environment that allows customers an opportunity to resolve interoperability issues with realistic scenarios.</p> <p>(U) \$4,627 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b> - FY02 First year of JDEP funding.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 10%;"><u>FY 2000</u></th> <th style="width: 10%;"><u>FY 2001</u></th> <th style="width: 10%;"><u>FY 2002</u></th> <th style="width: 10%;"><u>FY 2003</u></th> <th style="width: 10%;"><u>FY 2004</u></th> <th style="width: 10%;"><u>FY 2005</u></th> <th style="width: 10%;"><u>FY 2006</u></th> <th style="width: 10%;"><u>FY 2007</u></th> <th style="width: 10%;"><u>Cost to</u></th> <th style="width: 10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b> Acquisition Strategy: Electronic Systems Center (ESC), Hanscom AFB, MA will manage the acquisition and development process for the experimentation, integration and site activation activities for all Air Force JDEP activities. JDEP will provide and opportunity to perform integration activities with joint users from a single location for system integration, development and risk reduction activities.</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 20%;"><u>FY 2000</u></th> <th style="width: 20%;"><u>FY 2001</u></th> <th style="width: 20%;"><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN												<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																												
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																													
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(U) Other APPN																																																						
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																																																			
Project 4991	Page 10 of 13 Pages	Exhibit R-2A (PE 0207028F)																																																				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001					
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT					
<b>07 - Operational System Development</b>					<b>0207028F Joint Expeditionary Force Experiment</b>					<b>4991</b>					
<b>(U) E. Schedule Profile Continued</b>															
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>			
		1	2	3	4		1	2	3	4		1	2	3	4
(U)	Event Planning											X			
(U)	Conduct SIAP Interoperability Event												X		
(U)	Implement JDEP connectivity at Hanscom and other Air Force sites.													X	
(U)	Conduct PAC3 IOT&E (Extended)													X	
(U)	Conduct TACMEMO Interoperability Event														X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207028F Joint Expeditionary Force Experiment			PROJECT 4991		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>							<u>FY 2000</u>	<u>FY 2001</u>		<u>FY 2002</u>
(U)	Site Activation and Ops support									1,500
(U)	Communication architectures, links, and engineering support									880
(U)	Existing JDEP support activities									600
(U)	Development of systems architecture and integration for JDEP repeatable environment									295
(U)	Experiment implementation and analysis to participants									825
(U)	Development of a simulation/stimulation environment for JDEP events									527
(U)	Total									4,627
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
<u>Support and Management Organizations</u>										
Site 1	Boeing	1 Oct 01	N/A	N/A	0	0	0	600	Continuing	TBD
Site 2 (ESC)	MITRE	1 Oct 01	N/A	N/A	0	0	0	150	Continuing	TBD
Site 2 (ESC)	ITSP	1 Oct 01	N/A	N/A	0	0	0	350	Continuing	TBD
Site 3	TBD	1 Oct 01	N/A	N/A	0	0	0	500	Continuing	TBD
Site 4	TBD	1 Oct 01	N/A	N/A	0	0	0	500	Continuing	TBD
ESC	MITRE	1 Oct 01	N/A	N/A	0	0	0	660	Continuing	TBD
ESC	ITSP	1 Oct 01	N/A	N/A	0	0	0	600	Continuing	TBD
ESC	IDIQ	1 Oct 01	N/A	N/A	0	0	0	480	Continuing	TBD
ESC	TRW	1 Dec 01	N/A	N/A	0	0	0	150	Continuing	TBD
ESC	TBD	1 Dec 01	N/A	N/A	0	0	0	160	Continuing	TBD
ESC	Raytheon	1 Oct 01	N/A	N/A	0	0	0	100	Continuing	TBD
ESC	TBD	TBD	N/A	N/A	0	0	0	377	Continuing	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0207028F Joint Expeditionary Force Experiment</b>			<b>4991</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>						
<u>Test and Evaluation Organizations</u>						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	0	0	0	4,627	TBD
	Subtotal Support and Management	0	0	0	4,627	TBD
	Subtotal Test and Evaluation					
	Total Project	0	0	0	4,627	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207131F A-10 SQUADRONS</b>					PROJECT <b>4809</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4809	A-10 Squadrons	7,746	9,626	3,049	10,257	44,754	9,251	9,556	9,767	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>FY03-FY07 budget numbers do not reflect the DOD strategic review results.</p> <p><b>(U) A. Mission Description</b>                      The primary mission of the A/OA-10 is to provide close air support (CAS) for friendly land forces and to act as the forward air controller (FAC) to coordinate and direct friendly air forces in support of land forces. The A/OA-10 has a secondary mission of supporting search and rescue (SAR) and special forces operations. It also possesses a limited capability to perform certain types of interdiction. All of these missions may take place in a high- or low-threat environment. The A-10 System Program Office (SPO) is directed to upgrade and modernize the A/OA-10 aircraft to enhance its ability to support CAS and interdiction mission requirements. The Integrated Flight and Fire Control Computer (IFFCC), formerly known as the Low Altitude Safety and Targeting Enhancement (LASTE) computer upgrade, will enhance the computer memory, throughput, and system architecture to allow the aircraft to integrate advanced weapons and accommodate a situational awareness display, a data-link capability, an Electronic Warfare Management System, and the Digital Terrain System.</p> <p>A follow on to the current IFFCC program, called Precision Engagement, is being explored in order to meet additional user requirements. It accelerates the Digital Data Link and the 1760 Bus upgrades. Additionally, this effort combines the Digital Data Link and the Common Data Link Solution with other modifications.</p> <p>Additional development for a moving map capability is a high priority with the users. A new start is envisioned in the outyears.</p> <p>RDT&amp;E funds are executed in developing improved capability, maintenance, and safety modification development efforts. Without continuing avionics, airframe and weapon systems upgrades, the A/OA-10 will have difficulty adhering to the regional CINCs requirement for a Close Air Support platform.</p> <p><b>(U) FY 2000 (\$ in Thousands)</b></p> <p>(U) \$7,214 Continue software update/conversion and hardware development for Integrated Flight and Fire Control Computer (IFFCC)</p> <p>(U) \$532 Initiate Common Data Link Solution</p> <p>(U) \$0 Software development and integration solutions</p> <p>(U) \$7,746 Total</p>											
Project 4809			Page 1 of 6 Pages				Exhibit R-2 (PE 0207131F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
		June 2001		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0207131F A-10 SQUADRONS</b>	<b>4809</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>				
(U) \$9,547	Continue software update/conversion and hardware development for IFFCC/next generation IFFCC.			
(U) \$79	Software and hardware development for the Digital Terrain System (DTS)			
(U) \$9,626	Total			
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
(U) \$1,277	Precision Engagement			
(U) \$273	Digital Data Link			
(U) \$1,499	1760 Bus			
(U) \$0	Digital Terrain System			
(U) \$3,049	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
The A/OA-10 RDT&E program is in budget activity 7 - Operational System Development because it supports an operational system.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	8,013	8,615	8,933	TBD
(U) Appropriated Value	8,013	8,615		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-235	-89		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions	-32			
(U) Adjustments to Budget Years Since FY 2001 PBR		1,100	-5,884	
(U) Current Budget Submit/FY 2002 PBR	7,746	9,626	3,049	TBD
<b>(U) <u>Significant Program Changes:</u></b>				
(U) FY02 adjustments include the removal of On-Board Oxygen Generating System (OBOGS) program and A-10 Clean Up. A programmatic decision was made to push OBOGS into the POM since the entire fleet could not be funded at this time.				
Project 4809		Page 2 of 6 Pages		Exhibit R-2 (PE 0207131F)



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207131F A-10 SQUADRONS			PROJECT 4809		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Integrated Flight and Fire Control Computer (IFFCC)					7,214		9,547		0
(U)	Digital Terrain System (DTS)					0		79		0
(U)	Precision Engagement					0		0		1,277
(U)	Digital Data Link					532		0		273
(U)	1760 Bus Upgrade					0		0		1,499
(U)	Mission Support					0		0		0
(U)	Total					7,746		9,626		3,049
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin Systems Integration	IFFCC/Next Generation IFFCC A-10 Prime Contract/CPAF	2Q99	TBD	TBD		7,214	9,547	0	Continuing	TBD
Lockheed Martin Systems Integration	Digital Terrain System (DTS) A-10 Prime Contract/CPAF	3Q01	TBD	TBD	0	0	79	0	Continuing	TBD
Lockheed Martin Systems Integration	Onboard Oxygen	2Q05	TBD	TBD	0	0	0	0	1,747	1,747
Project 4809										



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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0207131F A-10 SQUADRONS</b>		PROJECT <b>4809</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	7,746	9,626	3,049	TBD	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project	0	7,746	9,626	3,049	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207133F F-16 Squadrons</b>					PROJECT <b>2671</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2671	F-16 Squadrons	106,623	122,767	110,797	81,620	71,242	98,054	87,331	80,858	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: FY03-FY07 budget numbers do not reflect DOD's strategic review results.

(U) **A. Mission Description**  
 The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 25-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as defense suppression, armed reconnaissance, close air support, combat air patrol, forward air control, and battle air interdiction (day/night and all-weather). Also during these years the aircraft has evolved in its capabilities to exploit the advances made in computer, avionics systems, engine, and structures technologies. The F-16 has been selected by 20 air forces around the world. USAF and foreign military sales production will continue well into the 21st century. The F-16 System Program Office (SPO) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

The F-16 program develops enhanced combat capability in both the air-to-ground and air-to-air role. Several modifications to improve the F-16's combat capabilities have been combined into a single modification known as the Common Configuration Implementation Program (CCIP) to save significant costs during the production phase. CCIP will modify all Block 40 and Block 50 F-16 aircraft; Block 50 is the lead platform. CCIP integrates several programs under one umbrella and allows incorporation of Link 16, Joint Helmet Mounted Cueing System (JHMCS), and Air-to-Air Interrogator (AAI) onto the F-16:

- The main driver for CCIP will be the Link 16 program. Link 16 is a data link that connects main components of a battle arena to maintain awareness and to share battle management data. The Link 16 program designs the appropriate Group A (hardware mounted permanently on aircraft) to incorporate existing Group B (hardware that is easily removed from airplane) developed by the Multifunctional Information Distribution System (MIDS) Office and adapted for use on the F-16.
- To enhance the display of the Link 16 data, the current black and white display will be replaced with the Color Multifunction Display (CMFD) used by the European Participating Air Force's (EPAF) F-16s.
- To have sufficient computing power in the Block 40/50 aircraft to operate Link 16 and to allow the cost savings by using a common Operational Flight Program, the General Avionics Computer (GAC) must be replaced with the Modular Mission Computer (MMC). The MMC is an upgraded version of the computer that was developed for the EPAF Mid-life Update program. The F-16 SPO is developing the MMC for USAF requirements. The MMC will extend the cost effective life of the F-16 through replacement of three Line Replaceable Units and the addition of significant memory and processing growth provisions.
- JHMCS incorporates a man-mounted, ejection capable helmet mounted display system, with the capability to cue and verify cueing of high off-axis sensors and weapons. The F-16 JHMCS program will integrate the following government furnished equipment with the F-16: flight helmet with display optics, image source,

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207133F F-16 Squadrons</b>	PROJECT <b>2671</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>                      helmet tracker transducer w/attached cable, graphics processor/video hardware and software to drive the display, helmet tracker hardware and software. The integration will interface with aircraft computers, weapons and sensor hardware and will provide software to integrate the JHMCS functions with other onboard systems.</p> <p>Other modifications which are being or will be developed during the FYDP:</p> <p>a. Advanced Weapons Integration will integrate Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW) and Wind Corrected Munition Dispenser (WCMD) smart weapons into the Block 40 and Block 50 F-16.</p> <p>b. Global Positioning System (GPS) Integration adds GPS capability to the Block 30 and supports testing of GPS changes to other F-16 Blocks. The F-16 development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests.</p> <p>c. Integrate a targeting pod on the Block 50/52 and transition the HARM Targeting System (HTS) pod to the left inlet hardpoint. This will allow the F-16 Block 50 to perform the SEAD/DEAD mission.</p> <p>d. The Mark XII IFF system (Air-to-Air Interrogator) consists of a single unit interrogator/transponder, a beam forming network, fuselage-mounted array antenna elements, and a lower interrogator antenna. The system provides a higher reliability rate and increases performance over present systems. Initial capabilities include coverage of + or - 60 degrees azimuth and elevation coverage with a + or - 2 degree accuracy, a range accuracy of 152 meters and range of 100 nmi. 32 in beam targets can be handled. Modes 1, 2, 3/A, C, S, and 4 are available.</p> <p>e. Structural analysis from the on-going Structural Integrity Program (SIP) has indicated that the F-16 is experiencing structural fatigue that will impact the ability of the airframes to reach their 8,000 hrs service life. RDT&amp;E funds are required to design the required structural modifications, as appropriate for each F-16 Block of aircraft. Falcon STAR development costs will be shared with the Multi-National Fighter Program (MNFP) countries.</p>		
<p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p>		
(U) \$13,646	Complete Block 50 Link 16, Continue Block 40	
(U) \$8,077	Complete Block 50 JHMCS, Continue Block 40	
(U) \$469	Continue Block 40 Color Display Development/Integration	
(U) \$6,683	Continue Block 40 MMC	
(U) \$2,450	Continue Training Devices	
(U) \$49,258	Continue OFP Updates	
(U) \$603	Complete Block 30 GPS Integration Activities	
(U) \$25,437	Continue Flight Tests DT&E	
(U) \$106,623	Total	
Project 2671	Page 2 of 8 Pages	Exhibit R-2 (PE 0207133F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207133F F-16 Squadrons</b>	PROJECT <b>2671</b>
(U) <b><u>A. Mission Description Continued</u></b>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$6,170	Continue Block 40 Link 16	
(U) \$5,000	Continue Block 40 JHMCS	
(U) \$1,862	Continue Block 40 Color Display Development/Integration	
(U) \$6,218	Continue Block 40 MMC	
(U) \$9,654	Complete Training Devices	
(U) \$53,795	Continue OFP Updates	
(U) \$31,687	Continue Flight Tests DT&E	
(U) \$3,023	Initiate Block 50 HTS/TGP Capability (Software development, design, test assets)	
(U) \$1,395	Initiate Falcon STAR (Structural analysis and design)	
(U) \$3,963	Initiate Onboard Oxygen Generator System (OBOGS) Retrofit	
(U) \$122,767	Total	
'NOTE: The following net transactions are not reflected in FY01 program totals: BTR=\$1,392, ATR=(\$3,963), and SBIR=(4,265). These transactions are not reflected in other sections of the R-docs where a FY01 total is shown.'		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$3,800	Complete Block 40 Link 16	
(U) \$3,600	Complete Block 40 JHMCS	
(U) \$1,200	Complete Block 40 Color Display Development/Integration	
(U) \$2,000	Complete Block 40 MMC	
(U) \$61,632	Continue OFP Updates	
(U) \$29,848	Continue Flight Tests DT&E	
(U) \$2,717	Continue Block 50 HTS/TGP Capability (Software development, design, test assets)	
(U) \$6,000	Continue Falcon STAR (Structural analysis and design)	
(U) \$110,797	Total	
(U) <b><u>B. Budget Activity Justification</u></b>		
Since the development activities in this PE support an operational aircraft, these development activities are funded in the Operational System Development budget activity 7.		
Project 2671	Page 3 of 8 Pages	Exhibit R-2 (PE 0207133F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0207133F F-16 Squadrons			2671				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Previous President's Budget (FY 2001 PBR)			114,162	124,903	84,465		TBD			
(U)	Appropriated Value			115,520	123,903						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-731	-867						
	b. Small Business Innovative Research			-3,298							
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram			-1,004							
	e. Rescissions			-452							
(U)	Adjustments to Budget Years Since FY 2001 PBR			-3,412	-269	26,332					
(U)	Current Budget Submit/FY 2002 PBR			106,623	122,767	110,797		TBD			
	The following net transactions are not reflected in the FY01 program total.										
<b>(U) Significant Program Changes:</b>											
	FY00: \$3,000 Congressional plus up for Air to Air Interrogator development for Block 50 Aircraft.										
	FY00: \$2,400 Congressional plus up for 600 Gallon Fuel Tanks										
	FY01: \$4,000 Congressional plus up for OBOGS retrofit, \$5,000 Congressional reduction for AGCAS										
	FY01: (\$3,963) OBOGS Deduction										
	FY01: \$3,000 Reprogramming										
	FY02: \$19,700 Air Force internal adjustment for CCIP and OFPs										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Aircraft Procurement (3010F), Line Item 5; F-16 C/D (MYP)*	255,302	120,723	0	0	229,317	239,280	0	0		TBD
(U)	Aircraft Procurement (3010F), Line Item 34, F-16 Mods	277,895	306,205	238,962	277,194	293,180	258,904	272,678	242,625		TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE			
							June 2001			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0207133F F-16 Squadrons</b>				<b>2671</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Aircraft Procurement (3010F), Line Item 73, Post Production Support	45,288	31,176	18,522	14,422	12,496	12,973	13,571	12,696		TBD
* 3010F, Line Item 5 Program Funding for FY00, FY04, FY05, is for force structure aircraft, 10 A/C in FY 00, 8 A/C in FY04 and 8 A/C in FY05. The procurement of 4 Blk 50 aircraft in FY01 is for attrition reserve aircraft.										
<b>(U) E. Acquisition Strategy</b>										
The procurement of 26 (30 required) additional Blk 50/52 aircraft, 10 A/C in FY 00, 8 A/C in FY04 and 8 A/C in FY05, for the active force will enable the AF to replace the Blk 10/15 F-16 A/B aircraft of two Air National Guard (ANG) Air Defense Fighter (ADF) squadrons with newer, more capable Blk 30 F-16 C/D aircraft from the active fleet. The procurement of 4 Blk 50 aircraft in FY01 is for attrition reserve aircraft. RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. The approach to contracting varies by individual project. Lockheed Martin Aeronautics Company (LM Aero) is the prime contractor on all systems except the simulator/trainer (Hughes Co.), the 110 Engines (General Electric), and the 229 Engines (Pratt & Whitney). Contract types are CPIF, CPFF, FFP.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	
				1	2	3	4	1	2	3
(U) Contract Milestone										
(U) Complete Block 50 Link 16/JHMCS							*			
(U) Complete Blk 30 GPS Integration Activities							*			
(U) Initiate Block 50 HTS/TGP Capability								*		
(U) Initiate Falcon STAR								*		
(U) Complete Block 40 MMC/Color Display										X
(U) Complete Block 40 Link 16/JHMCS										X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207133F F-16 Squadrons			PROJECT 2671		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Link 16 Block 50					9,417		0		0
(U)	Link 16 Block 40					4,229		6,170		3,800
(U)	MMC Block 40					6,683		6,218		2,000
(U)	Color Display Block 40					469		1,862		1,200
(U)	JHMCS Block 50					3,973		0		0
(U)	JHMCS Block 40					4,104		5,000		3,600
(U)	Training Devices					2,450		9,654		0
(U)	Block 30 GPS Integration					603		0		0
(U)	OFP Updates (Includes AAI)					49,258		53,795		61,632
(U)	Flight Tests DT&E					25,437		31,687		29,848
(U)	Block 50 HTS/TGP Capability (Software development, design, test assets)					0		3,023		2,717
(U)	Falcon STAR (Structural analysis and design)					0		1,395		6,000
(U)	OBOGS Retrofit					0		3,963		0
(U)	Total					106,623		122,767		110,797
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
CCIP (LM Aero)	T&M	Feb 97	5,384	5,384	5,384	0	0	0	0	5,384
Link 16 Blk 50 (LM Aero)	SS/CPIF	Apr 98	30,347	30,347	20,256	9,417	0	0	0	29,673
Link 16 Blk 40 (LM Aero)	SS/CPIF	Apr 98	20,281	20,281	7,252	4,229	6,170	3,800	0	21,451
MMC Blk 50 (LM Aero)	SS/CPIF	Jan 92	172,222	172,222	172,222	0	0	0	0	172,222
MMC Blk 40 (LM Aero)	SS/CPIF	Apr 98	26,483	26,483	12,800	6,683	6,218	2,000	0	27,701
CMFDS Blk 50 (LM Aero)	SS/CPIF	Apr 98	650	650	650	0	0	0	0	650

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207133F F-16 Squadrons					PROJECT 2671	
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
CMFDS Blk 40 (LM Aero)	SS/CPIF	Apr 98	8,674	8,674	5,505	469	1,862	1,200	0	9,036
JHMCS Blk 50 (LM Aero)	SS/CPIF	Apr 98	9,231	9,231	4,950	3,973	0	0	0	8,923
JHMCS Blk 40 (LM Aero)	SS/CPIF	Apr 98	14,209	14,209	2,205	4,104	5,000	3,600	0	14,909
JHMCS Study (LM Aero)	SS/CPFF	Apr 98	4,458	4,458	4,458	0	0	0	0	4,458
AIM/9X (LM Aero)	CPAF	Apr 98	115	115	115	0	0	0	0	115
AAI Blk 50 (LM Aero)	SS/CPIF	Aug 99	5,336	5,336	1,020	4,316	0	0	0	5,336
Trainers (Hughes)	FFP	Apr 97	44,979	44,979	18,591	2,450	9,654	0	0	30,695
Smart Wpns (LM Aero)	CPIF	Dec 95	9,915	9,915	9,915	0	0	0	0	9,915
GPS Integration (Various)	Various	Jul 97	19,248	19,248	18,645	603	0	0	0	19,248
OFP Updates (LM Aero)	CPIF/T&M	Dec 95			153,746	44,942	53,795	61,632	Continuing	TBD
IDM Blk 42 (LM Aero)	FP	Nov 98	630	630	630	0	0	0	0	630
LANTIRN BDA			100	100	100	0	0	0	0	100
Block 50 HTS/TGP			5,967	5,967	0	0	3,023	2,717	0	5,740
Falcon STAR	FFP	Mar 01	17,500	17,500	0	0	1,395	6,000	5,000	12,395
OBOGS Retrofit	TBD	TBD	TBD	TBD	0	0	3,963	0	0	3,963
ALE-50			1,400	1,400	1,400	0	0	0	0	1,400
<u>Support and Management Organizations</u>										
Radar Eval					280	0	0	0	0	280
Halon Eval					40	0	0	0	0	40
<u>Test and Evaluation Organizations</u>										
600 Gallon Tank					2,296	0	0	0	0	2,296
Flight Tests					150,586	25,437	31,687	29,848	Continuing	TBD
F-16 Y2K Demo			850	850	850	0	0	0	0	850

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0207133F F-16 Squadrons</b>		PROJECT <b>2671</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Rescission						
Subtotal Product Development	439,844	81,186	91,080	80,949	TBD	TBD
Subtotal Support and Management	320	0	0	0	0	320
Subtotal Test and Evaluation	153,732	25,437	31,687	29,848	TBD	TBD
Total Project	593,896	106,623	122,767	110,797	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207134F F-15E SQUADRONS					PROJECT 0131	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0131	Initial Operational Test and Evaluation	120,868	68,228	101,439	69,036	95,085	88,617	94,198	100,733	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: The FY03 - FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**  
 The F-15E is the most versatile fighter in the world today. Configured with conformal fuel tanks (CFTs), the F-15E can deploy worldwide with minimal tanker support and arrive combat-ready. The F-15E retains air superiority capability and adds systems, such as Low Altitude Navigation Targeting Infrared for Night (LANTIRN), to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. The F-15E's avionics, armament, airframe, and engines must be improved to maintain its superiority against the threat into the next century. The threat includes a new generation of aircraft possessing all-weather detection and kill capabilities. Avionics updates (exploiting proven technological advances) will be incorporated into the F-15E providing expanded capability and supporting an updated and fully integrated electronic warfare suite. This will increase the offensive and defensive capability and survivability of the F-15E. The F-15E PE also funds RDT&E activities for PE 0207130F, F-15A-D.

(U) **FY 2000 (\$ in Thousands)**

(U) \$34,375	Continue Operational Flight Program (OFP) development efforts.
(U) \$24,865	Continue flight test of the OFP and flight testing of improvements initiated in prior years.
(U) \$17,907	Continue development of Advanced Display Core Processor (ADCP) (formerly OFP effort).
(U) \$15,961	Continue integration of the Smart Weapons (formerly Programmable Armament Control Set (PACS) upgrade).
(U) \$7,091	Continue developments attributed to Diminishing Manufacturing Sources (DMS) (Obsolete Parts).
(U) \$4,469	Continue development of the Combat Identification (ID) System.
(U) \$1,968	Continue integration of the Joint Helmet Mounted Cueing System (JHMCS).
(U) \$596	Complete TEWS Intermediate Support System (TISS) Computer Upgrade.
(U) \$12,582	Initiate development of Electronic Counter-countermeasures (ECCM); Congressional add.
(U) \$1,054	Complete development of the ALQ-135 Band 1.5.
(U) \$120,868	Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207134F F-15E SQUADRONS</b>	PROJECT <b>0131</b>																																
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">(U) \$14,545</td> <td>Continue OFP development efforts.</td> </tr> <tr> <td>(U) \$17,772</td> <td>Continue flight test of the OFP and flight testing of improvements initiated in prior years.</td> </tr> <tr> <td>(U) \$17,347</td> <td>Continue integration of the Smart Weapons.</td> </tr> <tr> <td>(U) \$6,000</td> <td>Continue developments attributed to DMS (Obsolete Parts).</td> </tr> <tr> <td>(U) \$7,530</td> <td>Initiate and complete BOL integration into F-15 A-E (per FY 2001 Congressional Add).</td> </tr> <tr> <td>(U) \$1,780</td> <td>Continue development of the Combat ID System.</td> </tr> <tr> <td>(U) \$3,254</td> <td>Continue integration of the JHMCS.</td> </tr> <tr> <td>(U) \$68,228</td> <td>Total</td> </tr> </table> <p>Note: The following net transactions are not reflected in the FY01 program total: BTR = \$+3,162K, ATR = \$+21,618K, and SBIR = \$-1,915K. These transactions are not reflected in other sections of the RDOCS where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">(U) \$33,293</td> <td>Continue OFP development efforts.</td> </tr> <tr> <td>(U) \$20,524</td> <td>Continue flight testing of improvements initiated in prior years.</td> </tr> <tr> <td>(U) \$7,360</td> <td>Continue developments attributed to DMS (Obsolete Parts).</td> </tr> <tr> <td>(U) \$26,308</td> <td>Continue development of Advanced Display Core Processor (ADCP) (formerly OFP effort).</td> </tr> <tr> <td>(U) \$12,260</td> <td>Continue integration of the Smart Weapons.</td> </tr> <tr> <td>(U) \$500</td> <td>Complete integration of the JHMCS.</td> </tr> <tr> <td>(U) \$1,194</td> <td>Complete development of the ECCM.</td> </tr> <tr> <td>(U) \$101,439</td> <td>Total</td> </tr> </table> <p>.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>The F-15E, which received contract award approval in FY84, is an operational aircraft and therefore the development activities in the Program Element are included in Budget Activity 7, Operational Systems Development.</p>			(U) \$14,545	Continue OFP development efforts.	(U) \$17,772	Continue flight test of the OFP and flight testing of improvements initiated in prior years.	(U) \$17,347	Continue integration of the Smart Weapons.	(U) \$6,000	Continue developments attributed to DMS (Obsolete Parts).	(U) \$7,530	Initiate and complete BOL integration into F-15 A-E (per FY 2001 Congressional Add).	(U) \$1,780	Continue development of the Combat ID System.	(U) \$3,254	Continue integration of the JHMCS.	(U) \$68,228	Total	(U) \$33,293	Continue OFP development efforts.	(U) \$20,524	Continue flight testing of improvements initiated in prior years.	(U) \$7,360	Continue developments attributed to DMS (Obsolete Parts).	(U) \$26,308	Continue development of Advanced Display Core Processor (ADCP) (formerly OFP effort).	(U) \$12,260	Continue integration of the Smart Weapons.	(U) \$500	Complete integration of the JHMCS.	(U) \$1,194	Complete development of the ECCM.	(U) \$101,439	Total
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Project 0131	Page 2 of 7 Pages	Exhibit R-2 (PE 0207134F)																																

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
				June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>	<b>0207134F F-15E SQUADRONS</b>			<b>0131</b>
<b>(U) C. Program Change Summary (\$ in Thousands)</b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	126,172	61,260	100,865	TBD
(U) Appropriated Value	127,670	68,860		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-805	-482		
b. Small Business Innovative Research	-3,645			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-1,853			
e. Rescissions	-499	-150		
(U) Adjustments to Budget Years Since FY 2001 PBR			574	
(U) Current Budget Submit/FY 2002 PBR	120,868	68,228	101,439	TBD
<b>(U) Significant Program Changes:</b>				
Funding (FY00):				
<p>OFP development \$34,375 - Realigned funds from OFP budget to the F-15 Flight Test budget to fund OFP flight tests. In addition, \$1,194 realigned from ECCM to OFP to partially fund ECCM software productionization.</p> <p>Flight Test \$24,865 - Realigned funds from OFP budget, Air Data Processor (ADP), and various other projects to Flight Test budget to fund testing.</p> <p>Electronic Counter-countermeasures (ECCM) \$13,776 - Congressional add; FY00 funding for three (3) year Study Phase and EMD effort.</p>				
Funding (FY01):				
<p>OFP development \$14,545 - Realigned funds from OFP budget to the F-15 Flight Test budget to fund OFP flight tests.</p> <p>Flight Test \$17,772 - Realigned funds from OFP budget to fund OFP flight tests.</p> <p>BOL Integration \$7,530 - FY01 Congressional add to fund F-15 R &amp; D tasks.</p> <p>ADCP \$21,618 - FY01 Congressionally approved reprogramming from 3010, BP10 to 3600. This action is pending in ABIDES.</p>				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207134F F-15E SQUADRONS</b>					PROJECT <b>0131</b>	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Aircraft Procurement (3010F), Line Item 5, F-15E (PE27134F) [BP 10]	294,751	396,175								690,926
(U) Aircraft Procurement (3010F), Line Item 27, F-15A-E (PEs 27130F and 27134F) [BP 11]	304,227	319,252	211,649	249,197	244,398	137,805	97,559	54,831	Continuing	TBD
(U) Aircraft Procurement (3010F), Line Item 27, F-15 (PE27442F) [IDECM]							22,873	23,358	Continuing	TBD
(U) Aircraft Procurement (3010F) F-15E (PE84731F) General Skills Training [BP11]				1,282						1,282
(U) Aircraft Procurement (3010F) F-15E (PE89731F) Training Support to Units [BP11]			511				2,219	1,354	Continuing	TBD
(U) Aircraft Procurement (3010F), Line Item 66, F-15A-E [BP 13]	7,119	7,200	7,409	7,630	7,854	8,034	8,388	8,559	Continuing	TBD
<b>(U) E. Acquisition Strategy</b>										
Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0207134F F-15E SQUADRONS</b>					<b>0131</b>				
<b>(U) F. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Smart Weapons DT&E start								X						
(U) Smart Weapons DT&E complete										X				
(U) OFP Suite 4 complete									X					
(U) OFP Suite 5 Phase I complete										X				
(U) OFP Suite 5 Phase II start											X			
(U) ADCP COSSI tasks complete									X					
(U) ADCP EMD start		*												
(U) APG-63(V)1 IOT&E complete		*												
(U) APG-63(V)1 FOT&E flight test complete									X					
(U) Link-16 flight test complete					*									
(U) ALQ-135, Band 1.5 OT/ DT complete														
(U) TISS Computer Upgrade EMD complete								*						
(U) Air Data Processor EMD complete								X						
(U) JHMCS OT&E complete									X					
(U) ECCM EMD start														
(U) ECCM EMD complete												X		
(U) Initiate BOL Dispenser integration												*		
* - Completed Activity														
X - Planned Start/Completion Date														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207134F F-15E SQUADRONS			PROJECT 0131		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		
(U)	OFF					34,375	14,545	33,293		
(U)	Flight Test					24,865	17,772	20,524		
(U)	Advance Display Core Processor (ADCP)					17,907	0	26,308		
(U)	Smart Weapons					15,961	17,347	12,260		
(U)	DMS (Parts Obsolescence)					7,091	6,000	7,360		
(U)	Combat ID					4,469	1,780	0		
(U)	Joint Helmet Mounted Cueing System					1,968	3,254	500		
(U)	TISS Computer Upgrade					596	0	0		
(U)	ECCM					12,582	0	1,194		
(U)	BOL Dispenser					0	7,530	0		
(U)	ALQ-135 Band 1.5					1,054	0	0		
(U)	Total					120,868	68,228	101,439		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
P&W (-229 Eng)	CPAF	Sep 94	6,520	6,520	6,520	0	0	0	0	6,520
GE (-129 Eng)	CPAF	Feb 95	7,130	7,130	7,130	0	0	0	0	7,130
Boeing (GFE/GFP)	FFP	Dec 93	1,975	1,975	1,975	0	0	0	0	1,975
OFF Suite 4/5/6 Development	CPAF	May 98	339,808	339,808	148,297	34,375	14,545	33,293	Continuing	TBD
Boeing APG63 (Feasibility Study)	CPFF	Feb 94	778	778	778	0	0	0	0	778
(Risk Reduction)	CPFF	Feb 94	9,892	9,892	9,892	0	0	0	0	9,892
(EMD)	CPAF	Sep 94	223,033	223,033	223,033	0	0	0	0	223,033

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>				<b>0207134F F-15E SQUADRONS</b>					<b>0131</b>	
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
Boeing (JHMCS A-D)	CPAF		11,358	11,358	9,483	1,968	3,254	500	0	15,205
PACS Upgrade	CPAF	May 95	28,343	28,343	28,343	0	0	0	0	28,343
Wright Lab (DMS)	MIPR/PRs	Sep 94	81,348	81,348	29,006	7,091	6,000	7,360	Continuing	TBD
Smart Weapons Integration	CPAF	Feb 99	51,607	51,607	3,507	15,961	17,347	12,260	Continuing	TBD
ADP(E)	CPAF	Jan 99	4,356	4,356	2,846	0	0	0	0	2,846
ADCP(E)	CPAF	Jan 00	108,522	108,522	0	17,907	0	26,308	Continuing	TBD
NGA (ALQ-135 Band 1.5)	FFP	May 97	39,384	39,384	35,440	1,054	0	0	0	36,494
Link-16 Data Link	CPAF	Apr 98	19,400	19,400	19,400	0	0	0	0	19,400
Combat ID	CPAF	May 98	14,109	14,109	1,790	4,469	1,780	0	Continuing	TBD
TISS Replacement	CPFF	Aug 97	4,896	4,896	3,560	596	0	0	0	4,156
Boeing/Raytheon ECCM	CPAF	Jan 00	15,000	15,000	0	12,582	0	1,194	0	13,776
BOL Dispenser	CPFF	Jun 01	7,118	7,118	0	0	7,530	0	0	7,530
<u>Support and Management Organizations</u>										
(Msn Spt) Misc.					16,708	0	0		0	16,708
<u>Test and Evaluation Organizations</u>										
Boeing (Flt Test)	FFP	Oct 96	123,434	123,434	51,815	12,238	9,465	12,524	Continuing	TBD
Edwards	PO	Oct 96	91,048	91,048	41,562	11,183	8,015	7,000	Continuing	TBD
Eglin (Flt Test)	PO	Oct 96	21,667	21,667	12,210	1,444	292	1,000	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					531,000	96,003	50,456	80,915	TBD	TBD
Subtotal Support and Management					16,708	0	0		0	16,708
Subtotal Test and Evaluation					105,587	24,865	17,772	20,524	TBD	TBD
Total Project					653,295	120,868	68,228	101,439	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207136F Manned Destructive Suppression					PROJECT 4595	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4595	F-16 HARM Targeting System (HTS)	3,188	14,535	22,239	23,947	14,669	9,680	7,876	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: FY03-FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**  
 The overall Manned Destructive Suppression (MDS) program funds the development, procurement, and sustainment of the Air Force's lethal Suppression of Enemy Air Defenses (SEAD) capability. The program provides F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 HARM Targeting System (HTS). F-16 HTS is the only currently programmed reactive SEAD capability and enables targeting the HARM missile in the most lethal 'range known' mode. This RDT&E effort continues HTS preplanned product improvement (P3I). In FY00 the HTS P3I program began development of the HTS Revision 7 (R7) upgrade. In FY01 work has started to develop HTS engineering changes needed to permit the F-16 to carry both an HTS pod and an advanced targeting pod (TGP). These HTS improvements represent the Air Force's near-term solution (until replaced by JSF or some alternate undefined system) for Destruction of Enemy Air Defenses (DEAD) mission. R7/alternate/dual carriage will allow targeting of the Joint Standoff Weapon (JSOW) and potentially targeting of other precision guided munitions (PGMs) needed to destroy fixed and mobile enemy air defense system elements. R7 derived coordinates of threat emitters will be available to all Joint Forces via Link-16.

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$3,060            Initiate HTS R7 Geolocation Upgrade Program Definition study & Risk Reduction (PDRR)  
 (U) \$128             Continue Mission Support  
 (U) \$3,188            Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$1,534            Complete HTS R7 Geolocation Upgrade Program Definition study & Risk Reduction (PDRR)  
 (U) \$12,010           Continue R7 Geolocation Upgrade Development (Includes HTS/TGP Dual Carriage)  
 (U) \$30                Initiate R7 Upgrade Test and Evaluation Support  
 (U) \$961               Continue Mission Support  
 (U) \$14,535            Total

The following net transactions are not reflected in the FY01 program total: BTR= -380K and SBIR= -469K. These transactions are not reflected in other sections of the RDocs where an FY01 total is shown.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207136F Manned Destructive Suppression</b>	<b>PROJECT</b> <b>4595</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$20,628            Continue R7 Geolocation Upgrade Development</p> <p>(U) \$100                Continue R7 Upgrade Test and Evaluation Support</p> <p>(U) \$1,511            Continue Mission Support</p> <p>(U) \$22,239            Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This PE is in Budget Activity 7 - Operational System Development because it supports preplanned product improvements and upgrade development of F-16 HTS, a fielded system.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">3,363</td> <td style="text-align: center;">14,670</td> <td style="text-align: center;">22,113</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">3,402</td> <td style="text-align: center;">14,670</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: center;">-21</td> <td style="text-align: center;">-103</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">-180</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-13</td> <td style="text-align: center;">-32</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: center;">126</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">3,188</td> <td style="text-align: center;">14,535</td> <td style="text-align: center;">22,239</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b> No significant program changes from the FY 2001 PBR to the FY 2002 PBR.</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	3,363	14,670	22,113	TBD	(U) Appropriated Value	3,402	14,670			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-21	-103			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram	-180				d. Below Threshold Reprogram					e. Rescissions	-13	-32			(U) Adjustments to Budget Years Since FY 2001 PBR			126		(U) Current Budget Submit/FY 2002 PBR	3,188	14,535	22,239	TBD
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Project 4595	Page 2 of 5 Pages	Exhibit R-2 (PE 0207136F)																																																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207136F Manned Destructive Suppression</b>			PROJECT <b>4595</b>				
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
(U) HTS Aircraft Procurement (BP11)AF PE 0207136F					10,537	9,971	8,488	971	Continuing		
(U) HTS Aircraft Procurement (BP19)AF PE 0207136F		13,528				20,289			Continuing		
<b>(U) E. Acquisition Strategy</b>											
The HTS program objective is to develop precision geolocation capability that significantly improves speed and accuracy of emitter targeting solutions on F-16 Block 50/52 aircraft. Precision geolocation capability will permit targeting of PGMs such as JSOW, in addition to the HARM missile, against mobile and fixed sites. The objective will be accomplished through study, risk reduction, and a System Development and Demonstration (SDD) effort leading to significant upgrades and increases in the F-16's and Joint Forces' real-time Destruction of Enemy Air Defenses (DEAD) capabilities.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U) R6 Upgrade Development Complete						*					
(U) R7 PDRR Contract Award					*						
(U) R6 Initial Fielding**						*					
(U) R6 Fielding Complete									X		
(U) R6 Lot 2 Pod Deliveries Complete (16 Pods)										X	
(U) R6 Lot 3 Pod Deliveries Complete (13 Pods)											X
(U) R6 Lot 4 Contract Award								*			
(U) R7 SDD Contract Award								*			
(U) R6 Lot 4 Pod Deliveries ( 31 Pods)											X
* = Completed Event    X = Planned Event											
** Start of R6 Fielding slipped from FY99 into FY00. This slip also cause delay in R6 Pod Production deliveries for new buy Lots 2 and 3.											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207136F Manned Destructive Suppression			PROJECT 4595			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	HTS R7 Program Definition study and Risk Reduction (PDRR)					3,060		1,534			
(U)	R7 Geolocation Dev (Includes HTS/TGP Dual Carriage)							12,010		20,628	
(U)	Test & Evaluation Support							30		100	
(U)	Mission Support					128		961		1,511	
(U)	Total					3,188		14,535		22,239	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon Systems Co.	SS/Various	Various	63,404	63,404	6,808	3,060	13,544	20,628	Continuing	TBD
	Raytheon Systems Co.	SS/CPAF	Feb 96	31,331	31,331	31,331					31,331
	AFMSS	SS/CPIF	Various	1,885	1,885	1,885					1,885
	Lockheed/Ft Worth	SS/FFP	Various	2,400	2,400	2,400					2,400
<u>Support and Management Organizations</u>											
	Prog. Mgt. and Mission Support	Various	Various			3,983	128	961	1,511	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	Eglin	PO	Various			2,175					2,175
	Edwards	PO	Various			4,394		30	100	Continuing	TBD
	Light Defender		Various			922					922

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207136F Manned Destructive Suppression				PROJECT 4595	
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
Not Applicable									
<u>Support and Management Property</u>									
Not Applicable									
<u>Test and Evaluation Property</u>									
Not Applicable									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				42,424	3,060	13,544	20,628	TBD	TBD
Subtotal Support and Management				3,983	128	961	1,511	TBD	TBD
Subtotal Test and Evaluation				7,491		30	100	TBD	TBD
Total Project				53,898	3,188	14,535	22,239	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207138F F-22 SQUADRONS</b>					PROJECT <b>4785</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4785	F-22	0	0	16,092	51,339	137,096	100,828	122,371	158,091	0	585,817
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

The FY03 - FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**  
 The F-22 is designed to penetrate enemy airspace and achieve a first look, first kill capability against multiple targets. The F-22 is characterized by a low observable, highly maneuverable airframe, advanced integrated avionics, and aerodynamic performance that allows supersonic cruise without the use of afterburner. The F-22 is currently in the Engineering and Manufacturing Development (EMD) phase of acquisition.

NOTE: This exhibit is for post EMD requirements/developments - which are considered outside of the RDT&E cost cap.

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$16,092 Initiate Candidate 38+  
 (U) \$16,092 Total

(U) **B. Budget Activity Justification**  
 This program is in Budget Activity 7, Engineering and Manufacturing Development, because the F-22 Program is developing the next-generation air superiority fighter for the USAF to counter emerging worldwide threats.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0207138F F-22 SQUADRONS</b>			<b>4785</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Previous President's Budget (FY 2001 PBR)								0		
(U)	Appropriated Value								0		
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions								0		
	b. Small Business Innovative Research								0		
	c. Omnibus or Other Above Threshold Reprogram								0		
	d. Below Threshold Reprogram								0		
	e. Rescissions								0		
(U)	Adjustments to Budget Years Since FY 2001 PBR							16,092			
(U)	Current Budget Submit/FY 2002 PBR							16,092	585,817		
<b>(U) Significant Program Changes:</b>											
The FY02 Candidate 38+ project is initiated as a CSAF directed project, thru FY04. Auto Ground Collision Avoidance System (AGCAS), an OSD directed project, is scheduled to begin FY03 through FY05. Funding in FY04 and out also includes manpower authorizations, peculiar and common support equipment, necessary facilities and the associated cost specifically identified and measurable to the following: Post EMD development of the F-22 fighter.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	1,517,936	998,503	716,594	320,525						22,945,320
(U)	{PE 64239F}										
(U)	PRTV II (6)	721,129	400,332	148,870							1,270,331
(U)	Military Construction (PE 0604239F)	18,600									39,700
(U)	Military Construction (PE 0207219F)*		25,300	54,050	18,000	16,800	13,200	23,800	23,000	51,600	225,750
(U)	Aircraft Procurement (PE 0207219F) Advanced Tactical Fighter, P-1 Line	571,514	2,530,370	3,037,312	4,238,783	4,058,014	3,651,719	3,502,100	3,396,417	11,917,292	37,492,734
Project 4785		Page 2 of 5 Pages					Exhibit R-2 (PE 0207138F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207138F F-22 SQUADRONS</b>				PROJECT <b>4785</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
Item #003**											
(U)	Munitions Procurement (PE 0207219F)	1,425	2,702	4,322	6,435	9,556	9,526	11,051	10,930	36,642	93,038
* NOTE: FY04 and outyears not listed in ABIDES. Estimate reflected in DAES/SAR.											
**NOTE: Includes BP10, 11, 16, 19 and Advance Buy.											
<b>(U) E. Acquisition Strategy</b>											
The FY02 acquisition strategy is currently being determined.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U)	Contract Award of Candidate 38+									X	
	X - Planned										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207138F F-22 SQUADRONS			PROJECT 4785			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Candidate 38+									16,092	
(U)	Total									16,092	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Candidate 38+	TBD	2QFY02						16,092	53,687	69,779
	AGCAS									69,552	69,552
	Post-EMD Efforts									446,486	446,486
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	Not Applicable										
	<u>Support and Management Property</u>										
	Not Applicable										
	<u>Test and Evaluation Property</u>										
	Not Applicable										

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>				DATE <b>June 2001</b>		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0207138F F-22 SQUADRONS</b>			<b>4785</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development					16,092	569,725
Subtotal Support and Management						585,817
Subtotal Test and Evaluation						
Total Project					16,092	569,725
						585,817

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207141F F-117A Squadron</b>					PROJECT <b>3956</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3956	F-117A Stealth Fighter	11,107	3,876	2,305	3,554	10,140	7,207	1,099	1,122	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**

The F-117 is the world's first operational low-observable (LO) combat aircraft. Its combination of stealth and precision weapons delivery capability allows the United States Air Force to hold even the most highly defended targets at risk. The program completed production in Jul 1990 with the delivery of the final F-117 (number 59). The single operational F-117 unit is the 49th Fighter Wing stationed at Holloman AFB, NM. The program is now primarily engaged in sustainment activities for the F-117 which is projected to remain in service through at least 2018.

This project provides research and development funding for multiple modifications to the F-117 weapons system to enhance combat capability while maintaining a safe, reliable and supportable aircraft. The MIL-STD-1760 Stores Management Processor (SMP) modification, which completed development in May 01, is an essential prerequisite for integration of advanced weapons on the F-117. Development efforts continue for Smart Weapons Integration. The FY01 PB submission reflected limited Enhanced GBU-27 (EGBU-27) and Joint Direct Attack Munition (JDAM) capability, but not Wind Corrected Munition Dispenser (WCMD) capability. The contractor proposal was lower than projected, allowing the program to implement full EGBU-27 capability, full JDAM capability, and software integration for subsequent WCMD flight testing. Block Cycle 3 (BC3) began Pre-EMD activities in FY00. BC3 Mid Life Upgrade replaces obsolete avionics systems, establishes new vendors and improves reliability and maintainability to keep the F-117 operational through its service life.

(U) **FY 2000 (\$ in Thousands)**

(U) \$2,031 Complete development work on SMP

(U) \$2,412 Continue development work on Smart Weapons Integration (JDAM Risk Reduction)

(U) \$48 Limited EGBU-27 development per Combat Mission Need Statement (CMNS)

(U) \$6,616 Begin development work on Block Cycle 3 (Pre-EMD/PDRR)

(U) \$11,107 Total

The following net transactions are not reflected in the FY00 program total: BTR=-53K. These transactions are not reflected in other sections of the R-Docs where the FY00 total is shown.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																																																							
<b>07 - Operational System Development</b>		<b>June 2001</b>																																																							
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>																																																							
<b>07 - Operational System Development</b>	<b>0207141F F-117A Squadron</b>	<b>3956</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$3,876 Continue development work on Smart Weapons Integration (EMD for full EGBU-27 and JDAM)</p> <p>(U) \$3,876 Total</p> <p>The following net transactions are not reflected in the FY01 program total: BTR-1.633M (includes -5K for canx bills) and SBIR=-135K. These transactions are not reflected in other sections of the R-Docs where the FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$2,305 Continue development work on Smart Weapons Integration</p> <p>(U) \$2,305 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in budget activity 7, Operational System Development, because all aircraft have been delivered and the program is in its deployment phase.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2000</u></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">11,659</td> <td style="text-align: center;">3,912</td> <td style="text-align: center;">2,292</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">11,807</td> <td style="text-align: center;">3,912</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: center;">-10</td> <td style="text-align: center;">-27</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-337</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">-26</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: center;">-207</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-120</td> <td style="text-align: center;">-9</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: center;">13</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">11,107</td> <td style="text-align: center;">3,876</td> <td style="text-align: center;">2,305</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>Note: -\$162K for CANX Bills included in the FY00 Below Threshold Reprogram total</p> <p>(U) <u>Significant Program Changes:</u></p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	11,659	3,912	2,292	TBD	(U) Appropriated Value	11,807	3,912			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-10	-27			b. Small Business Innovative Research	-337				c. Omnibus or Other Above Threshold Reprogram	-26				d. Below Threshold Reprogram	-207				e. Rescissions	-120	-9			(U) Adjustments to Budget Years Since FY 2001 PBR			13		(U) Current Budget Submit/FY 2002 PBR	11,107	3,876	2,305	TBD
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Project 3956	Page 2 of 5 Pages	Exhibit R-2 (PE 0207141F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207141F F-117A Squadron				PROJECT 3956		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
(U) Aircraft Procurement (BA-5), Appn 3010/BP1100, AF F117A Squadrons, PE 27141F	36,154	31,712	27,620	21,409	8,326	766	826	843	Continuing	TBD	
(U) Other Procurement, Appn 3080/BP8300, AF F117A Squadrons, PE 27141F		2,242								2,242	
<b>(U) E. Acquisition Strategy</b>											
RDT&E funds are executed to develop improved capability, reliability, maintenance and safety modification efforts. Operational Flight Program (OFP) software is continuously updated as needed to support mod efforts to complement modification development efforts. The contracting approach varies by individual effort and involves Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF), and Cost Plus Award Fee (CPAF) contract types.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U) Stores Management Processor (SMP) (EMD Start Jul 96, Ends May 01)										*	
(U) Smart Weapons Integ--Full JDAM (PDRR Start Sep 98, Ends Aug 01)									X		
(U) Smart Weapons Integ- Full EGBU-27 & JDAM (EMD, May 01 to FY06)									*		
(U) Block Cycle 3 Pre-EMD (PDRR Phase 1 Start Jun 00, Finish Jul 02)						*					X
* = Completed Effort											
X = Planned Effort											
Project 3956				Page 3 of 5 Pages				Exhibit R-2 (PE 0207141F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207141F F-117A Squadron			PROJECT 3956			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Development work on SMP (MIL-STD-1760)					2,031					
(U)	Smart Weapons Integration					2,412		3,876		2,305	
(U)	Limited Enhanced GBU-27 CMNS Integration					48					
(U)	Block Cycle 3 Pre-EMD/PDRR					6,616					
(U)	Total					11,107		3,876		2,305	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	SMP (MIL-STD-1760 modification)										
	Lockheed Martin Skunk Works, Palmdale CA	CPAF	Jul 98	17,766	17,766	15,735	2,031	0	0	0	17,766
	Smart Wpn Integration	CPAF	Sep 98	TBD	TBD	350	2,412	3,876	2,305	Continuing	TBD
	Lockheed Martin Skunk Works, Palmdale CA										
	Limited Enhanced GBU-27	CPAF	Sep 99	3,788	3,788	3,740	48	0	0	0	3,788
	Lockheed Martin Skunk Works, Palmdale CA										
	Block Cycle 3 Pre-EMD	CPFF	Apr 00	6,616	6,616	0	6,616	0	0	0	6,616
	Lockheed Martin Skunk Works, Palmdale CA										
<u>Support and Management Organizations</u>											
<u>Test and Evaluation Organizations</u>											
Project 3956											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0207141F F-117A Squadron</b>			<b>3956</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			19,825	11,107	3,876	2,305
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						
Total Project			19,825	11,107	3,876	2,305
						TBD
						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207161F Tactical AIM Missiles					PROJECT 4132	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4132	AIM-9 Product Improvement	39,409	21,507	5,771	3,067	553	5,877	15,752	5,964	0	245,759
	Quantity of RDT&E Articles	5	6	11	0	0	0	0	0	0	22
<p>Note: The RDT&amp;E articles are deliverables under the Engineering and Manufacturing Development contract and are not separately priced. Quantities are delivered in the indicated Fiscal Years. Deliveries supported October 1999 restructured program.</p> <p>The FY03-FY07 budget numbers do not reflect DoD's strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The AIM-9X is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X (Sidewinder) short range air-to-air missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile. Air superiority in the short range air-to-air missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M. Anti-Tamper features are being incorporated to protect improvements inherent in AIM-9X design. AIM-9X is an Acquisition Category IC (ACAT IC) joint-service program with Navy lead.</p> <p>Status: The program successfully completed an Operational Assessment (OA) on 4 Aug 00 and received DAB approval on 8 Sept 00, without comment or issue, to enter into Low Rate Initial Production (LRIP) 1. Contract award took place in Nov 00. The AIM-9X flight test program and the OA have demonstrated capabilities beyond those of the currently fielded AIM-9M short range missile. USAF and USN warfighters have jointly emphasized the need to aggressively field the AIM-9X to counter the already fielded and superior threat air-to-air systems.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$22,371 Continue the manufacturing development contract to include Test Readiness Review (TRR), Production Readiness Review (PRR) leading to a Defense Acquisition Board LRIP decision in 4th Qtr FY00 with production option award in FY01, and delivery of five test articles. Continue flight testing (DT) and OT flight test support for dedicated Operational Evaluation (OPEVAL) (IOT&amp;E).                      (U) \$1,100 Continue providing aircraft interface data to the Engineering and Manufacturing Development (EMD) contractor in support of OT-IIA and DT-IIC and complete OT-IIA.                      (U) \$11,967 Continue providing government flight test support of ongoing activities defined in DT-IIB/C and Captive Carry Reliability Flight Program at</p>											
Project 4132			Page 1 of 7 Pages				Exhibit R-2 (PE 0207161F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0207161F Tactical AIM Missiles</b>	<b>4132</b>
<b>(U) A. Mission Description Continued</b>		
<b>(U) <u>FY 2000 (\$ in Thousands) Continued</u></b>		
	multiple test sites.	
(U) \$1,199	Field engineering support for government flight test activities.	
(U) \$1,980	Provide program office management support to include working capital funded personnel, supplies, and travel.	
(U) \$792	Provide for consulting services, technical engineering, and management support.	
(U) \$39,409	Total	
Note: The following net transactions are not reflected in the FY00 program total: BTR= -182K. These transactions are not reflected in other sections of the RDocs where a FY00 total is shown.		
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$14,128	Continue the manufacturing development contract to include completion of DT-IIB/C, start of DT-IID Launches and delivery of 6 test articles.	
(U) \$1,074	Continue providing aircraft interface support to the EMD contractor.	
(U) \$5,223	Continue providing government flight test support of activities defined as DT-IID and DT Assist (with operational testers) at multiple test sites.	
(U) \$206	Field engineering support for government flight test activities.	
(U) \$396	Provide program office management support to include working capital funded personnel, supplies, and travel.	
(U) \$480	Provide for consulting services, technical engineering, and management support.	
(U) \$21,507	Total	
Note: The following net transactions are not reflected in the FY01 program total: BTR= +150K. These transactions are not reflected in other sections of the RDocs where a FY01 total is shown.		
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$3,818	Continue the manufacturing development contract to include completion of the DT Assist, start of OT-IIB and delivery of eleven test articles.	
(U) \$200	Continue providing aircraft interface support to the EMD contractor.	
(U) \$818	Continue providing government flight test support of activities defined as DT Assist (with operational testers) at multiple test sites.	
(U) \$290	Field engineering support for government flight test activities.	
(U) \$330	Provide program office management support to include working capital funded personnel, supplies, and travel.	
(U) \$315	Provide for consulting services, technical engineering, and management support.	
(U) \$5,771	Total	
Project 4132	Page 2 of 7 Pages	Exhibit R-2 (PE 0207161F)

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207161F Tactical AIM Missiles</b>	PROJECT <b>4132</b>																																																							
<p>(U) <b><u>B. Budget Activity Justification</u></b>                  The program is currently in budget activity 7 for FY01 and prior years - Operational System Development, since the AIM-9X has been considered a modification to the already fielded AIM-9M and a long term evolution of the AIM-9 series of air-to-air missiles. The following Congressional language resulted from the FY01 Appropriations Conference - 'The conferees direct that future Air Force and Navy budget requests for AIM-9X be included in the new procurement sections of the Missile Procurement Air Force and Weapons Procurement Navy budget accounts rather than the current practice of budgeting AIM-9X as a modification.' As a result, FY01 procurement actions are addressed in a BP21 documentation (P3A) and the remainder of the program is detailed in BP20 documentation (P40, 5, 5A, 21).</p>																																																									
<p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="text-align: right; width: 15%;"><u>FY 2000</u></th> <th style="text-align: right; width: 15%;"><u>FY 2001</u></th> <th style="text-align: right; width: 15%;"><u>FY 2002</u></th> <th style="text-align: right; width: 10%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">40,513</td> <td style="text-align: right;">21,706</td> <td style="text-align: right;">3,510</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">41,007</td> <td style="text-align: right;">21,706</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-271</td> <td style="text-align: right;">-152</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-952</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">-215</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-160</td> <td style="text-align: right;">-47</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: right;">2,261</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">39,409</td> <td style="text-align: right;">21,507</td> <td style="text-align: right;">5,771</td> <td style="text-align: right;">245,759</td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	40,513	21,706	3,510		(U) Appropriated Value	41,007	21,706			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-271	-152			b. Small Business Innovative Research	-952				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-215				e. Rescissions	-160	-47			(U) Adjustments to Budget Years Since FY 2001 PBR			2,261		(U) Current Budget Submit/FY 2002 PBR	39,409	21,507	5,771	245,759
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<p>(U) <b><u>Significant Program Changes:</u></b>                  General:                  The program successfully completed an Operational Assessment (OA), as committed, on 4 Aug 00 and received DAB approval, without comment or issue, to enter into LRIP 1 on 8 Sept 00. The FY00 Congressional conferees direct that future Air Force and Navy budget requests for AIM-9X be included in the new procurement sections of the Missile Procurement Air Force and Weapons Procurement Navy budget accounts rather than the current practice of budgeting AIM-9X as a modification                  Funding:                  The program completed a \$2,235K ZBT of procurement funding to cover additional RDT&amp;E activities in FY02 resulting from the Oct 99 restructure.</p>																																																									
Project 4132	Page 3 of 7 Pages	Exhibit R-2 (PE 0207161F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207161F Tactical AIM Missiles			PROJECT 4132		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) DOD PE (0603715D)										25,000
(U) Other APPN										
(U) Tactical AIM Missile Modification (BP21)	0	25,275								25,275
(U) Tactical AIM Missile Procurement (BP20)			33,545	55,495	72,344	55,558	58,326	56,703	840,997	1,172,968
(U) SEEK EAGLE	0	2,892	5,385	1,763	0	0	0	0		TBD
Congressional language directed the program to report as a missile procurement, starting in FY02, and not as a missile modification.										
<b>(U) E. Acquisition Strategy</b>										
After a full and open competition, a Cost Plus Incentive Fee/Award Fee contract was awarded to Hughes Missile Systems Company (now Raytheon Systems Corp (RSC)) to complete missile system development and prepare for production. This EMD contract includes three Fixed Price Incentive Fee options for Low Rate Initial Production (LRIP) Lots 1, 2, and 3. These production options are planned to be exercised in FY01, FY02, and FY03. The EMD contract and production options provide strong incentives for the contractor to control costs, achieve reliable performance and deliver on schedule. The DAB approved, without comment or issue, the LRIP 1 decision on 8 Sept 00.										
The Navy Acquisition Executive will make the Full Rate Production (FRP) decision with advice from the Air Force Acquisition Executive subsequent to the successful completion of the associated exit criteria. FRP Lots 4 through 7 contracts will be Firm Fixed-Price (FFP) with incentives provided if the contractor meets or beats his Procurement Price Commitment Curve (PPCC), a quantity price curve provided by RSC with the EMD proposal. Rewards or penalties are provided depending on RSC's performance relative to the PPCC. A Service review of RSC's Lot 4 through 7 proposals relative to the PPCC will be held prior to award of those contracts.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	
				1	2	3	4	1	2	3
(U) OT-IIA - Complete							*			
(U) PRR for LRIP						*				
(U) DT-IIID (Launches) Starts							*			
(U) LRIP DAB							*			
Project 4132	Page 4 of 7 Pages				Exhibit R-2 (PE 0207161F)					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207161F Tactical AIM Missiles</b>					PROJECT <b>4132</b>		
<b>(U) F. Schedule Profile Continued</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) LRIP 1 Award					*							
(U) DT Assist					*							
(U) LRIP 2 Decision								*				
(U) LRIP 2 Award										X		
(U) OT-IIB Starts										X		
* Completed Events X Planned Events												
Schedule Notes:												
Air Force RAA on the F-15C is 4QFY03 and FRP award scheduled for 1QFY04												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207161F Tactical AIM Missiles			PROJECT 4132		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>			
(U)	Project Cost Categories									
(U)	a. Primary Hardware Development				22,371	14,128				3,818
(U)	b. Contractor Engineering Support (F-15 AIM-9X Aircraft Integration)				1,100	1,074				200
(U)	c. Development and Test Evaluation				11,967	5,223				818
(U)	d. Government Engineering Support				1,199	206				290
(U)	e. Program Management (PMA)				1,980	396				330
(U)	f. Contractor Services Support				792	480				315
(U)	Total				39,409	21,507				5,771
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Hughes	C/CPIF	Dec 94	5,694	5,694	5,694	0	0	0	0	5,694
Raytheon	C/CPIF	Dec 94	5,694	5,694	5,695	0	0	0	0	5,695
Raytheon	C/CPIF	Dec 96	136,930	136,930	83,855	22,371	14,128	3,818	17,428	141,600
Boeing	C/CPIF	Jan 96	20,397	20,397	16,107	1,100	1,074	200	1,737	20,218
Engineering Services	Various	Various	N/A	N/A	14,162	1,199	206	290	4,611	20,468
Program Management*	PO	Various	N/A	N/A	8,300	1,980	396	330	1,709	12,715
Note*: Based on a Memorandum of Agreement, RDT&E program costs includes Navy PMA working capital funded personnel funded at 50%/50% ratio per Service.										
<u>Support and Management Organizations</u>										
Various Contracts	FFP	Various	N/A	N/A	1,811	792	480	315	59	3,457
<u>Test and Evaluation Organizations</u>										
Field Activities	PO	Oct 96	N/A	N/A	12,235	11,967	5,223	818	5,669	35,912

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE		
BUDGET ACTIVITY							June 2001		
07 - Operational System Development				PE NUMBER AND TITLE			PROJECT		
				0207161F Tactical AIM Missiles			4132		
<b>(U) Government Furnished Property:</b>									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
	<u>or Funding</u>	<u>Date</u>	<u>Date</u>						
	<u>Vehicle</u>								
<u>Product Development Property</u>									
N/A	N/A	N/A	N/A	0	0	0	0	0	0
<u>Support and Management Property</u>									
N/A	N/A	N/A	N/A	0	0	0	0	0	0
<u>Test and Evaluation Property</u>									
N/A	N/A	N/A	N/A	0	0	0	0	0	0
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				133,813	26,650	15,804	4,638	25,485	206,390
Subtotal Support and Management				1,811	792	480	315	59	3,457
Subtotal Test and Evaluation				12,235	11,967	5,223	818	5,669	35,912
Total Project				147,859	39,409	21,507	5,771	31,213	245,759

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
<b>07 - Operational System Development</b>		<b>0207163F Advanced Medium Range Air-to-Air Missile</b>								<b>3777</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
3777 AMRAAM	49,597	53,214	57,702	37,190	33,367	34,301	36,652	37,804	0	693,833	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

Note: The FY03 - FY07 budget numbers do not reflect DOD's strategic review results

**(U) A. Mission Description**

The Air Force and Navy developed the baseline Advanced Medium Range Air-to-Air Missile (AMRAAM) as a high performance, all weather missile to counter existing air vehicle threats operating at high or low altitude and having advanced Electronic Protection (EP) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program provides for a continuing, Joint Air Force/Navy research and development program which enables AMRAAM to: (1) be compatible with advanced fighters, (2) enhance AMRAAM capability and operational flexibility against mid-1990's and beyond threats, (3) incorporate high payoff technology developments, and (4) investigate variants and/or alternate missions which may use many baseline missile attributes. Currently, improvements under the P3I program include enhanced EP capabilities; improved weapon effectiveness through improved warhead, fuzing, and guidance; and increased kinematics. AMRAAM is a joint Air Force/Navy, Acquisition Category (ACAT) IC program with Air Force as lead service.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$47,828 Continue P3I Phase 3 improved seeker and advanced EP updates
- (U) \$1,695 Continue mission support
- (U) \$74 Continue test and evaluation
- (U) \$49,597 Total

**(U) FY 2001 (\$ in Thousands)**

- (U) \$50,831 Continue P3I Phase 3 improved seeker and advanced EP updates
- (U) \$1,625 Continue mission support
- (U) \$758 Continue test and evaluation
- (U) \$53,214 Total

Funding (FY01): The following net transactions are not reflected in the FY01 program total. BTR= -\$331K and SBIR= -\$2,059K. These transactions are not reflected in the other sections of the R-Docs where an FY01 total is shown

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0207163F Advanced Medium Range Air-to-Air Missile</b>		<b>3777</b>	
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2002 (\$ in Thousands)</b>					
(U)	\$55,953	Conduct P3I Phase 3 P3I Phase 3 ACE Flights P3I Phase 3 Seeker Test Readiness Review			
(U)	\$1,661	Continue mission support			
(U)	\$88	Continue test and evaluation			
(U)	\$57,702	Total			
<b>(U) B. Budget Activity Justification</b>					
This program is in budget activity 7 - Operational System Development, providing upgrades to the AIM-120C missile currently in production.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	52,146	53,707	50,924	685,633
(U)	Appropriated Value	52,783	53,707		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-351	-376		
	b. Small Business Innovative Research	-1,122			
	c. Omnibus or Other Above Threshold Reprogram	-1,507			
	d. Below Threshold Reprogram				
	e. Rescissions	-206	-117		
(U)	Adjustments to Budget Years Since FY 2001 PBR			6,778	8,200
(U)	Current Budget Submit/FY 2002 PBR	49,597	53,214	57,702	693,833
<b>(U) Significant Program Changes:</b>					
Funding (FY02): \$6.513M for FY02 were realigned to support contractor and test rate increases for P3I Phase 3.					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207163F Advanced Medium Range Air-to-Air Missile</b>					PROJECT <b>3777</b>	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Missile Procurement, Budget Activity #2, PE 0207163F, P-1 Line Item, AMRAAM	83,630	97,174	104,701	100,218	105,330	113,887	111,023	107,875	89,326	6,850,161
(U) Replenishment Spares, BP25	327	231	242	241	197	285	203	203	200	60,286
(U) Initial Spares, BP26	217	137	76	89	76	76	76	76	75	63,337
(U) Seek Eagle	0	607	0	0	0	0	0	0	0	15,132
<b>(U) E. Acquisition Strategy</b>										
The AMRAAM Pre-Planned Product Improvement (P3I) program takes advantage of emerging technologies to update and expand the system capabilities to meet new user requirements. The Phase 1 missile allows internal carriage on the F-22 and JSF with clipped wings and fins as well as providing some software enhancements. The Phase 2 AIM-120 C4 missile adds a new warhead which increases lethality and the AIM-120 C5 missile has a +5 inch rocket motor for kinematic improvements. The first Phase 2 AIM-120 C4 missile was delivered in Aug of FY99. The Phase 2 AIM-120 C5 missiles started delivery in Jul of FY00. The Phase 3 missile is the first major upgrade to the seeker hardware and software to meet performance requirements for the FY04 and out time-period. The Phase 3 Cost Plus Award Fee EMD contract was awarded in Oct FY99. This missile will begin deliveries in FY04. The second stage of Phase 3, beginning in FY04, will result in improved guidance and kinematics.										
<b>(U) F. Schedule Profile</b>										
		<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>		
		1	2	3	4	1	2	3	4	1
(U) P3I Phase 3 Fuzing Functional Configuration Audit (FCA)				*						
(U) P3I Phase 3 Seeker Preliminary Design Review (PDR)				*						
(U) P3I Phase 3 Seeker Critical Design Review (CDR)							*			
(U) P3I Phase 3 ACE Flights									X	X
(U) P3I Phase 3 Seeker Test Readiness Review (TRR)										X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development						PE NUMBER AND TITLE 0207163F Advanced Medium Range Air-to-Air Missile				PROJECT 3777	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	a.	Phase 3 EMD Improved Seeker and Advanced EP Updates				47,828		50,831		55,953	
(U)	b.	Gov Mission Support				1,695		1,625		1,661	
(U)	c.	Gov Test & Evaluation				74		758		88	
(U)		Total				49,597		53,214		57,702	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
Misc. Contracts	SS/FFP	Annual	N/A	N/A	8,702	1,670	1,174	2,992	3,298	17,836	
F08635-90-C-0201 Hughes	SS/FFP	Aug 90	5,200	5,200	5,200	0	0	0	0	5,200	
F08626-91-C-0034 Hughes	SS/CPIF	Mar 91	93,506	93,506	93,506	0	0	0	0	93,506	
F08626-93-C-0044 (Phase 2) Hughes	SS/CPAF	Jun 94	117,558	117,558	117,558	0	0	0	0	117,558	
Phase 3 Risk Reduction	SS/CPAF	Oct 95	24,484	24,484	24,484	0	0	0	0	24,484	
Phase 3 Improved Fuzing Capability	SS/CPAF	Oct 99	3,937	3,937	3,937	0	0	0	0	3,937	
Phase 3 Improved Seeker and Advanced EP. Raytheon	SS/CPAF	Oct 99	206,822	206,822	24,434	46,158	49,657	52,961	33,612	206,822	
F08626-98-C-0027 EMD Contract Phase 3 Follow on	SS/CPAF	Oct 04	TBD	TBD	0	0	0	0	132,891	132,891	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>				<b>0207163F Advanced Medium Range Air-to-Air Missile</b>					<b>3777</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>										
*Note: Hughes became part of Raytheon Systems effective Dec 97										
<u>Support and Management Organizations</u>										
COEA	PO/MIPR	Jan 94	N/A	N/A	3,358	0	0	0	0	3,358
Contractor Support	REO/PR	Annual	N/A	N/A	16,126	1,236	1,062	1,082	5,790	25,296
JSPO Operations	PR/IMPAC	Annual	N/A	N/A	18,323	459	563	579	3,315	23,239
<u>Test and Evaluation Organizations</u>										
Government Test	REO/MIPR	Annual	N/A	N/A	35,998	74	758	88	408	37,326
<b>(U) <u>Government Furnished Property:</u></b>										
<u>Contract</u>										
<u>Item</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Obligation</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
Not Applicable										
<u>Support and Management Property</u>										
Not Applicable										
<u>Test and Evaluation Property</u>										
TM/ECM Pods	REO/MIPR	Annual			2,380	0	0	0	0	2,380
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					277,821	47,828	50,831	55,953	169,801	602,234
Subtotal Support and Management					37,807	1,695	1,625	1,661	9,105	51,893
Subtotal Test and Evaluation					38,378	74	758	88	408	39,706
Total Project					354,006	49,597	53,214	57,702	179,314	693,833

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207247F Air Force TENCAP</b>					PROJECT <b>0001</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0001	Air Force TENCAP	14,704	13,699	10,811	10,534	10,751	10,975	11,200	11,437	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) **A. Mission Description**  
 The Air Force Tactical Exploitation of National Capabilities (AF TENCAP) program was established in 1977 per Congressional direction and is a non-traditional acquisition program. AF TENCAP pursues seamless integration of space systems capabilities into military operations for tactical use by warfighters, expediting improvements to Air Force combat capabilities through rapid-prototyping projects, operational concept demonstrations, and transitions to the warfighter customer. Additionally, AF TENCAP-developed equipment is deployed in support of real-world contingency operations.

AF TENCAP leverages investments in space systems for tactical warfighter use in three ways:

- 1) Exploiting existing space systems for tactical applications, conceiving and demonstrating capabilities to exploit these systems through rapid-prototyping projects.
- 2) Influencing the design and operation of new space systems for warfighters by advocating tactical applications and missions for them (in the form of analyses and integration of space systems into roadmaps and architectures for Air Force weapons and C4I systems).
- 3) Supporting education and training of operational forces in emerging space/space-related technologies and concepts, as well as education of national providers about operational user requirements and environments, through participation in combat and contingency operations, exercises, and project demonstrations.

(U) **FY 2000 (\$ in Thousands)**

(U) \$10,081      Exploited existing space systems for tactical applications; influenced design of future space systems; supported education and training of operational forces

(U) \$2,758      Developed and tested hyperspectral imagery sensors and exploitation tools (per FY 2000 Congressional direction)

(U) \$1,053      Transitioned AF TENCAP concept demonstrations to field

(U) \$158      Contract bridge activities

(U) \$654      Provided program support

(U) \$14,704      Total

The following net transaction is not reflected in the FY00 program total: BTR = +\$216K. This transaction is not reflected in other sections of the R-DOCs where an FY00 total is shown.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0207247F Air Force TENCAP</b>		<b>0001</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>					
(U)	\$8,579	Exploit existing space systems for tactical applications; influence the design of future space systems; support education and training of operational forces			
(U)	\$4,000	Hyperspectral imagery sensor research, development, and testing (per FY 2001 Congressional direction)			
(U)	\$405	Transition AF TENCAP concept demonstrations to operational units/acquisition agency			
(U)	\$715	Provide program support			
(U)	\$13,699	Total			
The following net transactions are not reflected in the FY01 program total: BTR: = +\$2150K, and SBIR = -\$948K. These transactions are not reflected in other sections of the R-DOCs where an FY01 total is shown.					
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U)	\$8,334	Exploit existing space systems for tactical applications; influence the design of future space systems; support education and training of operational forces			
(U)	\$1,750	Transition AF TENCAP concept demonstrations to field			
(U)	\$727	Provide program support			
(U)	\$10,811	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
Since this effort supports fielded systems, it is in Budget Activity 7, Operational Systems Development.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	12,929	9,826	10,779	TBD
(U)	Appropriated Value	13,102	13,826		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-102	-97		
	b. Small Business Innovative Research	-476			
	c. Omnibus or Other Above Threshold Reprogram	-208			
	d. Below Threshold Reprogram	2,439			
	e. Rescissions	-51	-30		
Project 0001		Page 2 of 6 Pages	Exhibit R-2 (PE 0207247F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0207247F Air Force TENCAP</b>			<b>0001</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>				<u>Total Cost</u>			
(U)	Adjustments to Budget Years Since FY 2001 PBR			32							
(U)	Current Budget Submit/FY 2002 PBR	14,704	13,699	10,811				TBD			
<b>(U) Significant Program Changes:</b>											
FY 00: Reprogramming supports AF TENCAP project development/demonstration in conjunction with Joint Expeditionary Force Experiment 2000 and the Air Force Space Game											
FY01: \$150K for Schriever 2001 Space War Game database development, model runs, and results analysis. \$2 million for Space Long Range Planning studies and analyses.											
FY 2002-and beyond: Adjustments support higher Air Force priorities.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Other APPN	192	195	197	196	199	203	207	211	Continuing	TBD
	Other Procurement, Air Force funding in 'Intelligence Communications Equipment,' WSC 832070										
<b>(U) E. Acquisition Strategy</b>											
Cost plus award fee contracts with indefinite delivery and quantity contract vehicles available to AF TENCAP. Theater MAJCOM mission area plan (MAP) deficiencies provide the requirements for AF TENCAP development projects. Each project must correct a MAP deficiency or deficiencies and be approved by the AF TENCAP O-6 (Colonel) Review Group. In addition, theater MAJCOMs must be willing to assume future acquisition and logistics responsibilities, budgeting for projects in their Program Objective Memorandum submissions.											
<b>(U) F. Schedule Profile</b>											
		<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207247F Air Force TENCAP					PROJECT 0001			
<b>(U) F. Schedule Profile Continued</b>													
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) FY 2000 Projects Authorized to Proceed	*												
(U) Contractor Proposals for FY 2001 Projects				*									
(U) FY 2001 Projects Evaluated and Approved				*									
(U) FY 2001 Projects Authorized to Proceed					*								
(U) FY 2002 Projects Identified						*							
(U) Contractor Proposals for FY 2002 Projects								X					
(U) FY 2002 Projects Evaluated and Approved								X					
(U) FY 2002 Projects Authorized to Proceed									X				
(U) FY 2003 Projects Identified										X			
(U) Contractor Proposals for FY 2003 Projects												X	
(U) FY 2003 Projects Evaluated and Approved												X	
* = Completed Event													
X = Planned Event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207247F Air Force TENCAP			PROJECT 0001		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Exploiting existing space systems; influencing future systems; supporting education and training				10,081		8,579			8,334
(U)	Hyperspectral imagery sensor research, development and testing (per FY 2000 and FY 2001 Congressional direction)				2,758		4,000			0
(U)	Transitioning concept demonstrations to operational units/acquisition agency				1,053		405			1,750
(U)	Contract bridge activities				158					
(U)	Program support				654		715			727
(U)	Total				14,704		13,699			10,811
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Not Applicable										
<u>Support and Management Organizations</u>										
Lockheed Martin	C/CPAF	Sept 95	42,494	42,494	36,424	6,070	0	0	0	42,494
EADDS II Contract*	C/CPAF	Aug 00	Continuing	Continuing	0	105	8,865	8,446	Continuing	TBD
APTI	**	**	3,951	3,951	0	1,951	2,000	0	0	3,951
General Atomics	***	***				395	1,000			1,395
Multiple	Various	Multiple	Continuing	Continuing	20,695	6,183	1,834	2,365	Continuing	TBD
* Science Applications International Corporation (SAIC), Computer Science Corporation (CSC), and SPARTA (a group of small businesses) are the prime contractors for the Engineering Analysis Design & Development II contract that now serves as the primary AF TENCAP contract vehicle.										
**FY00 funds were obligated on a classified Navy TENCAP contract. FY01 funds placed on GSA contract.										
***Funds obligated on a classified Big Safari contract.										
<u>Test and Evaluation Organizations</u>										
Not Applicable										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207247F Air Force TENCAP				PROJECT 0001	
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development									
Subtotal Support and Management				57,119	14,704	13,699	10,811	TBD	TBD
Subtotal Test and Evaluation									
Total Project				57,119	14,704	13,699	10,811	TBD	TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0207253F Compass Call</b>						<b>PROJECT</b> <b>4804</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4804	Compass Call	13,780	21,634	3,908	3,904	3,900	0	5,049	6,526	Continuing	TBD
Quantity of RDT&E Articles		2	2	2	2	2	0	0	0	0	0

Note: FY03-FY07 budget numbers do not reflect DoD's strategic review results.

**(U) A. Mission Description**

COMPASS CALL is the USAF's airborne wide area coverage offensive counter information system. It denies, disrupts, degrades and deceives adversary voice and data communications, disrupting their ability to effectively command and control forces in the field. Although COMPASS CALL has been a fielded, operational capability since 1983, it continues to evolve and adapt to counter the constantly changing adversary tactical communications. Most recently, this is reflected in a shift from traditional military communication systems to an increasing reliance on commercial/civil capabilities.

The development to be accomplished by these funds center around the direct incorporation of capabilities provided by Engineering and Manufacturing Development (EMD) and other related programs/activities into the operational system to include Block 20, Block 30, Block 35 and related integration, testing, training, simulation and deploying systems. The evolution of the adversary threat requires developmental investments in a wide range of activities and ancillary subsystems. These activities include significant effort in the development and operational fielding of the Tactical Radio Acquisition and Countermeasures Subsystem (TRACS) which represents the next evolutionary capability increase in receiver/countermeasure effectivity for COMPASS CALL. Activities are also required in the related areas of human-machine interfaces, software, testing and integration, signals analysis, countermeasure development for the evolving threat, mission planning, Concept of Operations (CONOPS) development and program planning for the production of subsystems and capabilities. RDT&E articles for FY00-04 are TRACS engineering and manufacturing development units necessary for this system to evolve to counter emerging threats.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$4,200** Continue TRACS-C development and integration
- (U) \$453** Start flight test activities for TRACS-C
- (U) \$9,127** TRACS-F Development
- (U) \$13,780** Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0207253F Compass Call</b>	<b>4804</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>				
(U) \$4,501	Complete TRACS-C development and integration			
(U) \$986	Continue flight test for TRACS-C			
(U) \$300	Conduct TRACS-F ground demonstration			
(U) \$7,923	Spear System Improvements (Congressional add)			
(U) \$7,924	Analysis System Upgrade (Congressional add)			
(U) \$21,634	Total			
Note: The following net transactions are not reflected in the FY01 program total: BTR = -\$75K and SBIR = -\$179K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.				
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
(U) \$3,023	Develops and integrates classified capabilities using new technologies against emerging/evolving C3I threats			
(U) \$885	Ground and Flight Test			
(U) \$3,908	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	12,837	5,834	3,886	TBD
(U) Appropriated Value	12,908	21,834		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research	-387			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	1,309			
e. Rescissions	-50	-200		
(U) Adjustments to Budget Years Since FY 2001 PBR			22	
(U) Current Budget Submit/FY 2002 PBR	13,780	21,634	3,908	TBD
Project 4804				
Page 2 of 4 Pages				
Exhibit R-2 (PE 0207253F)				

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207253F Compass Call</b>	<b>PROJECT</b> <b>4804</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

(U) Significant Program Changes:

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) PE 0207253F, Aircraft Modification (3010)	9,007	16,576	42,227	31,734	17,802	8,420	8,596	8,778		TBD
(U) PE 0305164F, Aircraft Procurement (3010)*		5,000	8,000	12,000	8,500	8,500	0	0	0	42,000

(U) **E. Acquisition Strategy**

Cost Plus Award Fee (CPAF) contracting was employed for both EMD and flight test in FY00 and 01. Upgrades for waveform development to preserve system viability for the remainder of the program will employ Cost Plus Incentive Fee (CPIF) contracting.

(U) **F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TRACS-C Production Long Lead Starts	*											
(U) TRACS-C Flight Test Begins			*									
(U) TRACS-C EMD Unit Deliveries Begin					*							
(U) TRACS-C Acceptance Test Plan									*			

\* Denotes completed event  
X Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207253F Compass Call			PROJECT 4804			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Hardware/Software Development					13,327		20,648		3,253	
(U)	System Integration					453		986		655	
(U)	Total					13,780		21,634		3,908	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Sanders	CPAF/IF	FY99	TBD	TBD	11,892	13,327	20,648	3,253	Continuing	TBD
	<u>Support and Management Organizations</u>										
	None										
	<u>Test and Evaluation Organizations</u>										
	TBD	MIPR	FY00	TBD	TBD		453	986	655	Continuing	TBD
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development					11,892	13,327	20,648	3,253	TBD	TBD
	Subtotal Support and Management										
	Subtotal Test and Evaluation						453	986	655	TBD	TBD
	Total Project					11,892	13,780	21,634	3,908	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)					PROJECT 1012	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
1012	Aircraft Engine Component Improvement Program	151,546	165,395	175,101	187,414	212,626	170,050	173,633	177,323	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 The Aircraft Engine Component Improvement Program (CIP) provides critical sustaining engineering support (only source) for in-service Air Force engines throughout their service life. Aircraft Engine CIP corrects service revealed deficiencies and reduces total ownership costs (RTOC). The program's highest priority is to maintain flight safety, but also improves system Operational Readiness (OR) and Reliability and Maintainability (R&M). Historically, aircraft systems change missions, tactics, and environments to meet changing threats throughout their lives. Numerous new problems can develop in the engines through actual use during deployment, production, and service. Engine CIP provides the only funds to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. Engine CIP starts with delivery of the first production engine purchased with procurement funds, and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP addresses out-of-warranty usage and life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Since operational and safety problems arise throughout a system's service life, Engine CIP must be maintained at a level to provide the engineering support to make the changes essential for continued satisfactory system performance at affordable costs. Engine CIP ensures continued improvements in engine R&M factors, which reduce outyear support costs. Historically, R&M related Engine CIP efforts reduce outyear Operations and Maintenance (O&M) and spares costs by a ratio greater than 21 to 1. MAJCOMs assume a viable Engine CIP effort is in place when submitting their budget requests for O&M and engine spares. Without the outyear cost avoidance provided by Engine CIP, outyear support funding would have to be increased drastically.

(U) **FY 2000 (\$ in Thousands)**

(U) \$118,504	Continuing CIP tasks (such as, but not limited to, improvement, support equipment, and repair tasks)
(U) \$29,389	Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)
(U) \$1,821	Continuing petroleum, oil, lubricants
(U) \$1,832	Continuing mission support
(U) \$151,546	Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																													
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>	<b>PROJECT</b> <b>1012</b>																																													
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$137,113 Continuing CIP tasks (such as, but not limited to, improvement, support equipment, and repair tasks)</p> <p>(U) \$21,702 Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)</p> <p>(U) \$3,000 Continuing petroleum, oil, lubricants</p> <p>(U) \$3,580 Continuing mission support</p> <p>(U) \$165,395 Total</p> <p>Note: The following net transactions are not reflected in the FY01 total: BTR = -3.020M and SBIR = -5.992M. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$137,401 Continuing CIP tasks (such as, but not limited to, improvement, support equipment, and repair tasks)</p> <p>(U) \$27,700 Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)</p> <p>(U) \$6,500 Continuing petroleum, oil, lubricants</p> <p>(U) \$3,500 Continuing mission support</p> <p>(U) \$175,101 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in budget activity 7 - Operational System Development, Research Category 6.6 because all efforts support fielded systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">158,329</td> <td style="text-align: right;">166,926</td> <td style="text-align: right;">174,127</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">160,212</td> <td style="text-align: right;">166,926</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-1,013</td> <td style="text-align: right;">-1,168</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-4,574</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">0</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">-1,028</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-2,051</td> <td style="text-align: right;">-363</td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	158,329	166,926	174,127	TBD	(U) Appropriated Value	160,212	166,926			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-1,013	-1,168			b. Small Business Innovative Research	-4,574				c. Omnibus or Other Above Threshold Reprogram	0				d. Below Threshold Reprogram	-1,028				e. Rescissions	-2,051	-363		
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																											
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Project 1012	Page 2 of 5 Pages	Exhibit R-2 (PE 0207268F)																																													

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>				PROJECT <b>1012</b>			
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Adjustments to Budget Years Since FY 2001 PBR					974					
(U)	Current Budget Submit/FY 2002 PBR			151,546	165,395	175,101			TBD		
(U)	<u>Significant Program Changes:</u> Funding increases starting in FY01 are primarily due to F119 Engine (F-22) CIP work which commenced in FY01.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
	RELATED ACTIVITIES:										
	(U) - PEs # 0604268A and #0604268N, Army/Navy Aircraft Engine CIPs for prior years										
	(U) - PEs # 0203752A and #0205633N, Army/Navy Aircraft Engine CIPs for FY 1996 and following years										
<b>(U) E. Acquisition Strategy</b>											
	Contracts within this Program Element are awarded sole source to engine manufacturers. CIP tasks are generally assigned to original engine manufacturers. Tasks are assigned based on available funding and prioritization of candidate tasks.										
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U)	Not applicable. CIP is a level of effort program that funds 700+ separate engineering tasks per year.										
Project 1012			Page 3 of 5 Pages				Exhibit R-2 (PE 0207268F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>			<b>1012</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Contracted Tasks					118,504		137,113		137,401
(U)	AFFTC Flight Tests					2,044		4,637		6,000
(U)	AEDC Altitude Tests					27,345		17,065		21,700
(U)	Petroleum/Oil/Lubricants					1,821		3,000		6,500
(U)	Mission Support					1,832		3,580		3,500
(U)	Total					151,546		165,395		175,101
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
GE-Evandale, OH	CPAF	Dec 99	N/A	N/A		60,225	58,485	53,532	Continuing	TBD
Pratt & Whitney	CPAF	Dec 99	N/A	N/A		47,144	68,095	75,019	Continuing	TBD
GE-Lynn, MA	CPFF	Dec 99	N/A	N/A		4,657	5,544	3,900	Continuing	TBD
Rolls Royce/Allison	CPFF	Jan 98	N/A	N/A		1,237	1,190	1,400	Continuing	TBD
Teledyne	CPFF	Dec 99	N/A	N/A		4,061	2,500	1,800	Continuing	TBD
Allied Signal/Honeywell	CPFF	Jan 98	N/A	N/A		241	677	800	Continuing	TBD
Williams International	CPFF	Jan 98	N/A	N/A		0	340	450	Continuing	TBD
Sundstrand	CPFF	Jan 98	N/A	N/A		939	282	500	Continuing	TBD
<u>Support and Management Organizations</u>										
In House Support/ Misc						1,832	3,580	3,500	Continuing	TBD
Studies										
Petroleum/Oil/						1,821	3,000	6,500	Continuing	TBD
Lubricants										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>			<b>1012</b>
<b>(U) Performing Organizations Continued:</b>						
<u>Test and Evaluation Organizations</u>						
AFFTC-Edwards AFB, CA			2,044	4,637	6,000	Continuing TBD
AEDC-Arnold AFB, TN			27,345	17,065	21,700	Continuing TBD
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			118,504	137,113	137,401	TBD TBD
Subtotal Support and Management			3,653	6,580	10,000	TBD TBD
Subtotal Test and Evaluation			29,389	21,702	27,700	TBD TBD
Total Project			151,546	165,395	175,101	TBD TBD
Footnote: Total prior to FY 2000 is not reflected above because the program was funded in procurement through FY 1979. RDT&E funding began in FY 1980.						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207277F Chief's Innovation Program</b>					PROJECT <b>4931</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4931	Eagle Vision	0	0	1,961	1,963	1,965	1,967	1,969	1,971	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Eagle Vision transferred from PE 35208F in FY02.  
FY03 - FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**  
Eagle Vision is a deployable ground station for programming and collecting panchromatic, multispectral, and synthetic aperture radar broad-area imagery from commercial earth remote sensing satellites and processing/merging it with national imagery for mission planning, topographic analysis, and intelligence-gathering purposes. The AF has an operational Eagle Vision system at Ramstein AFB, GE. The Reno ANGB, NV National Eagle (commercial imagery post processing capability) is being upgraded with direct downlink capability along with Eagle Vision being procured for South Carolina ANG. Eagle Vision transferred from PE 35208F in FY02.

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$1,423 Continue to update baselines and reduce footprints on Eagle Vision units  
 (U) \$538 Continue to provide sustaining system engineering and technical support  
 (U) \$1,961 Total

(U) **B. Budget Activity Justification**  
 Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207277F Chief's Innovation Program</b>					PROJECT <b>4931</b>		
<b>(U) C. Program Change Summary (\$ in Thousands)</b>												
					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>			<u>Total Cost</u>		
(U)	Previous President's Budget (FY 2001 PBR)				0	0	1,950					
(U)	Appropriated Value											
(U)	Adjustments to Appropriated Value											
	a. Congressional/General Reductions											
	b. Small Business Innovative Research											
	c. Omnibus or Other Above Threshold Reprogram											
	d. Below Threshold Reprogram											
	e. Rescissions											
(U)	Adjustments to Budget Years Since FY 2001 PBR							11				
(U)	Current Budget Submit/FY 2002 PBR							1,961			TBD	
(U)	<u>Significant Program Changes:</u>											
	This effort, previously part of Distributed Common Ground System PE 0305208F, was transferred in FY02 to this PE.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>												
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	Other APPN			3,689	2,371	2,305	2,313	2,319	2,325	Continuing	TBD	
<b>(U) E. Acquisition Strategy</b>												
	Eagle Vision was approved to use Sole Source procurement via an International Agreement Competitive Restrictions (IACR) for Acquisition and Sustainment. Future systems and technology will be contracted for under a competitive Request for Proposal ( RFP) process where possible.											
<b>(U) F. Schedule Profile</b>												
					<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
					1	2	3	4	1	2	3	4
(U)	Continue baseline upgrades and footprint reduction									X		



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207320F Sensor Fuzed Weapon (SFW)					PROJECT 1016	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
1016	Sensor Fuzed Weapon	11,000	0	0	0	0	0	0	0	0	64,086
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	8
<p>(U) <b><u>A. Mission Description</u></b>            This project continues development of the Sensor Fuzed Weapon (SFW) Pre-Planned Product Improvement (P3I). The P3I improvements to the baseline SFW will enhance weapon performance against primary targets (land combat vehicles), targets with countermeasures, and potentially allow for use against alternative targets. All P3I improvements are at the BLU-108 submunition level. The P3I BLU-108 submunition will also be used in the anti-armor version of the Joint Standoff Weapon (JSOW). SFW is an ACAT 2 program.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$8,578 Complete the P3I development program; correct technical problems; complete contractor development testing; and support govt. qualification testing            (U) \$384 Complete program management support, includes travel, program office supplies and equipment, training and technical engineering support            (U) \$2,038 Complete subsystem level testing and Cluster Bomb Unit (CBU) flight testing            (U) \$11,000 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>            This program is in budget activity 7 - Operational System Development, because this activity funds improvements to the SFW, which is currently in production. The SFW P3I is scheduled to cut-in the production program in FY01.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE						
							June 2001						
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT						
07 - Operational System Development				0207320F Sensor Fuzed Weapon (SFW)			1016						
<b>(U) C. Program Change Summary (\$ in Thousands)</b>													
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>					
(U)	Previous President's Budget (FY 2001 PBR)			11,785	0	0		64,739					
(U)	Appropriated Value			11,785									
(U)	Adjustments to Appropriated Value												
	a. Congressional/General Reductions			-2									
	b. Small Business Innovative Research			-425									
	c. Omnibus or Other Above Threshold Reprogram												
	d. Below Threshold Reprogram			-238									
	e. Rescissions			-120									
(U)	Adjustments to Budget Years Since FY 2001 PBR							-653					
(U)	Current Budget Submit/FY 2002 PBR			11,000		0		64,086					
(U)	<u>Significant Program Changes:</u>												
	None												
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>													
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U)	AF RDT&E												
(U)	Other APPN												
(U)	Procurement of Ammunition, AF P-1 Line Item 21			85,092	106,451	103,806	98,896	97,328	98,113	119,214	123,813	14,610	1,767,941
<b>(U) E. Acquisition Strategy</b>													
The SFW Pre-Planned Product Improvements (P3I) program is a 58 month R&D effort to enhance the BLU-108 submunition and projectile. This is a sole source Cost-Plus Award Fee (CPAF) contract for P3I to the current SFW submunition design. The SFW P3I submunition (improved BLU-108) will also be used in the JSOW weapon system.													
<b>(U) F. Schedule Profile</b>													
				<u>FY 2000</u>		<u>FY 2001</u>				<u>FY 2002</u>			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207320F Sensor Fuzed Weapon (SFW)</b>					PROJECT <b>1016</b>		
<b>(U) F. Schedule Profile Continued</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Design and Development of P3I		*										
(U) Preliminary Design Review (PDR)												
(U) Detailed Design/Development Tests												
(U) Development Test Meeting												
(U) Critical Design Review (CDR)		*										
(U) Hardware Build/Qualification Tests	*	*	*									
(U) Subsystem Level Testing	*	*	*	*								
(U) System Level Testing		*	*	*	X							
* = Completed Events												
X = Planned Events												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207320F Sensor Fuzed Weapon (SFW)			PROJECT 1016			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Major Contracts					8,578		0			
(U)	Support Contracts					228					
(U)	Program Office Support					156					
(U)	Test and Evaluation					2,038					
(U)	Total					11,000		0			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Textron System Defense	SS/CPAF	Oct 99	51,447	51,447	42,869	8,578	0		0	51,447
	<u>Support and Management Organizations</u>										
	ASC/YH	N/A	various	N/A	N/A	1,951	156	0		0	2,107
	Miscellaneous	various	various	N/A	N/A	1,374	228	0		0	1,602
	<u>Test and Evaluation Organizations</u>										
	46 OG/OGML	REO	Mar 00	N/A	N/A	6,703	2,038	0		0	8,741
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE		
							June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development				0207320F Sensor Fuzed Weapon (SFW)			1016		
<b>(U) Government Furnished Property Continued:</b>									
<u>Item</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
GFE (explosive) Army, Aberdeen	MIPR	May 97	Oct 97	72	0	0		0	72
GFE (RHA Plates) Army, Aberdeen	MIPR	Jun 96	Jul 96	117	0	0		0	117
<u>Support and Management Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0		0	0
<u>Test and Evaluation Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0		0	0
<u>Subtotals</u>				<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Subtotal Product Development				43,058	8,578	0		0	51,636
Subtotal Support and Management				3,325	384	0		0	3,709
Subtotal Test and Evaluation				6,703	2,038	0		0	8,741
Total Project				53,086	11,000	0		0	64,086

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207325F Joint Air-to-Surface Standoff Missile (JASSM)					PROJECT 4515	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4515	Joint Air-to-Surface Standoff Missile (JASSM)	154,376	115,214	79,197	42,367	9,094	5,926	174	0	0	880,117
	Quantity of RDT&E Articles	0	21	0	0	0	0	0	0	0	82
<p>FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      JASSM is a joint Air Force/Navy program with the Air Force as the lead service. This is an ACAT ID program to provide an affordable long range, conventional air-to-surface, autonomous, precision guided, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. Initial integration efforts are for the B-52H and F-16 (Block 50). Objective aircraft include the B-1, B-2, F-15E, F-16 (Block 40), F-117, and F/A-18E/F. JASSM successfully passed Milestone II in November, 1998 and is currently in Engineering and Manufacturing Development (EMD). This descriptive summary reflects Air Force funding only.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$121,662 Continue EMD.                      (U) \$15,125 Continue flight test support, test aircraft modifications, live fire test support, target construction/rehab.                      (U) \$11,906 Continue aircraft integration.                      (U) \$591 Continue mission planning and intelligence systems integration.                      (U) \$4,652 Continue program office support .                      (U) \$440 Continue mission support.                      (U) \$154,376 Total                      The following transactions are not reflected in the FY00 program total: ATR=+\$20.4M pending Omnibus approval</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$68,532 Continue EMD.                      (U) \$26,330 Continue flight test support, test aircraft modifications, live fire test support, target construction/rehab.                      (U) \$12,507 Continue aircraft integration.                      (U) \$1,316 Continue mission planning and intelligence systems integration.                      (U) \$5,875 Continue program office support .</p>											
Project 4515		Page 1 of 6 Pages					Exhibit R-2 (PE 0207325F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207325F Joint Air-to-Surface Standoff Missile (JASSM)</b>	<b>PROJECT</b> <b>4515</b>
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(U) **A. Mission Description Continued**

(U) **FY 2001 (\$ in Thousands) Continued**

- (U) \$654 Continue mission support.
- (U) \$115,214 Total

The following net transactions are not reflected in the FY01 program total: BTR=-166K, and SBIR=-4,437K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) **FY 2002 (\$ in Thousands)**

- (U) \$54,485 Continue EMD.
- (U) \$16,634 Continue flight test support, live fire test support, target construction/rehab.
- (U) \$5,218 Continue aircraft integration.
- (U) \$1,772 Continue mission planning and intelligence systems integration.
- (U) \$587 Continue program office support .
- (U) \$501 Continue mission support.
- (U) \$79,197 Total

(U) **B. Budget Activity Justification**

This program is reflected in Budget Activity 7, Operational System Development, because production funds have been included in the DoD budget submission to begin Low Rate Initial Production (LRIP) in FY02.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	164,425	120,281	68,795	879,051
(U) Appropriated Value	166,408	116,281		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,080	-814		
b. Small Business Innovative Research	-7,226			
c. Omnibus or Other Above Threshold Reprogram	-1,250			
d. Below Threshold Reprogram	-1,825			
e. Rescissions	-651	-253		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207325F Joint Air-to-Surface Standoff Missile (JASSM)</b>			PROJECT <b>4515</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
			<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>					
(U)	Adjustments to Budget Years Since FY 2001 PBR				10,402	1,066					
(U)	Current Budget Submit/FY 2002 PBR		154,376	115,214	79,197	880,117					
<b>(U) Significant Program Changes:</b>											
Funding: FY02 adjustments allow incremental funding of RDT&E test articles and completion of EMD activities leading to LRIP and MSIII.											
Schedule: Milestone III moved from February 03 to July 03 and remains several months ahead of Lot 3 (full rate) production award and within APB requirements. This is due to modifying the Development Test/Operational Test (DT/OT) and Initial Operational Test and Evaluation ( IOT&E) test matrix to include tests for both the non-Selective Availability Anti-Spoofing Module (SAASM) and SAASM configured missiles. We added two additional DT/OT tests and changed two IOT&E tests to include SAASM configuration testing.											
Technical: None.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Missile Procurement (AF) JASSM		0	42,937	50,505	101,801	145,494	148,578	197,633	650,801	1,337,749
(U)	SEEK EAGLE		0	744	3,754	1,501	3,003	0	2,998	0	12,000
<b>(U) E. Acquisition Strategy</b>											
All major contracts within this Program Element were awarded through full and open competition. The EMD phase option for JASSM is Cost Plus Award Fee (CPAF). This contract type provides the government the flexibility to periodically evaluate contractor performance while motivating the contractor to execute a successful program with emphasis on EMD schedule, system performance, and management effectiveness.											
JASSM is an OSD flagship program under Cost as An Independent Variable (CAIV). This allows the contractor to have maximum trade space to develop an affordable											
Project 4515			Page 3 of 6 Pages			Exhibit R-2 (PE 0207325F)					

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>						DATE <b>June 2001</b>																																																																																																																																													
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207325F Joint Air-to-Surface Standoff Missile (JASSM)</b>		PROJECT <b>4515</b>																																																																																																																																													
<p>(U) <b><u>E. Acquisition Strategy Continued</u></b>  missile that meets the four key performance parameters. Under CAIV, the program maintains a threshold AUPP of \$700,000 (BY95\$) and an objective AUPP of \$400,000 (BY95\$).</p> <p>The government is buying the JASSM system based on a contractor-developed, government-approved System Performance Specification (SPS) which became contractually binding at downselect. The contractor assumes Total System Performance Responsibility (TSPR) as defined in the SPS and warrants system performance for 15 years. Accordingly, the contractor is responsible not only for the design of the missile system, but also for planning and executing the Development Test and Evaluation (DT&amp;E) program to verify the missile system performance. In its role as facilitator and advisor to the contractor, the government formally arranges and funds the use of government flight test support for DT&amp;E. Although funded by the government, flight test support funds are part of the negotiated commitment between the contractor and the government ensuring the contractor is able to execute the DT&amp;E program according to the scope of the EMD contract.</p>																																																																																																																																																			
<p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="3" style="text-align: center;"><u>FY 2000</u></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) First DT/OT Flight - 4th Qtr FY 2000</td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) LRIP Decision - 1st Qtr FY 2002</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) LRIP I Contract Award - 1st Qtr FY 2002</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Begin IOT&amp;E Flight Testing (AFOTEC) - 3rd Qtr FY 2002</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>(U) Last DT/OT Flight Testing - 4th Qtr FY 2002</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) LRIP II Contract Award - 1st Qtr FY 2003</td> <td></td> </tr> <tr> <td>(U) Complete IOT&amp;E Flight Testing (AFOTEC) - 3rd Qtr FY 2003</td> <td></td> </tr> <tr> <td>(U) Milestone III - 4th Qtr FY 2003</td> <td></td> </tr> <tr> <td>(U) RAA B52 - 4th Qtr FY 2003</td> <td></td> </tr> </tbody> </table> <p>* = Completed Event X = Planned Event</p>									<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) First DT/OT Flight - 4th Qtr FY 2000				*									(U) LRIP Decision - 1st Qtr FY 2002									X				(U) LRIP I Contract Award - 1st Qtr FY 2002									X				(U) Begin IOT&E Flight Testing (AFOTEC) - 3rd Qtr FY 2002											X		(U) Last DT/OT Flight Testing - 4th Qtr FY 2002												X	(U) LRIP II Contract Award - 1st Qtr FY 2003													(U) Complete IOT&E Flight Testing (AFOTEC) - 3rd Qtr FY 2003													(U) Milestone III - 4th Qtr FY 2003													(U) RAA B52 - 4th Qtr FY 2003												
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Project 4515			Page 4 of 6 Pages			Exhibit R-2 (PE 0207325F)																																																																																																																																													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0207325F Joint Air-to-Surface Standoff Missile (JASSM)</b>				<b>4515</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Major Contracts					121,292		67,982		54,311	
(U)	Associated Contracts					11,906		12,507		5,218	
(U)	Support Contracts					5,613		7,741		2,533	
(U)	In-House					440		654		501	
(U)	Test Support					15,125		26,330		16,634	
(U)	Total					154,376		115,214		79,197	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
MDA - PDRR I	C/CPFF	Jun 96	120,548	120,548	120,548	0	0		0	120,548	
LM - PDRR I& II	C/CPFF	Jun 96	151,084	151,084	151,084	0	0		0	151,084	
LM - EMD	C/CPAF	Nov 98	373,292	373,292	106,659	121,292	67,982	54,311	23,048	373,292	
NOTE: Contractors are MDA - McDonnell Douglas Aircraft; LM - Lockheed Martin											
<u>Support and Management Organizations</u>											
F-16 SPO	PO	Apr 96	N/A	N/A	9,764	6,101	6,278	4,300	4,067	30,510	
B-52 SPO	PO	Sep 96	N/A	N/A	19,177	5,795	6,228	918	0	32,118	
Other Acft Integ	PO	Various	N/A	N/A	3,451	10	1	0	0	3,462	
Sverdrup Inc.	C/CPAF	Jan 96	N/A	N/A	9,391	2,724	3,216	247	2,535	18,113	
Navy	MIPR	Jan 96	N/A	N/A	2,249	0	0	0	0	2,249	
Project 4515			Page 5 of 6 Pages				Exhibit R-3 (PE 0207325F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										June 2001
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0207325F Joint Air-to-Surface Standoff Missile					4515
					(JASSM)					
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
JASSM SPO/Other	Misc	Various	N/A	N/A	20,842	3,329	5,179	2,787	11,132	43,269
<u>Test and Evaluation Organizations</u>										
46TW	PO	Jan 96	N/A	N/A	30,604	15,125	26,330	16,634	16,779	105,472
<b>(U) Government Furnished Property:</b>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
Not Applicable										
<u>Support and Management Property</u>										
Not Applicable										
<u>Test and Evaluation Property</u>										
Not Applicable										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					378,291	121,292	67,982	54,311	23,048	644,924
Subtotal Support and Management					64,874	17,959	20,902	8,252	17,734	129,721
Subtotal Test and Evaluation					30,604	15,125	26,330	16,634	16,779	105,472
Total Project					473,769	154,376	115,214	79,197	57,561	880,117

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>					PROJECT <b>4372</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4372 Time Critical Targeting	0	0	19,514	26,075	2,519	2,522	2,524	1,415	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

Concept Exploration/Concept Definition efforts were financed in FY00 and FY01 in PE 028060F. FY02 Time Critical Targeting Functionality is being funded in PE 0270410. Time Critical Targeting Functionality is transitioning to PE 0207410F.

(U) **A. Mission Description**  
 The Air Operations Center (AOC) enables the successful prosecution of the air campaign by Air Force, joint, and coalition leaders allowing them to make rapid and effective Command and Control (C2) decisions by providing the necessary air operations C2 and force execution tools. The AOC program also provides a necessary structure to transition and act as the focal point for a singular technical 'center of mass' for systems integration, technical transition, and process refinement for rapidly evolving C2 programs, processes and concepts. Numerous independent systems inherent in the entire spectrum of command, control, and communications and Intelligence, Surveillance and Reconnaissance (ISR) battle management encompass a robust fully functioning AOC. The AOC program utilizes the spiral development acquisition process supported by the Combined Air Operations Center-eXperimental (CAOC-X) located at Langley AFB, Virginia. CAOC-X serves as the place and process to bring together the user, tester, and developer to improve the ability of C2 systems to support the USAF's Air Expeditionary Forces. In addition, CAOC-X serves as the technical and operational baseline for all U.S. air operations centers. The AOC will eventually incorporate many current USAF C2 programs (e.g. Global Command and Control System (GCCS), Theater Battle Management Core Systems ( TBMCS), Global Combat Support System-Air Force (GCSS-AF) and Affordable Moving Surface Target Engagement (AMSTE), under its umbrella as their functionality is incorporated in the AOC weapon system. The initial AOC phase incorporates Time Critical Target (TCT) Functionality. TCT provides a Command and Control (C2) capability for the Joint Forces Commander (JFC) / Joint Force Air Component Commander (JFACC) to defeat theater TCTs across the spectrum of conflict. Coupled with updated operational procedures, the TCT Functionality supports tighter integration of C2, Intelligence, Surveillance and Reconnaissance (ISR) and attack systems. The TCT Functionality will utilize a mix of land, air space and sea assets to obtain required information. Follow-on AOC initiatives will include spiral-developed enhancements to TBMCS, DCGS, and other relevant C2 systems supporting the AF's global command and control system for today and tomorrow.

The primary program objectives of the AOC are to:

- Provide capabilities to collect, share and aggregate decision quality data between C2 nodes, ISR assets and attack aircraft
- Integrate the relevant AOC weapon system components to provide improved USAF, joint and coalition air operations C2

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>	PROJECT <b>4372</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <ul style="list-style-type: none"> <li>- Provide a scaleable, integrated capability to the AOCs that is fully supportable</li> <li>- Support receipt and display of ISR data through the use of existing and acquired communication systems</li> <li>- Develop regular updates to initial capability on a spiral development timeline (12-18 month)</li> <li>- Continue to drive down life cycle cost for the evolving system</li> <li>- Evaluate Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) and service/coalition C2 and ISR systems for integration into the AOC baseline</li> <li>- Continue to reduce footprint to support field deployments</li> <li>- Comply with Defense Information Infrastructure Common Operating Environment (DII COE) and Joint Technical Architecture (JTA) requirements to enhance air ops C2 interoperability</li> <li>- Overall, develop a system that is meets the intent of Joint Vision 2010 and 2020</li> </ul> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$0                      No Activity</p> <p>(U) \$0                      Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$0                      No Activity</p> <p>(U) \$0                      Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$17,222              Develop and integrate software capability meeting threshold requirements of the Operational Requirements Document, TCT Functionality, ACAT III, AC2ISRC. Core Increment functionality will include target development, sensor integration, threat launch and impact prediction, weapon-to-target pairing, intelligence preparation of the battlespace, and terrain and mobility analyses. Support evolving air ops C2 concepts, exercises and user evaluations (e.g. CAOC-X)</p> <p>(U) \$2,292              Survey applicable commercial and government applications and technologies to evaluate capabilities to enhance AOC functionality.</p> <p>(U) \$19,514              Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is a budget activity 7 - Operational System Development because it provides funding for the modernization of a currently existing and operating system.</p>		
Project 4372	Page 2 of 6 Pages	Exhibit R-2 (PE 0207410F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>			PROJECT <b>4372</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>						
(U)	Previous President's Budget (FY 2001 PBR)	0	0	19,514	TBD						
(U)	Appropriated Value	0	0								
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions	0	0								
	b. Small Business Innovative Research	0	0								
	c. Omnibus or Other Above Threshold Reprogram	0	0								
	d. Below Threshold Reprogram	0	0								
	e. Rescissions	0	0								
(U)	Adjustments to Budget Years Since FY 2001 PBR	0	0								
(U)	Current Budget Submit/FY 2002 PBR	0	0	19,514	TBD						
<b>(U) Significant Program Changes:</b>											
Concept Exploration/Concept Definition efforts were financed in FY00 and FY01 in PE 028060F. FY02 Time Critical Targeting Functionality is being funded in PE 0270410F. Time Critical Targeting Functionality is transitioning to PE 0207410F.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	0	0	0	0						TBD
(U)	Other APPN	0	0	0	0						TBD
<b>(U) E. Acquisition Strategy</b>											
Electronic Systems Center (ESC) provides program management for the Time Critical Targeting (TCT) Functionality Program. The acquisition strategy builds on Theater Missile Defense (TMD) concept exploration and prototyping concluding at the end of FY 01. The TCT Functionality is an outgrowth of the Air Force's limited ability to respond to TCTs in the desert and the Balkans. The following documents provide the requirements and guidance: Combat Air Force (CAF) Concept of Operations for Command and Control Against Time Critical Targets, July 1997; AF Mission Need Statement (MNS) for Theater Missile Defense, October 1991; JROCM 065-99, MNS for Theater Air and Missile Defense (TAMD), July 1999; Mission Need Statement for Joint TAMD, May 1999; Program Management Directive (PMD) 2440/Program Element (PE)# 27410 for AOC; Operational Requirements Document Aerospace Command and control and Intelligence, Reconnaissance, Surveillance Center AC2ISRC Time Critical Targeting Functionality, ACAT III, Draft, August 2000. In support of the timely prosecution of TCTs, the AC2ISRC, ESC, AFRL, SWC, and others have been involved in the development of several TCT decision support tools. As a means to evaluate and integrate the above applications AC2ISRC/C2N											
Project 4372				Page 3 of 6 Pages				Exhibit R-2 (PE 0207410F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>	PROJECT <b>4372</b>
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(U) **E. Acquisition Strategy Continued**  
 and ESC/ACP established a Software Interoperability Facility for TCT (SWIFT). This effort will serve as the initial baseline for the development of a TCT capability that will be fielded at designated TACS locations. An 8(a) set aside contract was awarded to design, develop, test, integrate, install, train and support TCT Functionality software. Separate contractors will be used to procure communication and computer hardware. The TCT Functionality will be updated using evolutionary acquisition guidelines. The plan is to field a rapidly deployable, small footprint construct to match Air Force AEF concept. The basic TCT Functionality configuration will augment the basic communications links and utilities services already in place at the individual AOC locations. Evolutionary acquisition IAW DoDI 5000.1, AFI 63-123 provides the opportunity to introduce additional capabilities during the course of development. Other products that may extend the capabilities as a whole will be investigated. There will be a continuing review of emerging technologies and products to enhance the TCT capabilities. The system will be supported using existing AOC maintenance support structure (a combination of contract and organic resource). Systems Engineering and Technical Analysis (SETA) contracts will be used to support the effort.

(U) **F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Design									X			
(U) Pre-Core Delivery to Field (One Site)										X		
(U) Core Drop to CAOC-X												X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207410F AEROSPACE OPERATION CENTER (AOC)				PROJECT 4372		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	TCT Software Development and Integration				0		0			17,222	
(U)	Evaluation of Other Development Efforts for Future Interface/Integration				0		0			2,053	
(U)	Test and Evaluation				0		0			239	
(U)	Total				0		0			19,514	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Zel Technologies	CPAF	Nov 02			0	0	0	13,811	Continuing	TBD
	TBD (comm& comp equip)	Multiple	Nov 02			0	0	0	2,814	Continuing	TBD
<u>Support and Management Organizations</u>											
	FFRDC	FPAF	Nov 02			0	0	0	1,600	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	Non-FFRDC		Nov 02			0	0	0	1,050	Continuing	TBD
	46TS	AF Form 616	Nov 02			0	0	0	239	Continuing	TBD
<b>(U) Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
<u>Support and Management Property</u>											
<u>Test and Evaluation Property</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>			<b>4372</b>	
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	16,625	TBD	TBD
Subtotal Support and Management	0	0	0	1,600	TBD	TBD
Subtotal Test and Evaluation	0	0	0	1,289	TBD	TBD
Total Project	0	0	0	19,514	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207412F Modular Control System</b>					PROJECT <b>485L</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
485L	Theater Air Control System Imp (TACSI)	6,205	19,691	7,047	6,730	4,777	20,029	4,972	5,067	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results

(U) **A. Mission Description**  
 The Control and Reporting Center (CRC), formerly known as the Ground Theater Air Control System (GTACS), also referred to under PE Title Modular Control System (MCS), is a low density/high demand rapidly deployable ground Command and control (Cs) asset for the Joint Task Force/Joint Forces Air Component Commander. The CRC is the senior C2 element providing connectivity and interoperability among elements of the Theater Air Control System (TACS) to include United States Air Force, Navy, Marine Corps, Army and allied/coalition assets. A modernization plan to fulfill Expeditionary Aerospace Force (EAF) requirements was programmed to start in FY01. Funding was obtained by realigning existing dollars and 'trading' manpower for RDT&E and procurement dollars. Modernization depended on 'reusing' software development under the Region/Sector Air Operations Center Modernization (R/SAOC) Program, which was terminated in Oct 99. The manpower originally 'traded' induced unacceptable operational risks and was 'brought back' with program dollars in the FY02 POM. These two actions drove the CRC/CRE Program back into its earlier sustainment mode while providing minimal upgrade improvements in smaller steps. To fulfill the modernization requirement to support EAF taskings, the CRC Program is exploring the opportunity to leverage off an acquisition strategy entitled Common Battle Management Software (CBMS) for utilization by several C2 platforms to further advance C2 concepts supporting future aerospace operations. Conducting acquisition activities to include, but not limited to requirements analysis, modeling and simulation, risk reduction, acquisition planning, enterprise integration, prototype development (i.e., radio/radar/data link remoting), and continued development of Theater Air Defense (TAD) Missile Tracking System (MTS) EMD.

(U) **FY 2000 (\$ in Thousands)**

(U) \$425                      Continue Concept Definition/Development for Evolutionary Upgrades to the CRC

(U) \$339                      Continue program support (i.e. travel, supplies, miscellaneous)

(U) \$5,441                    Initiate Development of TAD MTS Upgrade for the Radar Sensors (includes TAD MTS direct mission Support)

(U) \$6,205                    Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0207412F Modular Control System</b>		<b>485L</b>	
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2001 (\$ in Thousands)</b>					
(U)	\$9,067	Continue Concept Definition/Development of Evolutionary Upgrades to the CRC (to include, but not limited to, advanced planning, MCE Upgrades, BCS open architecture, enhanced radio/radar/data link remoting, misc.) (includes Evolutionary Upgrades direct mission support)			
(U)	\$927	Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)			
(U)	\$9,069	Continue Development of TAD MTS Upgrade for the Radar Sensors (includes TAD MTS direct mission support)			
(U)	\$628	Continue Systems Engineering			
(U)	\$19,691	Total			
The following net transactions are not reflected in the FY01 program total: BTR=-826K and SBIR=-700K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.					
<b>(U) FY 2002 (\$ in Thousands)</b>					
(U)	\$3,895	Continue Concept Definition/Development of Evolutionary Upgrades to the CRC (to include, but not limited to, advanced planning, MCE Upgrades, BCS open architecture, enhanced radio/radar/data link remoting, misc.) (includes Evolutionary Upgrades direct mission support)			
(U)	\$503	Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)			
(U)	\$2,272	Continue development of TAD MTS Upgrade for the Radar Sensors (Includes TAD MTS direct mission Support)			
(U)	\$377	Continue Systems Engineering			
(U)	\$7,047	Total			
<b>(U) B. Budget Activity Justification</b>					
The program is in Budget Activity 7 because CRC is a fielded, operational system.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	467	19,873	27,206	TBD
(U)	Appropriated Value	6,467	19,873		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research	-194			
	c. Omnibus or Other Above Threshold Reprogram				
Project 485L		Page 2 of 6 Pages	Exhibit R-2 (PE 0207412F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0207412F Modular Control System			485L				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
	d. Below Threshold Reprogram			-43							
	e. Rescissions			-25	-182						
(U)	Adjustments to Budget Years Since FY 2001 PBR					-20,159					
(U)	Current Budget Submit/FY 2002 PBR			6,205	19,691	7,047		TBD			
<b>(U) Significant Program Changes:</b>											
1. Funding of Program Office Support in FY01 shifts from Production (3080) to RDT&E (3600) in conjunction with development of evolutionary upgrades to CRC/CRE architecture. FY02 and out reductions resulted from realignment of funding from RDT&E/OPAF to OPAF & manpower buyback.2. FY00 reduction of 17K due to cancelled year bill for the EMT Program being paid with FY00 dollars											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Other APPN										
(U)	Other Procurement Air Force, WSC 833040, Theater Air Control System Improvement	15,710	2,034	0	3,289	22,350	27,134	44,928	45,379	Continuing	TBD
(U)	Other Procurement Air Force, WSC 838010, Comm Electronic Mods	1,021	745	788	592						TBD
(U)	Other Procurement Air Force, WSC 86190A, Initial Spares	1,521	1,260	1,065	421	385	88			Continuing	TBD
<b>(U) E. Acquisition Strategy</b>											
Primary emphasis on this program continues to be sustainment, while more modest steps toward upgrade/improvement will be initiated in FY01 and out as outlined below.											
Concept Definition/Development of Evolutionary Upgrades Strategies:											
1. In FY00, funding was used to perform an environmental assessment and independent study. The principle portion of the Radio Remoting effort (to include design, prototype and SVA productization) was funded in FY01 with the remaining effort (test and evaluation) to be funded in FY02. This strategy satisfies both an upgrade and											
Project 485L			Page 3 of 6 Pages			Exhibit R-2 (PE 0207412F)					

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207412F Modular Control System</b>	PROJECT <b>485L</b>
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(U) **E. Acquisition Strategy Continued**  
 an improvement, which allows for rapid insertion of technology and accommodates enhanced capability necessary to meet critical EAF requirements (reduces forward deployed footprint, keeping personnel out of harms way.) This capability ensures connectivity with Forward C2 platforms and fighters.

2. The CRC Program is exploring the opportunity to leverage off an acquisition strategy entitled Common Battle Management Software (CBMS) for utilization by several C2 platforms to further advance C2 concepts supporting future aerospace operations. This strategy improves warfighting capabilities, better utilizes Low Density/High Demand (LD/HD) crews and reduces operational costs by enabling C2ISR data fusion and forwarding.

(U) **F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CRC - TAD MTS					*				X			
(U) Evolutionary Upgrades to the CRC						*			X			
* Denotes completed event												
x Denotes planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207412F Modular Control System			PROJECT 485L		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Program Support (i.e. travel, supplies, and miscellaneous)				339		927			503
(U)	Systems Engineering				0		628			377
(U)	Concept Definition/Development for Evolutionary Upgrades to the CRC (includes BCS open systems, enhanced radio/radar remoting, misc.)(includes dedication Evolutionary Upgrades SPO Support)				425		9,067			3,895
(U)	Development of TAD MTS Upgrade for the Radar Sensors (includes dedicated TAD MTS SPO Support)				5,441		9,069			2,272
(U)	Total				6,205		19,691			7,047
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Contractor Northrop Grumman, Baltimore - TAD MTS	FFP	1QFY01	N/A	N/A		5,441	9,069	2,272	Continuing	TBD
Rome Labs & NAWCAD - Concept Definition/Development of Evolutionary Upgrades	FFP	1QFY01	N/A	N/A		425	9,067	3,895	Continuing	TBD
<u>Support and Management Organizations</u>										
Miscellaneous program support (travel, supplies, etc.)	Various	Various	N/A	N/A		339	927	503	Continuing	TBD
Systems Engineering.	Various	Various	N/A	N/A		0	628	377	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
07 - Operational System Development				0207412F Modular Control System					
				485L					
(U) <b>Performing Organizations Continued:</b> <u>Test and Evaluation Organizations</u> GFP/GFE: None									
(U) <b>Government Furnished Property:</b> <u>Contract Method/Type</u> <u>Award or</u> <u>Item</u> <u>or Funding</u> <u>Obligation</u> <u>Delivery</u> <u>Description</u> <u>Vehicle</u> <u>Date</u> <u>Date</u> <u>Product Development Property</u> None <u>Support and Management Property</u> None <u>Test and Evaluation Property</u> None				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				to FY 2000	FY 2000	FY 2001	FY 2002	Complete	Program
Subtotals				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
Subtotal Product Development					5,866	18,136	6,167	TBD	TBD
Subtotal Support and Management					339	1,555	880	TBD	TBD
Subtotal Test and Evaluation									
Total Project					6,205	19,691	7,047	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>	
<b>BUDGET ACTIVITY</b> 07 - Operational System Development					<b>PE NUMBER AND TITLE</b> 0207417F Airborne Warning and Control System (AWACS)				<b>PROJECT</b> 411L	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
411L Airborne Warning & Control System (AWACS)	43,382	35,325	39,787	104,626	159,767	214,163	191,611	98,440	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**  
 The funding set forth in this document investigates, develops, and integrates system improvements to enable the E-3 AWACS to remain an effective Battle Management airborne surveillance system for command and control of combat forces and for strategic defense of the U.S. This PE funds the following efforts:

Modernization Programs: (3600)

The Satellite Communication (SATCOM) Demand Assigned Multiple Access (DAMA) compliance was mandated by the Joint Chiefs of Staff (JCS) to expand Ultra High Frequency (UHF) SATCOM access and improve UHF SATCOM system interoperability. The AWACS DAMA SATCOM program will replace two non-DAMA UHF SATCOM terminals on each aircraft with two new DAMA compliant terminals. RDT&E funding covers AWACS aircraft integration risk reduction /Engineering Manufacturing Development (EMD) beginning in FY02.

The Block 40/45 risk reduction program drives down risk of utilizing new technology to meet the AWACS Block 40/45 Operational Requirements Document (ORD) ensuring the Block 40/45 program will meet war fighting requirements. Some of the techniques that will be utilized are modeling and simulation, requirement analysis, and designing a Commercial Off the Shelf (COTS) insertion process. Block 40/45 expects to deliver sensor fusion capability in support of the Single Integrated Air Picture (SIAP) via Multi-Sensor Integration (MSI), improve AWACS' contribution to Time Critical Targeting (TCT) via Data Link Infrastructure (DLI), and replace a 70's vintage mission computer and display system to improve quality and timeliness of sensor data to the shooter, improve Combat Identification (CID) and enable cheaper, faster upgrades via open systems architecture.

Comm projects such as HF Email, provide the AWACS system with an effective method for electronically receiving critical mission information such as the Air Tasking Order. The program will focus on engineering and retrofitting the current fleet.

Air Traffic Control (ATC) Compliance, the first spiral of the Global Air Traffic Management (GATM) program seeks to make communications and navigation

Project 411L Page 1 of 7 Pages Exhibit R-2 (PE 0207417F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207417F Airborne Warning and Control System (AWACS)</b>	PROJECT <b>411L</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>  improvements required to meet current mandated Air Traffic Control requirements through EMD and production.</p> <p>Command &amp; Control, Intelligence, Surveillance and Reconnaissance (C2ISR): C2ISR System Architecture Improvements provide timely enhancements to improve critical areas of the AWACS mission system, particularly in three areas:</p> <p>1) Worldwide deployment and airspace access: Increasingly restrictive International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) standards require the AWACS to achieve navigational and communications enhancements in order to retain its worldwide deployment commitment. Programs will focus on risk reduction, EMD, and fielding.</p> <p>2) Mission Capable (MC) rate improvement : Reliability, Maintainability, &amp; Availability (RM&amp;A) analysis and development projects provide system improvements that boost the below-standard MC rate of this critical C2 platform and increase airframe longevity in order to support its flight commitment to end of operational life. Such efforts focus on increasing reliability of the air vehicle, command, control and computer, and sensor systems and infrastructure improvements as well as providing solutions to diminishing manufacturing sources. Efforts will also focus on reduction of maintenance man-hours along with periodic depot maintenance improvements to increase aircraft availability. Programs will focus on risk reduction, development, and fielding.</p> <p>3) C2ISR enhancement and integration: AWACS seeks to fulfill the requirements of Joint Vision 2010/2020, Real Time Defense Information Infrastructure Common Operating Environment, and the Expeditionary Air Force Concept of Operations, as well as supporting the needs of the warfighter (as outlined in Kosovo Lessons Learned and other sources). AWACS seeks to achieve horizontal integration through Network Centric Collaborative Targeting (NCCT). Sensor and communications improvements, such as the ability to send and receive the air and ground picture via data link to fighter aircraft and record mission data for timely and accurate debriefings, will be developed through rapid prototyping, modeling, and simulation, participation in Joint live and simulated exercises (e.g., Joint Distributed Engineering Plant (JDEP)), and collaboration with other sensor platforms through tools such as NCCT. Certain near-term efforts, required by the warfighter to improve the timelines and accuracy of information passed to and from fighter aircraft in the engagement zone and to provide consistent and replayable mission data once the mission is complete, are quick reaction programs that can be developed and fielded to support the next air war. The program includes concept exploration &amp; technology development and system development &amp; demonstration efforts that support continuous improvements and implementation of C2ISR capabilities to enable a joint global strike task force. This effort includes, but is not limited to, manned and unmanned platforms, space, data links and advanced Battle Management Command, Control and Communications (BMC3) concepts. Fielding strategies will provide for immediate field retrofit when able, otherwise occur in current or future modernization programs. All programs are designed to integrate with and transition into the next C2ISR platform.</p>		
Project 411L	Page 2 of 7 Pages	Exhibit R-2 (PE 0207417F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0207417F Airborne Warning and Control System (AWACS)</b>	<b>411L</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>            Test System 3 (TS-3) and lab support includes maintenance and operations of the Government owned/contractor-operated test aircraft and associated laboratory facilities located at Boeing in Seattle, Washington. These facilities support AWACS modernization and support programs. They also provide the infrastructure for AWACS to participate in live fly and ground-based simulation exercises such as JDEP, Virtual Warfighter Center (VWC), SIAP, and Cooperative Engagement Capability (CEC) studies.</p>		
<p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p>		
(U) \$7,653	C2ISR System Architecture Improvements	
(U) \$7,003	Test System-3/AWACS Integration Test Support (AITS) and program sustaining efforts	
(U) \$11,981	Cooperative Engagement Capability (CEC) on TS-3	
(U) \$16,745	Block 40/45 Risk Reduction	
(U) \$43,382	Total	
<p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p>		
(U) \$12,112	C2ISR System Architecture Improvements	
(U) \$13,755	Test System-3/AITS support and program sustaining efforts	
(U) \$8,381	Block 40/45 Risk Reduction	
(U) \$1,077	Other	
(U) \$35,325	Total	
<p>The following net transactions are not reflected in the FY01 program total: BTR = -107K, SBIR = 1,092K, Incorrect Recission Posting = +1K</p>		
<p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p>		
(U) \$5,884	C2ISR System Architecture Improvements	
(U) \$14,750	Test System-3/AITS support and program sustaining efforts	
(U) \$7,444	Block 40/45	
(U) \$1,029	ATC Compliance	
(U) \$1,811	Comm Projects	
(U) \$8,869	SATCOM DAMA	
(U) \$39,787	Total	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE					
							June 2001					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT					
07 - Operational System Development				0207417F Airborne Warning and Control System (AWACS)			411L					
(U) <b><u>B. Budget Activity Justification</u></b>												
Operational Systems Development, Budget Activity 7. AWACS is a fielded, operational system currently undergoing major modifications/block upgrades and continuing sustainment activities.												
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>												
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>				
(U)	Previous President's Budget (FY 2001 PBR)			36,178	35,653	31,969		TBD				
(U)	Appropriated Value			36,178	35,653							
(U)	Adjustments to Appropriated Value											
	a. Congressional/General Reductions			-16								
	b. Small Business Innovative Research			-1,089								
	c. Omnibus or Other Above Threshold Reprogram			8,696								
	d. Below Threshold Reprogram			-245								
	e. Rescissions			-142	-328							
(U)	Adjustments to Budget Years Since FY 2001 PBR					7,818						
(U)	Current Budget Submit/FY 2002 PBR			43,382	35,325	39,787		TBD				
(U) <b><u>Significant Program Changes:</u></b>												
FY00: , +8,696K Omnibus Reprogram												
FY01: Does not reflect SBIR (-1.092M) and BTR of (-107K) for CAOC-X												
FY02: +\$8,903K from AF procurement to RDT&E for DAMA SATCOM. Also reflects -\$4,800K FY02 program adjustment in AWACS C2ISR & Interoperability, +\$6,796K for Acquisition Stability Reserve adjustments, and -\$2,900K AF Offset CEC and +\$232K from OSD adjustments.												
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>												
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	Other APPN											
(U)	Aircraft Procurement, AF, E-3 Mods	114,534	87,845	92,688	29,939	28,714	13,787	49,854	150,147		TBD	
(U)	E-3 Initial Spares, AF	40,499	18,195	28,344	16,089	17,903	17,180	0	0		TBD	
Project 411L									Page 4 of 7 Pages		Exhibit R-2 (PE 0207417F)	

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>																																																																																																																																			
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<p>(U) <b><u>E. Acquisition Strategy</u></b>                  Most major programs (SATCOM DAMA, Block 40/45, TS-3and lab support) will be sole source to Boeing aircraft in Seattle, Wa.</p> <p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2000</u></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) RSIP FOT&amp;E Complete</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) RSIP IOC June 01</td> <td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">*</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) BLK 30/35 FOC 1QTR FY02</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td> </tr> <tr> <td>(U) SATCOM DAMA EMD START</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td> </tr> <tr> <td>(U) COMM PROJECTS EMD START</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td> </tr> <tr> <td>(U) ATC COMPLIANCE EMD START</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td> </tr> <tr> <td colspan="13">* Denotes completed events</td> </tr> <tr> <td colspan="13">X Denotes planned events</td> </tr> </tbody> </table>											<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) RSIP FOT&E Complete													(U) RSIP IOC June 01							*						(U) BLK 30/35 FOC 1QTR FY02									X				(U) SATCOM DAMA EMD START											X		(U) COMM PROJECTS EMD START											X		(U) ATC COMPLIANCE EMD START											X		* Denotes completed events													X Denotes planned events												
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(U) BLK 30/35 FOC 1QTR FY02									X																																																																																																																																	
(U) SATCOM DAMA EMD START											X																																																																																																																															
(U) COMM PROJECTS EMD START											X																																																																																																																															
(U) ATC COMPLIANCE EMD START											X																																																																																																																															
* Denotes completed events																																																																																																																																										
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Project 411L				Page 5 of 7 Pages				Exhibit R-2 (PE 0207417F)																																																																																																																																		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207417F Airborne Warning and Control System (AWACS)			PROJECT 411L		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Contracts					38,553		24,329		32,472
(U)	MITRE/TEMS					3,053		5,386		6,097
(U)	Travel					349		785		640
(U)	Other					1,427		4,825		578
(U)	Total					43,382		35,325		39,787
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
(U)	Boeing (Block 40/45)	FPIF/CPAF	N/A	N/A	1,038	15,864	7,366	6,947	Continuing	TBD
(U)	Boeing (PDMA)*	Multiple	N/A	N/A	58,149	0	0			58,149
(U)	Boeing (C2ISR Sys Arch Imp)	FPIF/CPAF	N/A	N/A	23,493	5,957	10,218	4,881	Continuing	TBD
(U)	Boeing ( DAMA SATCOM )	T&M (ISC)	10/00	N/A	0	0	0	8,219	12,834	21,053
(U)	Comm Projects (HF E-mail)	FFP	10/01	N/A	0	0	0	1,811	2,768	4,579
(U)	ATC Compliance/GATM	Multiple	10/01	N/A	0	0	0	1,029	Continuing	TBD
(U)	Raytheon (CEC)	CPAF	11/99	N/A	0	11,981	0	0	0	11,981

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>					<b>0207417F Airborne Warning and Control System (AWACS)</b>				<b>411L</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>											
* N/A based on Program Depot Maintenance Airframe (PDMA) Acquisition Strategy which includes multiple contracts with multiple organizations with overlapping and continuing performance periods.											
** Total Program does not include NATO funds.											
<u>Support and Management Organizations</u>											
(U)Support/ITSP	Multiple	N/A	N/A	N/A	557,271	4,829	10,995	7,315	Continuing	TBD	
MITRE, travel, other contracts											
<u>Test and Evaluation Organizations</u>											
(U) Test System-3 ADAPT	Multiple	N/A	N/A	N/A	359,979	4,751	6,746	9,585	Continuing	TBD	
Contract/AITS Contract / Other test activities											
<b>(U) <u>Government Furnished Property:</u></b>											
	<u>Contract</u>										
	<u>Method/Type</u>	<u>Award or</u>									
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Property</u>											
<u>Support and Management Property</u>											
<u>Test and Evaluation Property</u>											
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development					82,680	33,802	17,584	22,887	TBD	TBD	
Subtotal Support and Management					557,271	4,829	10,995	7,315	TBD	TBD	
Subtotal Test and Evaluation					359,979	4,751	6,746	9,585	TBD	TBD	
Total Project					999,930	43,382	35,325	39,787	TBD	TBD	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207423F Advanced Communications Systems						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	2,840	9,324	8,512	4,777	2,862	2,625	58,327	Continuing	TBD
4934 Tactical Air Control Party (TACP)	0	0	9,324	8,512	4,777	2,862	2,625	2,628	Continuing	TBD
1013 Theater Deployable Communications (TDC)	0	2,624	0	0	0	0	0	0	0	23,139
4935 Joint Tactical Radio System (JTRS)	0	0	0	0	0	0	0	55,699	0	19,221
2982 Anti-Jam Radio Communications	0	216	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

'FY03-FY07 budget number do not reflect the DoD strategic review results'

(U) **A. Mission Description**  
 The Advanced Communication Systems program procures commercially available ground communications equipment for deployment to theaters of operation; and develops and procures jam-resistant, ultra high frequency (UHF) and very high frequency (VHF) frequency-hopping tactical radios. The Theater Deployable Communications (TDC) program provides funding for research, development, test and evaluation for the modernization of operational deployable communications, and integration of commercial off the shelf (COT) equipment that support tactical air operations in a combat environment. The integration of deployable communications equipment for active duty, guard and reserve forces. TDC equipment will be fielded at wings, combat communications squadrons, Air Force Special Operations Command and Air Mobility Command communication units, and Theater Air Control System units. This funding also provides System Program Office (SPO) internal management, engineering, and technical support for the continuing spiral development of (COTS) equipment and will examine appropriate emerging technologies. TDC equipment is composed of three components Lightweight Multi band Satellite Terminal equipment, the Integrated Communications Access Packages (ICAP), and Network Management System/Base Information Protection (NMS/BIP).

TACPs advise the ground commander and staff on the capabilities and use of aerospace power and assist them in planning for air support operations. TACPs provide United States Air Force (USAF) Tactics, Techniques and Procedures (TTP) expertise and a focal point for detailed integration of Close Air Support (CAS) with the fire and maneuver of ground forces. TACP tasks include requesting/coordinating aerospace missions, integrating aerospace and ground force plans, target marking and

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207423F Advanced Communications Systems</b>
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(U) **A. Mission Description Continued**  
 Suppression of Enemy Air Defenses (SEAD) control. To accomplish this, a mix of vehicle mounted communications pallets, Manpack Radios (MPRs), Laser Range Finders (LRFs) and digital communications devices. Together these three systems provide communications infrastructure in deployed bare base environments. FY99 funding was provided for Expeditionary Force Experimentatin (EFX) 99 it is part of an annual war fighter experiment to demonstrate emerging Air Force capabilities to deploy and employ decisive air and space power for the Joint Force Commander through a Rapid Response Air Expeditionary Force (RAEF). The experiment is designed to meet Chief of Staff of the Air Force (CSAF) requirement to explore how advanced command and control capabilities and new operational processes enable modern aerospace forces to decisively halt an invading force anywhere in the world. It is a continuous spiral development process for the C2 Weapon System.

(U) **B. Budget Activity Justification**  
 This program is in budget activity 7, Operational System Development RDT&E, AF because it examines appropriate emerging technologies for the continuing spiral development of commercial off-the-shelf (COTS) equipment; provide software development, determines and resolves integration issues pertaining to COTS equipment

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	2,864	2,867	2,907	TBD
(U) Appropriated Value	0	2,867		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		0		
b. Small Business Innovative Research		0		
c. Omnibus or Other Above Threshold Reprogram		0		
d. Below Threshold Reprogram		0		
e. Rescissions		-27		
(U) Adjustments to Budget Years Since FY 2001 PBR		0	6,417	
(U) Current Budget Submit/FY 2002 PBR	0	2,840	9,324	TBD
(U) <b><u>Significant Program Changes:</u></b>				
+ 6.417M was reprogrammed by CCN during the FY02 BES budget cycle from OPAF funding to RDTE				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207423F Advanced Communications Systems</b>	PROJECT <b>4934</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4934 Tactical Air Control Party (TACP)	0	0	9,324	8,512	4,777	2,862	2,625	2,628	Continuing	TBD

'FY03-FY07 budget numbers do not reflect the DoD strategic review results'

**(U) A. Mission Description**

Tactical Air Control Party (TACP) provide numerous critical functions across the battlespace. They advise the warfighter on aircraft employment; coordinate and control aerospace operations and participate in battle planning. TACPs are equipped with various communications and support gear needed to interface with both ground forces and aircraft conducting air operations, aerospace command and control (C2) agencies; including AWACS and Intelligence, Surveillance and Reconnaissance (ISR) agencies. TACPs advise the ground commander and staff on the capabilities and use of aerospace power and assist them in planning for air support operations. TACPs provide United States Air Force (USAF) Tactics, Techniques and Procedures (TTP) expertise and a focal point for detailed integration of Close Air Support (CAS) with the fire and maneuver of ground forces. TACP tasks include requesting/coordinating aerospace missions, integrating aerospace and ground force plans, target marking and Suppression of Enemy Air Defenses (SEAD) control. To accomplish this, they use a mix of vehicle mounted communications pallets, Manpack Radios (MPRs), Laser Range Finders (LRF) and computers with associated informational software.

**(U) FY 2000 (\$ in Thousands)**

(U) \$0 No Activity  
 (U) \$0 Total

**(U) FY 2001 (\$ in Thousands)**

(U) \$0 No Activity  
 (U) \$0 Total

**(U) FY 2002 (\$ in Thousands)**

(U) \$8,000 Develop JTRS compliant TACP Vehicular Communication System (VCS) hardware in conjunction with Army's JTRS Cluster I acquisition strategy  
 (U) \$1,000 System integration software development  
 (U) \$324 Operational and interoperability test planning  
 (U) \$9,324 Total

**(U) B. Project Change Summary**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207423F Advanced Communications Systems</b>				PROJECT <b>4934</b>		
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN OPAF	11,079	17,195	18,188	31,743	9,590	4,396	19,122	19,597	Continuing	TBD	
<b>(U) D. Acquisition Strategy</b>											
All major contracts within this Program Element and BPACS will be awarded after full and open completion											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U) VCS JTRS Compliant Radio Development										X	
(U) Integration activities										X	
(U) Start operational field testing										X	
'X' Activity has not been completed											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207423F Advanced Communications Systems			PROJECT 4934		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Engineering Support									1,538
(U)	VCS JTRS Compliant Radio Development									7,646
(U)	Travel									130
(U)	Miscellaneous									10
(U)	Total									9,324
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
ESC / CECOM Cluster I	TBD	TBD	TBD	TBD	0	0	0	7,581	Continuing	TBD
<u>Support and Management Organizations</u>										
ESC	FFP	Varies			0	0	0	1,538	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
JITC / 605th TS / 46th TS					0	0	0	205	Continuing	TBD
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	0	0	7,581	TBD	TBD
Subtotal Support and Management					0	0	0	1,538	TBD	TBD
Subtotal Test and Evaluation					0	0	0	205	TBD	TBD
Total Project					0	0	0	9,324	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207423F Advanced Communications Systems</b>					PROJECT <b>1013</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
1013 Theater Deployable Communications (TDC)	0	2,624	0	0	0	0	0	0	0	23,139	
<p>'FY03-FY07 budget number do not reflect the DoD strategic review results'</p> <p>(U) <b><u>A. Mission Description</u></b>                      As clearly demonstrated during Desert Shield/Desert Storm (DS/DS), 70's generation of deployable communications equipment is bulky, inflexible in design and does not meet today's projected airlift availability or interoperability standards. TDC packages have reduced airlift requirements and is designed to support a wide range of operational scenarios during deployment/employment and sustainment operations. Combat communications units are equipped with TDC Integrated Communication Access Packages (ICAP), Lightweight Multiband Satellite Terminals (LMST) and Network Management System /Base Information Protection (NMS/BIP) were deployed to Bosnia and Kosovo in support of theater air operations and deployed tactical air and mobility wings. LMST provided the reach back from the forward battle area back to the National Command Center and backbone theater communication required to operate in an austere environment to expedite dissemination of critical war fighter information. TDC performance during these operations exceeded Air Force and CINC expectations</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$680 Prepare TDC roadmap and acquisition 'way ahead'                      (U) \$1,838 Continue field interoperability and integration activities                      (U) \$106 Program Management Activity (travel, supplies, etc)                      (U) \$2,624 Total</p> <p>The following net transactions are not reflected in the FY01 program total: BTR = -929K and SBIR = -107K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p>											

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207423F Advanced Communications Systems</b>				PROJECT <b>1013</b>	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN OPAF	68,033	74,664	76,908	123,661	155,153	120,560	97,290	74,172	Continuing	TBD
<b>(U) D. Acquisition Strategy</b>										
The TDC contracts were awarded after full and open competitions. (When restricted technologies are involved, foreign competition is not allowed)										
<b>(U) E. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	
				1	2	3	4	1	2	3
(U) Complete Roadmap								4		1
(U) Complete 3600 integration activities								*		
(U) Complete TDC "Way-ahead"								*		
* Denotes completed event										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207423F Advanced Communications Systems			PROJECT 1013		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Software Support					0		802		0
(U)	Engineering Support					0		626		0
(U)	Integration Activities					0		1,090		0
(U)	Travel					0		100		0
(U)	Miscellaneous					0		6		0
(U)	Total					0		2,624		0
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
	Various				14,497	0	813		0	15,310
<u>Support and Management Organizations</u>										
	MITRE	FFP	Oct 97	5,517	0	4,559	0	958	0	5,517
	In house contractor Spt	FFP	Varies	2,317	0	1,459	0	853	0	2,312
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
	Subtotal Product Development				14,497	0	813		0	15,310
	Subtotal Support and Management				6,018	0	1,811		0	7,829
	Subtotal Test and Evaluation									
	Total Project				20,515	0	2,624		0	23,139

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207423F Advanced Communications Systems</b>	PROJECT <b>2982</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2982 Anti-Jam Radio Communications	0	216	0	0	0	0	0	0	0	19,221

'FY03-FY07 budget number do not reflect the DoD strategic review results'

(U) **A. Mission Description**

The SINCGARS (Single Channel Ground and Airborne Radio System) waveform provides anti-jam, very high frequency (VHF) hopping voice and data communications and is the primary mode of ECCM communications between the Air Force, Army and USMC. It is utilized during Close Air Support (CAS) for maneuver units and joint battlefield operations.

(U) **FY 2000 (\$ in Thousands)**

- (U) \$0 No Activity
- (U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**

- (U) \$116 Software update for resolution of GPS incompatibility
- (U) \$50 Support AN/ARC 222 fielding
- (U) \$50 Improve technical supportability for AN/ARC 164 and AN/ARC 204 units
- (U) \$216 Total

(U) **FY 2002 (\$ in Thousands)**

- (U) \$0 No Activity
- (U) \$0 Total

(U) **B. Project Change Summary**

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN	0	0	0	0	0	0	0	0	0	0

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>						DATE <b>June 2001</b>											
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>						<b>PE NUMBER AND TITLE</b> <b>0207423F Advanced Communications Systems</b>						<b>PROJECT</b> <b>2982</b>					
<b>(U) <u>D. Acquisition Strategy</u></b>																	
The Anti-Jame (SINCGARS) is an Army lead program that was awarded after full and open competition.																	
<b>(U) <u>E. Schedule Profile</u></b>																	
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>					
	1	2	3	4	1		2	3	4	1		2	3	4			
<b>(U)</b>	Investigate Anti-Jam Improvements				*												
<b>(U)</b>	Software Updates						*										
<b>(U)</b>	Support Fielding						*										
	* Denotes completed event																



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	39,940	44,159	37,331	35,049	30,622	31,261	32,222	32,909	Continuing	TBD
3330 Cmd Control Info Process Sys (C2IPS)	7,510	9,189	2,208	2,330	0	0	0	0	0	51,620
4287 Contingency Theater Automated Planning System (CTAPS)	0	0	0	0	0	0	0	0	0	104,634
4288 Wing C2 System (WCCS)	0	0	0	0	0	0	0	0	0	19,975
4790 Theater Battle Management Core System (TBMCS)	23,349	23,540	22,828	22,372	20,057	20,475	21,092	21,543	Continuing	TBD
4802 Deliberate and Crisis Action Planning and Execution Segment (DCAPES)	9,081	11,430	12,295	10,347	10,565	10,786	11,130	11,366	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 TBM C4I develops force-level and wing-level command, control, and intelligence systems which utilize DoD's Defense Information Infrastructure (DII) common operating environment (COE). Acquisition of these systems supports the Air Force's expeditionary force concept and will allow the execution of Theater Battle Management (TBM) planning, intelligence, and operational functions of the Joint Forces Air Component Commander (JFACC). Those functions include: generation and dissemination of the air tasking order (ATO) from the Air Operations Center (AOC) down to the wing and unit levels; aerospace defense planning and execution; airspace deconfliction; targeting and weaponeering; and many other applications supporting air operations command and control. Projects included in this program element are Command & Control Information Processing System (C2IPS), Contingency Theater Automated Planning System (CTAPS), Wing Command & Control System (WCCS), Theater Battle Management Core Systems (TBMCS), and Deliberate and Crisis Action Planning and Execution Segment (DCAPES).

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>				DATE <b>June 2001</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0207438F Theater Battle Management (TBM) C4I</b>			
<b>(U) <u>B. Budget Activity Justification</u></b> The TBMCS effort is post Milestone III effort, and is in Budget Activity 7, Operational Systems Development because it incrementally upgrades and develops capabilities for currently operational systems.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	46,406	41,068	32,388	TBD
(U)	Appropriated Value	46,727	44,568		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-66			
	b. Small Business Innovative Research	-1,058			
	c. Omnibus or Other Above Threshold Reprogram	-1,017			
	d. Below Threshold Reprogram	-4,463			
	e. Rescissions	-183	-409		
(U)	Adjustments to Budget Years Since FY 2001 PBR			4,943	
(U)	Current Budget Submit/FY 2002 PBR	39,940	44,159	37,331	TBD
(U)	<u>Significant Program Changes:</u>				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207438F Theater Battle Management (TBM) C4I</b>					PROJECT <b>3330</b>
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3330    Cmd Ctrl Info Process Sys (C2IPS)	7,510	9,189	2,208	2,330	0	0	0	0	0	51,620
FY03-FY07 budget numbers do not reflect the DoD strategic review results.										
<b>(U)    <u>A. Mission Description</u></b>										
The Command & Control Information Processing System (C2IPS) project develops communications and information processing hardware and software for all echelons of the Air Mobility Command (AMC). C2IPS provides AMC the automated capability to perform command and control functions associated with planning, scheduling, and global execution and monitoring of airlift and air refueling missions consisting of both fixed and deployable nodes. C2IPS satisfies the warfighters needs for horizontal and vertical communication.										
<b>(U)    <u>FY 2000 (\$ in Thousands)</u></b>										
(U)    \$5,112	Continue Increment 4 (Detailed Planning & Scheduling for integration of AMC Aircraft Schedules)									
(U)    \$2,198	Start next level DII/COE integration									
(U)    \$200	Continue requirements planning for future C2IPS architecture migration									
(U)    \$7,510	Total									
<b>(U)    <u>FY 2001 (\$ in Thousands)</u></b>										
(U)    \$4,134	Continue Increment 4 (Detailed Planning & Scheduling for integration of AMC aircraft schedules)									
(U)    \$4,856	Continue higher level integration of C2IPS in DII/COE									
(U)    \$199	Continue requirements planning for future C2IPS architecture migration									
(U)    \$9,189	Total									
The following net transactions are not reflected in the FY01 program total: BTR=+1,296 K and SBIR=-1,257 K. These transactions are not reflected in other sections of the R-docs where a FY01 total is shown.										
<b>(U)    <u>FY 2002 (\$ in Thousands)</u></b>										
(U)    \$2,208	Completion of Increment 4 (Detailed Planning & Scheduling for integration of AMC aircraft schedules)									
(U)    \$2,208	Total									
<b>(U)    <u>B. Project Change Summary</u></b>										
N/A										
Project 3330			Page 3 of 13 Pages				Exhibit R-2A (PE 0207438F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207438F Theater Battle Management (TBM) C4I</b>	PROJECT <b>3330</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										

(U) **D. Acquisition Strategy**

The C2IPS will be developed and installed in four increments. A spiral development process is used to produce consecutive software releases within each increment. The first three increments were developed under contract with Computer Sciences Corporation. Increment 1 provided a digital data message handling capability at each Information Processing System (IPS) node and implements mission execution monitoring. Increment 2 built on Increment 1 software to support mission planning and scheduling. Increment 3 provided C2IPS with a client server architecture as part of the system migration efforts. Increment 4 continues the evolutionary acquisition process, using modular development through government wide agency contracts. It also lays the foundation for the migration strategy that will result in interoperability of C2IPS with TBMCS and achieve level 7 DII/COE integration.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Increment 4 Completion Dates												
(U) Spiral A (Planning & Sched)					*							
(U) Spiral B (Plan & Sched, DII/COE)									X			
(U) Spiral C (Planning & Scheduling)											X	

Note: \* Denotes Completed Event; X Denotes Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I			PROJECT 3330		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Major Product Development Contracts					5,819		8,676		1,683
(U)	Support Contracts					1,591		313		325
(U)	Program Management Support					100		200		200
(U)	Total					7,510		9,189		2,208
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
CSC	FPIF	Dec 88	TBD	TBD	18,043	1,272	8,676	1,683	1,780	31,454
Unisys	IDIQ	Dec 98	TBD	TBD	3,378	4,547	0		0	7,925
<u>Support and Management Organizations</u>										
MITRE	T&M	Oct 94	N/A	N/A	6,003	1,272	0	0	0	7,275
TEMS/ITSP	Various	Various	N/A	N/A	1,467	319	313	325	350	2,774
ESC (government organization)	n/a	n/a	N/A	N/A	1,492	100	200	200	200	2,192
<u>Test and Evaluation Organizations</u>										
N/A										
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					21,421	5,819	8,676	1,683	1,780	39,379
Subtotal Support and Management					8,962	1,691	513	525	550	12,241
Subtotal Test and Evaluation										
Total Project					30,383	7,510	9,189	2,208	2,330	51,620

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I					PROJECT 4790	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4790	Theater Battle Management Core System (TBMCS)	23,349	23,540	22,828	22,372	20,057	20,475	21,092	21,543	Continuing	TBD
FY03-FY07 budget numbers do not reflect the DoD strategic review results.											
<b>(U) A. Mission Description</b>											
The Theater Battle Management Core Systems (TBMCS) develops force-level and wing-level command, control, and intelligence systems which utilize DoD's Defense Information Infrastructure (DII) common operating environment (COE) and Joint Technical Architecture (JTA). It links planning, intelligence and operations functions in an integrated battle management system for planning and executing the air war at the theater level and evaluates future aerospace command and control concepts identified and incorporated via evolutionary acquisition. Functions supported include: generation and dissemination of the air tasking order in support of the Joint Forces Air Component Commander (JFACC) from the Air Operations Center (AOC) down to the wing and unit levels; aerospace defense planning and execution; airspace deconfliction; targeting and weaponeering; and many other applications supporting air operations command and control. TBMCS integrates functionality of the following legacy systems: Contingency Theater Automated Planning System (CTAPS), Wing Command & Control System (WCCS), and Combat Intelligence System (CIS). Funds were added in FY00 and FY01 for NATO R&D to collectively enhance interoperability between the emerging NATO Air Command and Control System (ACCS) and TBMCS, and to share relevant research.											
<b>(U) FY 2000 (\$ in Thousands)</b>											
(U)	\$4,943	Completed TBMCS software version 1.0.1 development									
(U)	\$5,950	TBMCS software version 1.0.2 development									
(U)	\$9,637	Continue TBMCS software version 1.1 development									
(U)	\$1,000	NATO R&D									
(U)	\$1,819	System Engineering									
(U)	\$23,349	Total									
<b>(U) FY 2001 (\$ in Thousands)</b>											
(U)	\$16,728	TBMCS software v1.1 development (renamed increment 1.1)									
(U)	\$2,402	TBMCS software v2.0 development (renamed increment 1.2)									
(U)	\$1,500	NATO R&D									
(U)	\$2,910	System Engineering									
(U)	\$23,540	Total									
Project 4790											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I				PROJECT 4790		
(U) <b><u>A. Mission Description Continued</u></b>										
(U) <u>FY 2002 (\$ in Thousands)</u>										
(U)	\$1,290	Complete TBMCS software increment 1.1 development								
(U)	\$18,658	Continue TBMCS software increment 1.2 development (Web-Enable TBMCS, support Joint Expeditionary Forces Experiment (JEFX-02))								
(U)	\$1,000	Initiate TBMCS Block 2 planning								
(U)	\$1,880	System engineering and interoperability with US, NATO or other coalition systems								
(U)	\$22,828	Total								
(U) <b><u>B. Project Change Summary</u></b>										
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN									
(U)	Other Procurement, AF, PE 0207438F, WSC 832010	22,227								22,227
(U)	Other Procurement, AF, PE 0207438F, WSC 834520	47,150	49,580	43,383	52,610	54,191	55,207	55,858	57,105	Continuing TBD
(U)	Other Procurement, AF, PE 0207431F, WSC 834520		3,179	3,908	4,132	4,465	4,064	4,177	4,279	28,204
(U)	Other Procurement, AF, PE 0207431F, WSC 832010, Intelligence Data Handling System, Combat Intelligence System portion	1,344	0	0	0	0	0			Continuing

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207438F Theater Battle Management (TBM) C4I</b>	PROJECT <b>4790</b>
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(U) **D. Acquisition Strategy**  
 Electronic Systems Center (ESC), Hanscom AFB, MA manages the TBMCS program. Lockheed-Martin Mission Systems (LMMS) was competitively selected after full and open competition. They were awarded a cost plus award fee contract to develop improved capabilities in support of effective Theater Battle Management and to integrate existing and evolutionary capabilities in the DII Common Operating Environment. The program uses an evolutionary acquisition strategy with a series of incremental, spiral development software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to advances in commercial technology to fulfill evolving aerospace command and control requirements.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TBMCS software version 1.0.1												
(U) Multi-Service Operational T&E				*								
(U) Version 1.0.1 Release				*								
(U) TBMCS software version 1.0.2												
(U) In-Plant Test						*						
(U) Version 1.0.2 Release							*					
(U) TBMCS software increment 1.1												
(U) In-Plant Test										X		
(U) Combined Dev Test/Ops Test											X	
(U) Increment 1.1 release												X
(U) TBMCS software increment 1.2												
(U) In-Plant Test												X
(U) Initiate TBMCS software blk 2 Planning											X	

Note: \* Denotes Completed Event; X Denotes Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I			PROJECT 4790			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	System Integration and Development				21,530		20,630			20,948	
(U)	System Engineering and Support				1,819		2,910			1,880	
(U)	Total				23,349		23,540			22,828	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	LMMS	CPAF	Oct 95	TBD	TBD		21,530	20,130	18,948	Continuing	TBD
	TBD	TBD	Jul 01	TBD	TBD			500	2,000		2,500
	<u>Support and Management Organizations</u>										
	MITRE	CPAF	Oct 94	N/A	N/A		1,689	2,780	1,750	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	46TS	Project Order	Various	N/A	N/A		130	130	130	Continuing	TBD
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0207438F Theater Battle Management (TBM) C4I</b>			<b>4790</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		21,530	20,630	20,948	TBD	TBD
Subtotal Support and Management		1,689	2,780	1,750	TBD	TBD
Subtotal Test and Evaluation		130	130	130	TBD	TBD
Total Project		23,349	23,540	22,828	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I					PROJECT 4802		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4802	Deliberate and Crisis Action Planning and Execution Segment (DCAPES)	9,081	11,430	12,295	10,347	10,565	10,786	11,130	11,366	Continuing	TBD
FY03-FY07 budget numbers do not reflect the DoD strategic review results.											
<b>(U) A. Mission Description</b>											
Deliberate and Crisis Action Planning and Execution Segment (DCAPES) is being developed as the next generation AF interface to the Joint Operational Planning and Execution System (JOPES). This effort is an evolutionary follow on to the Contingency Operations Mobility Planning and Execution System (COMPES), which is currently the Air Force interface to JOPES. COMPES is the legacy system ported from WWMCCS to GCCS in 1996 as a stop gap measure. DCAPES will replace the functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the Joint vision for integrated C2. DCAPES is intended to be more tightly coupled with the range of planning support systems to provide a more effective crisis action planning capability for a wider range of operational scenarios and will fully support the force provider function of the AF Forces (AFFOR) Commander. DCAPES provides a real time, two way interchange of manpower, logistics, and operational data between the Air Force and the warfighting CINCs. It matches people and airframes/weapon systems to the CINC's warfighting requirements.											
<b>(U) FY 2000 (\$ in Thousands)</b>											
(U) \$8,581		DCAPES Increment 1 development, prototyping, coding, and internal testing									
(U) \$500		Government deployment and test support									
(U) \$9,081		Total									
<b>(U) FY 2001 (\$ in Thousands)</b>											
(U) \$10,531		DCAPES Increment 1 development, prototyping, coding, and testing									
(U) \$560		Government development testing and integration and interoperability testing									
(U) \$339		DCAPES Increment 2 requirements definition, development, prototyping, coding, and testing									
(U) \$11,430		Total									
<b>(U) FY 2002 (\$ in Thousands)</b>											
(U) \$7,985		DCAPES Increment 2 development, prototyping, coding, and testing (includes program management support)									
(U) \$600		Government deployment and test support									
(U) \$2,100		DCAPES Increment 3 requirements definition									
(U) \$1,610		DCAPES Increment 3 development, requirements allocation, prototyping, and coding									
Project 4802				Page 11 of 13 Pages				Exhibit R-2A (PE 0207438F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207438F Theater Battle Management (TBM) C4I</b>	PROJECT <b>4802</b>
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands) Continued

(U) \$12,295 Total

(U) **B. Project Change Summary**

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										

(U) **D. Acquisition Strategy**

DCAPES will be managed by Electronic Systems Center, Hanscom AFB, MA. In July 98, the DCAPES contract was awarded to the Raytheon, Computer Sciences Corporation, and Science Applications International team under Command and Control Product Line (CCPL) contracts awarded and maintained by Electronic Systems Center. The program uses an evolutionary acquisition strategy with a series of incremental software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to improvements in commercial technology.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete Increment 1 Development							X					
(U) Government Acceptance Testing (Incr 1)								X				
(U) DCAPES Initial Increment Fielded									X			
(U) Complete Increment 2 Development											X	
(U) Increment 2 Fielding												X
(U) Begin Increment 3 Development											X	

Note 1: \* Denotes Completed Event; X Denotes Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I			PROJECT 4802			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Development Contract Effort					7,281		9,370		9,695	
(U)	Test Support					500		560		600	
(U)	Program Management Support					1,300		1,500		2,000	
(U)	Total					9,081		11,430		12,295	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon/ CSC/ SAIC	FP/LH with award fee	Feb 98	N/A	N/A	0	7,263	9,370	9,695	Continuing	TBD
<u>Support and Management Organizations</u>											
	Mitre	CPAF					800	1,000	1,200	Continuing	TBD
	TEMS	T&M					400	500	800	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	46 Test Sqdn	Project Order					618	560	600	Continuing	TBD
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>											
	Subtotal Product Development					0	7,263	9,370	9,695	TBD	TBD
	Subtotal Support and Management						1,200	1,500	2,000	TBD	TBD
	Subtotal Test and Evaluation						618	560	600	TBD	TBD
	Total Project					0	9,081	11,430	12,295	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207581F JOINT STARS						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	135,578	147,750	147,859	176,720	321,467	374,559	300,309	151,660	Continuing	TBD
0003 JSTARS	135,578	147,750	68,859	37,720	117,467	136,559	133,309	65,660	Continuing	TBD
4995 Multi-Platform RTIP	0	0	79,000	139,000	204,000	238,000	167,000	86,000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 This program element funds two related but distinct Air Force efforts: the Joint Surveillance Target Attack Radar System (Joint STARS) and the Multi-Platform Radar Technology Insertion Program (MP-RTIP).

There is an Air Force and Army need to provide, from airborne platforms, near-real time surveillance and targeting information on moving and stationary ground targets (growth to maritime operations), slow moving rotary and fixed wing aircraft, and rotating antennas. This information enables operational and tactical commanders to make and execute battle decisions. To meet these needs, the Air Force and Army initiated the Joint Surveillance Target Attack Radar System (Joint STARS) program with the Air Force as lead service. Joint STARS provides target information for pairing direct attack aircraft and standoff weapons against selected targets.

The Multi-Platform Radar Technology Insertion Program (MP-RTIP) program is the result of a restructuring of the Joint STARS Radar Technology Insertion Program (RTIP), formerly a Pre-Planned Product Improvement to Joint STARS. MP-RTIP will deliver enhanced Wide Area Surveillance (WAS) system capabilities to the warfighter, provide for a robust Global Hawk reconnaissance capability, and enable NATO's Alliance Ground Surveillance (AGS) program.

(U) **B. Budget Activity Justification**  
 These funds are required to meet the requirements, capabilities and efforts further defined in the 'Mission Description' section of the two following R-2s.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
				June 2001
BUDGET ACTIVITY		PE NUMBER AND TITLE		
<b>07 - Operational System Development</b>		<b>0207581F JOINT STARS</b>		
(U)	<b><u>C. Program Change Summary (\$ in Thousands)</u></b>			
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
				<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	147,582	144,118	132,993
(U)	Appropriated Value	148,488	149,118	
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-95		
	b. Small Business Innovative Research	-4,436		
	c. Omnibus or Other Above Threshold Reprogram			
	d. Below Threshold Reprogram	-7,204		
	e. Rescissions	-1,175	-1,368	
(U)	Adjustments to Budget Years Since FY 2001 PBR			14,866
(U)	Current Budget Submit/FY 2002 PBR	135,578	147,750	147,859
(U)	<b><u>Significant Program Changes:</u></b>			
	The \$14,866K increase since the FY2001 PBR resulted primarily from the addition of funds to the Block 20 effort to upgrade Joint STARS trainer/simulator capability.			

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>					PROJECT <b>0003</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0003	JSTARS	135,578	147,750	68,859	37,720	117,467	136,559	133,309	65,660	Continuing	TBD

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**

There is an Air Force and Army need to provide, from airborne platforms, near-real time surveillance and targeting information on moving and stationary ground targets (growth to maritime operations), slow moving rotary and fixed wing aircraft, and rotating antennas. This information enables operational and tactical commanders to make and execute battle decisions. To meet these needs, the Air Force and Army initiated the Joint Surveillance Target Attack Radar System (Joint STARS) program with the Air Force as lead service. Joint STARS provides target information for pairing direct attack aircraft and standoff weapons against selected targets. The system is capable of being cued by other reconnaissance, surveillance, and target acquisition systems and is able to respond rapidly to worldwide contingencies. In addition, we are providing a flight crew training system which supports initial qualification training, update, and continuation training for JSTARS pilots, copilots and flight engineers at a rate that meets ACC operational needs. The operational utility of the system was effectively demonstrated by the two developmental aircraft in support of combat operations during Desert Storm. We are also determining the means to enhance the warfighter's battle management command, control & communications (C3) capability to achieve the Global Strike Task Force (GSTF) vision. We are developing advanced battle management decision aids and information fusion to enable commanders to make more timely decisions in tracking and killing time critical targets (TCTs) and achieving a Predictive Battle-Space Awareness (PBA) environment (see Spiral Implementation line). The Joint STARS Program Office has been designated as the Air Force acquisition lead for the Joint Service Work Station (JSWS) and is currently servicing the Combat Air Forces JSWS needs. Joint STARS aircraft were deployed in support of Operation Joint Endeavor in Dec 95 and again from Nov to Dec 96. Joint STARS also successfully supported Operation Allied Force from Feb to June 99. As a result of these Joint STARS successes, NATO has expressed interest in the Joint STARS radar system. In Sep 96 the Defense Acquisition Board (DAB) Milestone III Review approved full rate production of a 19 E-8C program. The 93d Air Control Wing, Robins AFB, GA, declared Joint STARS Initial Operational Capability (IOC) in Dec 97 and the system is now participating in operational and training exercises. After the 1996 Quadrennial Defense Review recommended a revision of the Joint STARS production profile, the Air Force reduced Joint STARS production from 19 to 13 E-8Cs. Full funding for the 14th, 15th and 16th E-8C was provided by OSD and the Congress during the FY00, FY01 and FY02 budget cycles respectively. Long lead funding for the 17th E-8C is included in FY02 PB.

(U) **FY 2000 (\$ in Thousands)**

- (U) \$3,762 Complete Block 10 Joint Integrated Maintenance Information System (JIMIS) Efforts
- (U) \$17,350 Continue Block 20 Computer Replacement Program (CRP) and Support Training System (STS) Efforts
- (U) \$14,625 Continue Block 30 Satellite Communications (SATCOM) and Link 16 Efforts
- (U) \$63,491 Continue Block 40 Multi-Platform Radar Technology Insertion Program (RTIP) Efforts

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		<b>DATE</b> June 2001
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0207581F JOINT STARS</b>	<b>0003</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2000 (\$ in Thousands) Continued</u></b>		
(U) \$27,138	Continue Test Efforts (Joint Test Force (JTF), Follow-On Test Support (FOTS)/JSTARS Extended Test Support (JETS), Range Support, Support T-3 and Test Labs)	
(U) \$6,590	Continue Flight Crew Training System (FCTS) Development	
(U) \$2,622	Continues R&M/International Cooperation/Standardization/Interoperability Activities (Diminishing Manufacturing Sources (DMS), Defense Information Infrastructure Common Operating Environment (DII COE) NATO Consultation, Command & Control (NC3A) Support)	
(U) \$135,578	Total	
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$25,786	Continue Block 20 Training Systems (examples include Support Training System (STS) & Distributed Mission Training (DMT) and complete CRP Development) Efforts	
(U) \$19,691	Continue Block 30 (such as: SATCOM, Connectivity, Link 16) Efforts	
(U) \$56,337	Continue Block 40 (Multi-Platform RTIP) Efforts. Beginning in FY02 funding moves to BPAC 674995.	
(U) \$30,955	Continue Test Efforts (for example: JTF, FOTS/JETS, Range Support, Support of T-3 and Test Labs)	
(U) \$6,500	Continue Flight Crew Training System (FCTS) Development	
(U) \$100	Continues R&M/International Cooperation/Standardization/Interoperability Activities (for example: DMS, DII COE, NC3A, ABCCC Divestiture, Multi-Mission Command & Control (MC2C) Constellation Studies/Analysis, Network Centric Collaborative Targeting (NCCT) Studies/Implementation, Improved Data Modem, etc.)	
(U) \$3,534	Indirect SPO OPS Support	
(U) \$4,847	Begin Global Air Traffic Management (GATM) Pre EMD Risk Reduction Activities (Congressional Add)	
(U) \$147,750	Total	
The following net transaction is not reflected in the FY01 program total: BTR -\$0.066. This transaction is not reflected in other sections of the R-docs where an FY01 total is shown.		
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$17,708	Continue Block 20 (Continue Training Systems and Support Systems Development)	
(U) \$16,467	Continue Block 30 (such as: SATCOM, Connectivity, Link 16) Efforts	
(U) \$27,383	Continue Test Efforts (for example: JTF, JETS, Range Support, Support of T-3 & Test Labs)	
(U) \$643	Complete FCTS Development	
(U) \$500	Continues R&M/International Cooperation/Standardization/Interoperability Activities (for example: DII COE, NATO Consultation, Command	
Project 0003	Page 4 of 14 Pages	Exhibit R-2A (PE 0207581F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																																				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>				PROJECT <b>0003</b>																																																																			
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b></p> <p style="padding-left: 40px;">and Control Agency (NC3A) Support, Coalition Aerial Surveillance And Reconnaissance (CAESAR) and Joint Service Work Stations (JSWS)), etc.</p> <p>(U) \$3,189 Indirect SPO OPS Support</p> <p>(U) \$2,969 Spiral Development Activities. Examples: Advanced Studies, Interoperability, Integration, S/W Integrated Release, RTOC upgrades, and various exercises to rapidly field capability in response to emerging warfighter requirements. Includes Command and Control (C2) Enterprise initiatives such as CREWS 2000, ABCCC Divestiture, Improved Data Modem (IDM), Battle Management Command, Control, and Communications (BMC3), Ground Moving Target Indicator (GMTI), Predictive Battlespace Awareness (PBA), Sim Based Acquisition (SBA), Aircraft Re-engining Studies, Battle Management Decision Aids, Security Protection Systems and Joint Service Work Stations (JSWS). The Command &amp; Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) System Architecture Improvements include concept exploration and program definition/risk reduction efforts that support continuous improvements and implementation of C2ISR capabilities to enable a joint global strike task force. This effort includes but is not limited to manned and unmanned platforms, space, data links and advanced BMC3 concepts. These efforts could include but are not limited to the ISR constellation, UAV, data links, Space, AMTI, GMTI and large airborne platform integration efforts.</p> <p>(U) \$68,859 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>This program is in Budget Activity 7 - Operational System Development. Initial operational capability was achieved in Dec 97. Developmental work continues on advanced planning activities and systems upgrades, as well as systems integration and interoperability efforts.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) Aircraft Procurement, AF, BP10 (PE 27581F)</td> <td align="right">250,804</td> <td align="right">293,900</td> <td align="right">332,183</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">4,570,591</td> </tr> <tr> <td>(U) Modifications, BP11 (PE 27581F)</td> <td align="right">24,152</td> <td align="right">33,585</td> <td align="right">80,960</td> <td align="right">37,309</td> <td align="right">26,296</td> <td align="right">45,685</td> <td align="right">31,487</td> <td align="right">34,022</td> <td></td> <td></td> </tr> <tr> <td>(U) Spares, BP16 (PE 27581F)</td> <td align="right">61,270</td> <td align="right">28,021</td> <td align="right">28,419</td> <td align="right">1,839</td> <td align="right">3,187</td> <td align="right">3,887</td> <td align="right">625</td> <td align="right">1,180</td> <td></td> <td align="right">390,425</td> </tr> <tr> <td>(U) Quantity, Joint STARS E-8C Aircraft Proc.</td> <td align="right">1</td> <td align="right">1</td> <td align="right">1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) Aircraft Procurement, AF, BP10 (PE 27581F)	250,804	293,900	332,183	0	0	0	0	0	0	4,570,591	(U) Modifications, BP11 (PE 27581F)	24,152	33,585	80,960	37,309	26,296	45,685	31,487	34,022			(U) Spares, BP16 (PE 27581F)	61,270	28,021	28,419	1,839	3,187	3,887	625	1,180		390,425	(U) Quantity, Joint STARS E-8C Aircraft Proc.	1	1	1													
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																	
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Project 0003			Page 5 of 14 Pages				Exhibit R-2A (PE 0207581F)																																																																				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>	PROJECT <b>0003</b>
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**(U) D. Acquisition Strategy**

Joint STARS Low Rate Initial Production (LRIP) was approved by the Defense Acquisition Board (DAB) in FY93. Acquisition began with the procurement of 2 E-8Cs in FY93, and continued at 2 E-8Cs per year through FY97. Procurement funding continued with 1 E-8C in FY98, 2 E-8Cs in FY99, 1 E-8C in FY00, 1 E-8C in FY01 and 1 E-8C in FY02. Long lead funding for the 17th E-8C is included in the FY 02 PB.

**(U) E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CRP EMD First Flight												
(U) RTIP MS II		*										
(U) RTIP EMD Contract Award					*							
(U) NATAR Sensor Development Start									X			
(U) JIMIS Formalization (Block 10)				*								
(U) STS Development Start					*				X			
(U) SATCOM Development Complete												X
(U) FCTS Delivered												X

\* Denotes completed event  
X Denotes planned event

Note: Beginning in FY02 MP- RTIP funding moves to BPAC 674995, same PE 27581F.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207581F JOINT STARS			PROJECT 0003		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Block 10 (JIMIS) Efforts					3,762		0		0
(U)	Block 20 (CRP, Training & Support Systems) Efforts					17,350		25,786		17,708
(U)	Block 30 (SATCOM, Connectivity, Link 16) Efforts					14,625		19,691		16,467
(U)	Block 40 Multi-Platform RTIP Efforts (funds realigned to BPAC 674995 in FY02 and out, same PE.)					63,491		56,337		0
(U)	Test Efforts					27,138		30,955		27,383
(U)	FCTS Development					6,590		6,500		643
(U)	GATM PreEMD Risk Reduction (Congressional Add)					0		4,847		0
(U)	Indirect SPO Support					0		3,534		3,189
(U)	R&M Enhancements/International Activities (NC3A, CAESAR, etc.)					2,622		100		500
(U)	Spiral Development Activities (for example; Integrated Release, RTOC Upgrades, Various Exercises, DMS, DII COE, Combat Readiness Exploitation Workstation (CREWS 2000), ABCCC Divestiture, IDM, Cyclic Upgrades, etc.)					0		0		2,969
(U)	Total					135,578		147,750		68,859
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
NG**	CPFF	May 97	166,491	166,491	123,518	17,350	0	0	0	140,868
Computer Replacement Program										
NG - STS Phase I	FFP	Dec 00	42,100	42,100	0	0	25,786	17,708	0	43,494
NG - SATCOM EMD	CPFF	May 97	35,074	37,950	8,370	14,625	19,691	16,467		59,153
NG - GATM	Various	Mar 01	4,847	4,847	0	0	4,847	0	157,400	162,247

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE June 2001	
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0207581F JOINT STARS</b>				<b>0003</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Product Development Organizations</u>										
NG - Spiral Dev. Activities	Various	Various	N/A	N/A	0	0	0	2,969		2,969
NG - Multi-Platform Radar	CPFF	May 97	146,384	146,384	22,372	63,491	56,337	0	0	142,200
Tech. Insertion Prog. (Starting in FY02 funding moves to BPAC 674995, same PE.										
NG - Other Dev. Efforts	Various	Various	N/A	N/A	2,339,634	6,384	100	500		2,346,618
NLX Corp - Flight Crew	FFP	SEP 00	11,914	11,914	0	6,590	6,500	643	0	13,733
Training Sys ** Northrop Grumman										
<u>Support and Management Organizations</u>										
Joint Program Office -		N/A	N/A	N/A	0	0	3,534	3,189		6,723
Indirect SPO Ops Support										
<u>Test and Evaluation Organizations</u>										
NG - E-8C Follow-On Test	SS/FFP/CPFF	Aug 96	156,230	156,230	30,625	16,898	17,841	15,400		80,764
Support										
NG - Aircraft Over &	AboveSS/FFP/CPFF	Aug 96	30,596	30,596	5,480	2,308	4,070	3,316		15,174
Tests										
NG - Follow- On Test Support	SS/FFP/CPFF	Aug 96	3,737	3,737	1,259	358	333	338		2,288
- MILSTRIP										
Range Support	Allotment	N/A	N/A	N/A	26,696	1,108	1,165	1,200		30,169
Horizons Tech.	Time and	Various	N/A	N/A	36,136	5,145	5,525	4,708		51,514
(SETA)										
Joint Test Force Support	Allotment	N/A	N/A	N/A	25,863	1,321	2,021	2,421		31,626

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207581F JOINT STARS			PROJECT 0003		
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				2,493,894	108,440	113,261	38,287	157,400	2,911,282
Subtotal Support and Management				0	0	3,534	3,189		6,723
Subtotal Test and Evaluation				126,059	27,138	30,955	27,383		211,535
Total Project				2,619,953	135,578	147,750	68,859	157,400	3,129,540

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>					PROJECT <b>4995</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4995    Multi-Platform RTIP	0	0	79,000	139,000	204,000	238,000	167,000	86,000	Continuing	TBD	
FY03-FY07 budget numbers do not reflect the DoD strategic review results.											
<p>(U) <b><u>A. Mission Description</u></b>            The Multi-Platform Radar Technology Insertion Program (MP-RTIP) program is the result of a restructuring of the Joint STARS Radar Technology Insertion Program (RTIP), formerly a Pre-Planned Product Improvement to Joint STARS. MP-RTIP will deliver enhanced Wide Area Surveillance (WAS) system capabilities to the warfighter, provide for a robust Global Hawk reconnaissance capability, and enable NATO's Alliance Ground Surveillance (AGS) program. This WAS system capability will allow commanders to conduct wide area surveillance to detect, locate, classify, track, and monitor moving targets and provide target information to assigned direct aerospace and ground weapons systems. Wide-Area surveillance is required to monitor the movement and disposition of enemy forces and for use in resource prioritization, force allocation and Intelligence Preparation of the Battlefield at Army, Navy and Air Force Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) elements. To that end, MP-RTIP will include design of a modular, scalable two-dimensional active electronically scanned array (2D-AESA) radar, and development, fabrication, and test of MP-RTIP radars suitable for future integration on various airborne platforms. Specifically, this modular, scalable radar, when integrated on a suitable WAS airborne platform, must deliver mission capability as reflected in the validated RTIP Operational Requirements Document (ORD) by 2012. Although the users' need date for an RTIP capability remains 2010; the user has accepted the 2012 delivery date. The radar must meet the US sensor commitment to NATO in 2007, and when integrated on an unmanned air vehicle, provide enhanced Global Hawk (GH) capability. The MP-RTIP program includes concept exploration, technology development, system development/demonstration, and spiral development efforts supporting continuous improvements and implementation of Command &amp; Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force. These efforts include but are not limited to manned and unmanned platforms, space, data links, combat identification, and advanced battle management command, control, and communications (BMC3) concepts.</p>											
(U) <u>FY 2000 (\$ in Thousands)</u>											
(U) \$0                      RTIP funding prior to FY02 reported in BPAC 670003, same PE.											
(U) \$0                      Total											
(U) <u>FY 2001 (\$ in Thousands)</u>											
(U) \$0                      RTIP funding prior to FY02 reported in BPAC 670003, same PE.											
(U) \$0                      Total											

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

June 2001

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

**07 - Operational System Development**

**0207581F JOINT STARS**

**4995**

(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

- (U) \$75,340 Multi-Platform RTIP radar design and development for Wide Area Surveillance (WAS), Global Hawk target platforms, and NATO AGS.
- (U) \$1,760 Test Efforts (includes Operator-In-The-Loop [OITL]; Joint Test Force Support; AFOTEC Support)
- (U) \$1,300 SPO Operations
- (U) \$600 Future Studies/Spiral Development--includes concept exploration, program definition/risk reduction, and spiral development efforts supporting continuous improvements and implementation of Command & Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force. These efforts include but are not limited to manned and unmanned platforms, space, data links, combat identification, and advanced battle management command, control, and communications (BMC3) concepts.
- (U) \$79,000 Total

(U) **B. Project Change Summary**

In an Acquisition Decision Memorandum dated 11 Dec 00, the Multi Platform-Radar Technology Insertion Program (MP-RTIP) was created from the Radar Technology Insertion Program ( RTIP) to explore alternative platforms for the RTIP Wide Area Surveillance radar. The MP-RTIP program is the result of a restructuring of the Joint Stars RTIP program, formerly a Pre-Planned Product Improvement to Joint Stars.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) PE 35206F/BPAC 674819			9,000	10,000	7,000	2,000				TBD
(U) PE 35205F/BPAC 674799				17,000	40,000	13,000	1,000			TBD
(U) Other APPN										
Multi Platform-Common Data Link ( PE 0305206F)										
GLOBAL HAWK (PE 0305205F)										

(U) **D. Acquisition Strategy**

The MP-RTIP program is currently planning for five manned WAS aircraft as well as 35 Global Hawk air vehicles to receive the 2D-AESA radars. Low Rate Initial Production (LRIP) quantity, if E-8C is retrofitted, is one sensor kit and seven sensors for Global Hawk. Exit criteria will be established at MS B that must be satisfied prior to proceeding with LRIP. All other procurement activities for all platforms will be formally updated at MS B in FY03.

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>	PROJECT <b>4995</b>
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(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) MP-RTIP PHASE 1 AWARD					*							
(U) MP-RTIP PHASE 1 DEFINITIZED							*					
(U) MP-RTIP INTEGRATED BASELINE REVIEW							X					
(U) RADAR REQUIREMENTS REVIEW									X			
(U) RADAR FUNCTIONAL REVIEW										X		
(U) MP-RTIP PLATFORM DECISION												X

\* Denotes completed event  
X Denotes planned event

Note: Platform Decision scheduled for April 02 will determine which Wide Area Surveillance airframe MP-RTIP will go on

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>			PROJECT <b>4995</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>
(U)	MP-RTIP									75,340
(U)	Test Efforts (OITL, JTF, AFOTEC)									1,760
(U)	SPO Operations									1,300
(U)	Future Studies/Spiral Development									600
(U)	Total									79,000
MP-RTIP's funding was a part of Joint Stars BPAC 674995 until FY02, PE remains the same 27581F. NATO AGS Radar within the restructured MP-RTIP program continues effort previously begun under JSTARS RTIP program. NATO AGS Radar is not a New Start.										
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Northrop Grumman-Multi	CPAF	DEC 00						75,340	Continuing	TBD
Platform-Radar Technology Insertion Program (RTIP funding prior to FY02 reported in BPAC 670003, same PE)										
MIT/Lincoln Labs	Various	Various	N/A	N/A				600	Continuing	TBD
<u>Support and Management Organizations</u>										
Program Office Support	N/A	N/A	N/A	N/A				1,300	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
OITL	Allotment	N/A	N/A	N/A				1,000	Continuing	TBD
JTF Support	Allotment	N/A	N/A	N/A				60	Continuing	TBD
AFOTEC Support	Allotment	N/A	N/A	N/A				700	Continuing	TBD
Project 4995					Page 13 of 14 Pages			Exhibit R-3 (PE 0207581F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207581F JOINT STARS			PROJECT 4995		
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development							75,940	TBD	TBD
Subtotal Support and Management							1,300	TBD	TBD
Subtotal Test and Evaluation							1,760	TBD	TBD
Total Project							79,000	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207590F Seek Eagle					PROJECT 4037		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4037	SEEK EAGLE Certifications	22,093	19,294	17,833	17,273	21,403	24,091	22,279	19,417	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Air Force has a variety of combat aircraft and numerous stores (munitions, missiles, fuel tanks, electronic countermeasures pods, etc.). Aircraft carry these stores in countless different loading combinations determined by operational scenarios, missions, and tactics. Loading configurations change as operational plans and tactics change, and as new aircraft and stores are developed and produced. Before operational use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release), and must verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes these certifications through any combination of ground and flight testing, wind tunnel testing, modeling and simulation, and engineering analysis. Over 700 aircraft-store combinations exist to be certified, with new ones added on a regular basis. Depending upon the complexity, certification takes from months to years. The SEEK EAGLE program is also responsible for insertion of new and emerging technologies into the SEEK EAGLE process and providing resources for sustainment of a viable Air Force aircraft-store certification capability. Electronic Technical Orders are developed through the Combat Weapons Delivery Software (CWDS), creating cost savings by eliminating paper technical orders. SEEK EAGLE funds are currently budgeted to support certification for new weapons programs including Wind Corrected Munitions Dispenser (WCMD), Joint Direct Attack Munition (JDAM), Joint Air to Surface Standoff Missile (JASSM), Joint Standoff Weapon (JSOW), AIM-9X, AIM-120 C5 (AMRAAM), and many other inventory stores on inventory aircraft. Planning and budgeting estimations are in progress for future certifications of weapons on F-22 and the Joint Strike Fighter (JSF).</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$1,645 Continue development of F-22 data and engineering models to use for follow-on F-22 weapons certification</p> <p>(U) \$2,835 Conduct various automation projects and automated Technical Orders/mission planning projects using CWDS</p> <p>(U) \$2,124 Continue/complete various technology improvement projects and aircraft load/separation prediction capabilities using Applied Computational Fluid Dynamics (ACFD)</p> <p>(U) \$15,489 Conduct various aircraft-store certifications on USAF fighter and bomber aircraft</p> <p>(U) \$22,093 Total</p> <p>Note: The following net transaction is not reflected in the FY00 program total: BTR=-103K. This transaction is reflected in other sections of the R-Docs where an FY00 total is shown.</p>											
Project 4037			Page 1 of 6 Pages				Exhibit R-2 (PE 0207590F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																																																		
		June 2001																																																		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																																																		
<b>07 - Operational System Development</b>	<b>0207590F Seek Eagle</b>	<b>4037</b>																																																		
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$1,600 Continue development of F-22 data and engineering models to use for follow-on F-22 weapons certification</p> <p>(U) \$2,971 Conduct various automation projects and automated Technical Orders/mission planning projects using CWDS</p> <p>(U) \$2,442 Continue/complete various technology improvement projects and aircraft load/separation prediction capabilities using ACFD</p> <p>(U) \$12,281 Conduct various aircraft-store certifications on USAF fighter and bomber aircraft</p> <p>(U) \$19,294 Total</p> <p>Note: The following net transactions are not reflected in the FY01 program total: BTR=-293K and SBIR=-717K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$1,655 Continue development of F-22 data and engineering models to use for follow-on F-22 weapons certification</p> <p>(U) \$3,108 Conduct various automation projects and automated Technical Orders/mission planning projects using CWDS</p> <p>(U) \$2,551 Continue/complete various technology improvement projects and aircraft load/separation prediction capabilities using ACFD</p> <p>(U) \$10,519 Conduct various aircraft-store certifications on USAF fighter and bomber aircraft</p> <p>(U) \$17,833 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>The RDT&amp;E Budget Activity is 7, Operational Systems Development, because the program supports fielded systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="width:10%; text-align: center;"><u>FY 2000</u></th> <th style="width:10%; text-align: center;"><u>FY 2001</u></th> <th style="width:10%; text-align: center;"><u>FY 2002</u></th> <th style="width:20%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">22,851</td> <td style="text-align: center;">19,472</td> <td style="text-align: center;">17,799</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">23,133</td> <td style="text-align: center;">19,472</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: center;">-156</td> <td style="text-align: center;">-136</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-661</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: center;">-133</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-90</td> <td style="text-align: center;">-42</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: center;">34</td> <td></td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	22,851	19,472	17,799	TBD	(U) Appropriated Value	23,133	19,472			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-156	-136			b. Small Business Innovative Research	-661				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-133				e. Rescissions	-90	-42			(U) Adjustments to Budget Years Since FY 2001 PBR			34	
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																
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Project 4037	Page 2 of 6 Pages	Exhibit R-2 (PE 0207590F)																																																		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0207590F Seek Eagle			4037				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>			<u>Total Cost</u>				
(U)	Current Budget Submit/FY 2002 PBR	22,093	19,294	17,833			TBD				
(U)	<u>Significant Program Changes:</u>										
	NONE										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Proc of Ammunition, AF*										
(U)	- P-1 Line JDAM	0	0	147	302	145	0	0	105	Continuing	970
(U)	- P-1 Line WCMD	0	0	0	0	135	0	0	97	Continuing	4,146
(U)	Missile Procurement, AF*								0		
(U)	- P-1 Line JSOW	1,150	0	1,032	0	1,010	0	1,013	0	Continuing	22,763
(U)	- P-1 Line AIM-120 C5 (AMRAAM)	0	607	0	0	0	0	0	0	Continuing	15,137
(U)	- P-1 Line AIM-9X, (Sidewinder)	0	2,892	5,378	1,760	0	0	0	0	Continuing	TBD
(U)	- P-1 Line JASSM	0	0	744	3,754	1,501	3,003	0	2,998	Continuing	12,000
	* Note: The SEEK EAGLE procurement dollars shown above are appropriated in each weapon's P-1 line.										
<b>(U) E. Acquisition Strategy</b>											
Budget authorization for procurement funds are given directly to the weapon system program offices, who then procure the required certification test articles through the weapon production contract.											
<b>(U) F. Schedule Profile</b>											
		<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207590F Seek Eagle</b>					PROJECT <b>4037</b>			
<b>(U) F. Schedule Profile Continued</b>													
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) JDAM									X	X	X	X	
(U) AIM-120 C5 (AMRAAM)					*	*	*	X					
(U) AIM-9X (Sidewinder)					*	*	*	X	X	X	X	X	
(U) JSOW	*	*	*	*					X	X	X	X	
(U) JASSM									X	X	X	X	
<p>Note: The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. Each aircraft-store configuration requested by the user goes through the SEEK EAGLE process by the designated user priority.</p> <p>* = Completed Event</p> <p>X = Planned hardware buy in support of upcoming certification activities.</p>													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207590F Seek Eagle			PROJECT 4037		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Process Sustainment					2,124		2,442		2,551
(U)	F-22 Data & Engineering Models					1,645		1,600		1,655
(U)	Engineering Analysis					4,000		4,200		4,400
(U)	Flight Testing					8,236		6,506		4,194
(U)	Wind Tunnel Testing					2,428		700		1,000
(U)	Other					2,835		2,971		3,108
(U)	- Ballistic/ Safe Escape Analysis									
(U)	- Tech Order/P.C. Floppy Disk									
(U)	- Loading Process Development/Verification									
(U)	Mission Support					825		875		925
(U)	Total					22,093		19,294		17,833
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin	C/CPFF	Jul 98	15,648	15,648	1,900	1,645	1,600	1,655	8,848	15,648
Leigh Aerosystems	FFP	Jan 00	943	943	943	0	0	0	0	943
<u>Support and Management Organizations</u>										
Mission Support	PO/REO	Continuous	N/A	N/A	9,067	825	875	925	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test Wing	PO/REO	Continuous	N/A	N/A	89,777	8,510	9,158	8,404	Continuing	TBD
AEDC	PO/REO	Continuous	N/A	N/A	13,738	2,428	700	1,000	Continuing	TBD
Various	PO/REO	Continuous	N/A	N/A	38,392	8,685	6,961	5,849	Continuing	TBD

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0207590F Seek Eagle</b>		PROJECT <b>4037</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	2,843	1,645	1,600	1,655	8,848	16,591
Subtotal Support and Management	9,067	825	875	925	TBD	TBD
Subtotal Test and Evaluation	141,907	19,623	16,819	15,253	TBD	TBD
Total Project	153,817	22,093	19,294	17,833	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	20,209	17,859	25,345	22,144	20,458	18,459	13,495	9,705	Continuing	TBD	
1008 National Air and Space Warfare Model (NASM)	14,749	12,196	17,180	14,392	12,641	11,593	6,462	2,527	Continuing	TBD	
4567 Joint Modeling and Simulation System (JMASS)	5,460	5,663	6,940	6,426	6,464	5,484	5,619	5,734	Continuing	TBD	
5004 Joint Model Transition (JMT)	0	0	395	405	413	422	424	430	Continuing	TBD	
5005 Executive Agent For Air /Space Natural Environment	0	0	830	921	940	960	990	1,014	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

\*FY03-07 budget numbers do not reflect the DoD Strategic Review Results  
 Note: Prior to FY02, Joint Model Transition (formerly known as Legacy Model Transition) and Executive Agent For Air/Space Natural Environment were executed in PE 0308601F - Modeling & Simulation Support. This action was taken to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.

(U) **A. Mission Description**  
 Provides RDT&E funding for major USAF Modeling and Simulation efforts such as the National Air and Space [Warfare] Model (NASM)-the air and space element of the Joint Simulation System (JSIMS); and the Joint Modeling and Simulation System (JMASS). JSIMS will be the sole readiness training simulation used by all CINCs, Services, NAFs and at all simulation centers to train Joint Force Commanders, Joint Task Force staffs, Components and their staffs, including Joint Force Air Component Commanders and Air Operations Center personnel. JMASS provides High Level Architecture (HLA)-compliant architecture for engagement level simulations.

This PE also includes funding to support an organized growth and management of modeling and simulation (M&S) systems as the Air Force transitions from numerous legacy models and simulations to emerging DoD standard models and architecture. Numerous models currently exist and are being modified or developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as the Legacy Model Transition) funds the upgrades to selected R&D models through a board process. The selection process allows the board to influence the direction of legacy model

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**June 2001**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207601F USAF Modeling and Simulation**

(U) **A. Mission Description Continued**

development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance. The Executive Agent for Air & Space Natural Environment (ASNE) serves the M&S community as subject matter experts for ASNE M&S databases (including relevant standards), dynamic processes, and other applications. This enables the major Joint simulation systems (i.e., Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and Joint and Service component programs (i.e., Joint Strike Fighter (JSF), Ballistic Missile Defense Organization (BMDO), etc.) to represent the air and space natural environment rapidly, thoroughly, and consistently in a manner that promotes cost-effectiveness, ready access, interoperability, re-use, and confidence. Primary users will be unified commanders and service components for use in joint or service-specific exercises involving air, ground, sea, and space campaigns.

(U) **B. Budget Activity Justification**

Initiated in FY 94, this program is in budget activity 7 - Operational System Development, Research Category because it provides RDT&E funding for major USAF Modeling and Simulation efforts. These funds also support development activities for the AF as executive agent for air/space natural environment and continued development and integration of AF models in the Joint Model Transition (JMT) program.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	19,299	17,624	25,345	
(U) Appropriated Value	21,249	18,024		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-40			
b. Small Business Innovative Research	-635			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-282			
e. Rescissions	-83	-165		
(U) Adjustments to Budget Years Since FY 2001 PBR				
(U) Current Budget Submit/FY 2002 PBR	20,209	17,859	25,345	TBD

(U) **Significant Program Changes:**

Significant Program Changes: In FY00, funding from PE 0604256F, Threat Simulator Development, was transferred into PE 0207601F in FY00 and FY01 for the Joint Modeling and Simulation (JMASS) program development.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>					PROJECT <b>1008</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
1008 National Air and Space Warfare Model (NASM)	14,749	12,196	17,180	14,392	12,641	11,593	6,462	2,527	Continuing	TBD	
<p>FY03-FY07 budget numbers do not reflect DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>            This program provides funds for Air Force and Joint wargaming architecture and model development, primarily in support of battlestaff training, education, and military operations. New simulation federate components are being developed by the NASM program to replace the existing Air Force standard Air Warfare Simulation (AWSIM) within the JSIMS system. NASM will expand the use and role of modeling and simulation (M&amp;S) in support of operational and acquisition decision making, and increase the interoperability between Air Force and joint efforts such as Joint Synthetic Battlespace (JSB). NASM includes, but is not limited to, representation of the full range of AFM 1-1 missions to meet the needs of USAF MAJCOMs and Unified/Specified Command air components to train Air Component Commanders and their battle staffs. Additionally, NASM provides the JSIMS Civil Environment for accurate portrayal of strategic and cascading effects. Also, NASM is providing additional common components under JSIMS Alliance resources. Primary users will be the unified command air components, Commanders in Chief (CINCs), Joint Forces Air Component Commander's (JFACC), and Service components, as supported by the C2 Technology Interoperability Group, KASC, and WPC for use in joint exercises involving air, ground, and sea campaigns.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$9,205 Continued development of specific air objects to support JSIMS architecture            (U) \$3,621 Continued NASM integration effort and operate the program management office            (U) \$1,923 Upgraded Synthetic Theater Operations Research Model (STORM) and Powerscene model            (U) \$14,749 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$8,976 Continue development of specific air objects to support JSIMS architecture            (U) \$2,820 Continue NASM integration effort and operate the program management office            (U) \$400 Upgrade Synthetic Theater Operations Research Model (STORM).            (U) \$12,196 Total</p> <p>The following net transactions are not reflected in the FY01 program total: BTR=\$2,165K and SBIR=- \$612K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>											

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																																																																																								
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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$14,506 Continue development of specific air objects to support JSIMS architecture.</p> <p>(U) \$2,674 Continue NASM integration effort and operate the program management office</p> <p>(U) \$17,180 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>FY2001 Congressional Plus-up of \$400K for STORM</p> <p>FY2002-2005 JSIMS \$21.6M added to align NASM program to JSIMS integrated master schedule to meet IOC requirements.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Continuing</td> <td>TBD</td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Continuing</td> <td>TBD</td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b></p> <p>NASM provides the Air and Space software components of the Joint Simulation System (JSIMS). Resources are reviewed and measured against an Alliance program baseline, with the Earned Value and performance measurement reporting against the baseline accomplished on a monthly basis. The contract was selected by source selection and is a Cost Plus Award Fee (CPAF).</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="3"><u>FY 2000</u></th> <th colspan="3"><u>FY 2001</u></th> <th colspan="3"><u>FY 2002</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) Version 1.0 VRM Ready-for-Test</td> <td></td> <td>X</td> </tr> <tr> <td>(U) IOC Version 1.0 Release 1QFY03</td> <td></td> </tr> <tr> <td>(U) Version 2.0 VRM Ready-for-Test 1QFY03</td> <td></td> </tr> <tr> <td>(U) Version 2.0 Release 2QFY04</td> <td></td> </tr> </tbody> </table> <p>NASM development schedule is aligned with the Joint Simulation System (JSIMS) Acquisition Program Baseline (APB) development schedule required to achieve Initial Operational Capability (IOC) in FY03 and Full Operational Capability (FOC) in FY05.</p>										<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E									Continuing	TBD	(U) Other APPN									Continuing	TBD		<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Version 1.0 VRM Ready-for-Test												X	(U) IOC Version 1.0 Release 1QFY03													(U) Version 2.0 VRM Ready-for-Test 1QFY03													(U) Version 2.0 Release 2QFY04																		
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Project 1008			Page 4 of 15 Pages			Exhibit R-2A (PE 0207601F)																																																																																																																									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation			PROJECT 1008			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Software development					9,205		8,976		14,506	
(U)	Program Management/Contractor Support					3,621		2,820		2,674	
(U)	Congressional Add; Synthetic Theater Operations Research Model (STORM) upgrade					1,923		400		0	
(U)	Total					14,749		12,196		17,180	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon (NASM)	TRN	3 Mar 97	74,541	74,541	17,135	9,055	8,976	14,506	Continuing	TBD
	Raytheon (AWSIM/R)	TRN	7 Apr 94	9,876	9,876	11,454	0	0	0	0	11,454
	Hughes (AWSIM/R)	TRN	2 Jun 94	4,676	4,676	4,059	0	0	0	0	4,059
	TRW (AFSOM)	TRN	12 Dec 97	39	39	39	0	0	0	0	39
	TRW (JSB)	Contract Mod	1 Nov 00	150	150	0	150	0	0	0	150
	SysSimSolutions (STORM)	Task Order	11 Aug 00	1,623	1,623	0	1,223	400	0	0	1,623
	Powerscene	Contract	Sep 00	700	700	0	700	0	0	0	700
<u>Support and Management Organizations</u>											
	Tech Eng Mgt Spt (TEMS)	Del Order	Various	15,413	15,413	8,082	2,079	1,769	1,282	Continuing	TBD
	/ITSP										
	MITRE	Contract Mod	Various	13,200	13,200	5,869	1,410	775	1,142	Continuing	TBD
	Other*	Various	Various	19,180	19,180	17,112	132	276	250	Continuing	TBD
*Includes Prototype Contracts											
<u>Test and Evaluation Organizations</u>											

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>		PROJECT <b>1008</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	32,687	11,128	9,376	14,506	TBD	TBD
Subtotal Support and Management	31,063	3,621	2,820	2,674	TBD	TBD
Subtotal Test and Evaluation						
Total Project	63,750	14,749	12,196	17,180	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation					PROJECT 4567	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4567	Joint Modeling and Simulation System (JMASS)	5,460	5,663	6,940	6,426	6,464	5,484	5,619	5,734	Continuing	TBD
FY03-FY07 budget numbers do not reflect DoD strategic review results.											
<b>(U) A. Mission Description</b>											
The Joint Modeling & Simulation System (JMASS) is a simulation support environment for the development, configuration, execution, and analysis of high fidelity, repeatable simulations with re-usable models-focus is tactical/engagement level simulations with the present concentration on electronic combat. JMASS is a full system software implementation of a modern object based simulation architecture. JMASS provides users with the tools to: Develop objects, assemble these objects into models, configure the models in a complete simulation, execute the simulation, and post process the simulation data. JMASS tools assist users in developing fully compliant objects; users concentrate on the models and analysis, not computer science.											
<b>(U) FY 2000 (\$ in Thousands)</b>											
(U)	\$1,989	JMASS Model Space Object (MSO) development (computer representations of individual DoD weapon systems)									
(U)	\$1,500	Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)									
(U)	\$1,651	JMASS Model Integration with Other Service Simulations									
(U)	\$320	JMASS Customer Support									
(U)	\$5,460	Total									
<b>(U) FY 2001 (\$ in Thousands)</b>											
(U)	\$3,313	JMASS Legacy Model Space Object (MSO) transition									
(U)	\$2,100	Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)									
(U)	\$250	JMASS Integration with Other Service Simulations									
(U)	\$5,663	Total									
<b>(U) FY 2002 (\$ in Thousands)</b>											
(U)	\$4,840	JMASS Model Space Object (MSO) transition									
(U)	\$2,100	Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)									
(U)	\$6,940	Total									
Project 4567			Page 7 of 15 Pages					Exhibit R-2A (PE 0207601F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																																																											
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>			PROJECT <b>4567</b>																																																																																										
<p>(U) <b><u>B. Project Change Summary</u></b>                  PE 64256F, Threat Simulator Development, transferred \$2.1M in FY00 and FY01 for JMASS Joint Program Development.</p> <p>Also, JMASS funding was increased \$12.59M from FY02-FY07 to develop Blue and Threat system models and transition legacy functionality into the JMASS system.</p>																																																																																																		
<p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td> </tr> <tr> <td>(U) PE64256F, Threat Simulator Development Project 3321 (EW Test Resources)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td align="center">Continuing</td><td align="center">TBD</td> </tr> </tbody> </table>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN											(U) PE64256F, Threat Simulator Development Project 3321 (EW Test Resources)									Continuing	TBD																																								
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(U) PE64256F, Threat Simulator Development Project 3321 (EW Test Resources)									Continuing	TBD																																																																																								
<p>(U) <b><u>D. Acquisition Strategy</u></b>                  All major contracts for JMASS model development will be awarded after full and open competition.</p>																																																																																																		
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4"><u>FY 2000</u></th> <th colspan="4"><u>FY 2001</u></th> <th colspan="2"><u>FY 2002</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) Milestone 2</td> <td></td><td></td><td align="center">X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Contract Award</td> <td align="center">X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Initial Delivery</td> <td></td><td></td><td></td><td></td><td></td><td align="center">X</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) IOC</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td align="center">X</td><td></td><td></td><td></td> </tr> <tr> <td>(U) Legacy Functionality (Phase 1)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td align="center">X</td><td></td><td></td> </tr> </tbody> </table>											<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			1	2	3	4	1	2	3	4	1	2	3	4	(U) Milestone 2			X										(U) Contract Award	X												(U) Initial Delivery						X							(U) IOC									X				(U) Legacy Functionality (Phase 1)										X		
	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>																																																																																									
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																						
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(U) Legacy Functionality (Phase 1)										X																																																																																								
Project 4567			Page 8 of 15 Pages				Exhibit R-2A (PE 0207601F)																																																																																											



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>					PROJECT <b>5004</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
5004 Joint Model Transition (JMT)	0	0	395	405	413	422	424	430	0	0	
<p>*FY03-07 budget numbers do not reflect the DoD Strategic Review Results</p> <p>Note: Prior to FY02, Joint Model Transition (formerly known as Legacy Model Transition) was executed in PE 0308601F - Modeling &amp; Simulation Support. This action was taken to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <b><u>A. Mission Description</u></b>            Numerous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as Legacy Model Transition) supports the development and upgrade of R&amp;D models selected through a board process. The selection process allows the board to influence the direction of model development and integration for the modeling and simulation community. Emphasis is placed on joint applicability and acceptance.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$156 Develop and integrate service analysis models into next generation joint models.            (U) \$157 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).            (U) \$82 Develop comprehensive Digital System Models (DSMs) to support Analysis of Alternatives (AoAs) for potential development programs. DSMs digitally represent weapon system platforms and are used to evaluate existing platform capabilities against new threats, ability to upgrade weapon systems to satisfy new requirements, etc. Results of AoAs using DSMs are used as a decision tool to determine future weapon system developments and/or upgrades.            (U) \$395 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>            Project transferred from PE 0308601F in FY02</p>											
Project 5004			Page 10 of 15 Pages				Exhibit R-2A (PE 0207601F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>			PROJECT <b>5004</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
<b>(U) D. Acquisition Strategy</b>											
The funds are provided to the Office of Aerospace Studies (OAS), GSA-Heartland Contract, and the Sherikon Corp for the development of the Next Generation Mission Model (NGMM), Joint Model Transition Plan, and Analysis of Alternatives (AoA) studies for analysis models and digital system models. AF/XOCA will oversee a prioritization process for contract selection and development effort.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U) Joint Accreditation Support Activity (Phase 1)								X			
(U) Joint Accreditation Support Activity (Phase 2)										X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation			PROJECT 5004		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Contractor Support				0		0			316
(U)	Program Management Suppor				0		0			32
(U)	Travel				0		0			47
(U)	Total				0		0			395
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Various	Various	Various						395	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development								395	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project								395	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>					PROJECT <b>5005</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5005	Executive Agent For Air /Space Natural Environment	0	0	830	921	940	960	990	1,014	0	0
<p>*FY03-07 budget numbers do not reflect the DoD Strategic Review Results                      Note: Prior to FY02, Executive Agent For Air/Space Natural Environment was executed in PE 0308601F - Modeling &amp; Simulation Support. This action was taken to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <b><u>A. Mission Description</u></b>                      Air Force Director of Weather (AF/XOW) is designated as the DoD Modeling and Simulation Executive Agent (MSEA) for Air and Space Natural Environment (ASNE). This program provides funds for MSEA joint wargaming architecture, data base, model development support for Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and other joint M&amp;S program offices. Primary users will be unified commanders and service components for use in joint exercises involving air, ground, sea, and space campaigns.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$135 Space Weather Prototyping and Integration                      (U) \$536 Production Center Integration                      (U) \$159 Air/Land Battlefield Integration                      (U) \$830 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>                      Project transferred from PE 38601F in FY02</p>											
Project 5005			Page 13 of 15 Pages				Exhibit R-2A (PE 0207601F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>				PROJECT <b>5005</b>		
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
<b>(U) D. Acquisition Strategy</b>											
The Executive Agent for Air & Space Natural Environment will develop, prototype, and integrate the current suite of production and research grade models for Service and Joint distributed simulation models. The majority of efforts are executed and managed through the DoD laboratory system.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U) ESG IOC										X	
(U) CSSMS FOC											X
(U) Warfighter Weather Effects IOC									X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation			PROJECT 5005			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	Software Development				0		0			425	
(U)	Lab Overhead/Management				0		0			90	
(U)	Prototyping				0		0			290	
(U)	Travel				0		0			25	
(U)	Total				0		0			830	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Various	Various	Various					830	Continuing	TBD	
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development								830	TBD	TBD
	Subtotal Support and Management										
	Subtotal Test and Evaluation										
	Total Project								830	TBD	TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
<b>07 - Operational System Development</b>		<b>0207605F Wargaming and Simulation Centers</b>								<b>2888</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2888	Theater Air Command & Control Sim Facility (TACCSF)	18,826	7,802	5,033	5,316	5,447	6,590	6,728	6,870	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	Continuing	TBD

FY03-FY07 budget numbers do not reflect the Dod strategic review results.

**(U) A. Mission Description**

Funding provided for the Air Force's premier warfighter-in-the-loop simulation facility operated at Kirtland AFB, NM by Det 4, Air Force Command and Control Test and Integration Group (AFC2TIG). TACCSF's mission is to provide advanced distributed simulation to the warfighter for improving theater aerospace warfare systems and concepts of operation, training, , and development of new systems and CONOPS. TACCSF is used by the AC2ISRC and other customers who require high-fidelity battle management, command, control, communications, computer, and intelligence (BMC4I) simulation for establishing system requirements, assessing interoperability, integrating actual C4I and weapon systems, and conducting joint test and evaluation. TACCSF performs the upgrade of a complex system consisting of 23 Air Force and Army weapon system simulators (containing over 2 million lines of software code), 18 internal computer networks, 36 mainframe computers, and 62 tactical warfighter-in-the-loop simulator consoles. These systems interoperate with joint service simulators and live fielded equipment via wide-area networks using state-of-the-art voice and data link communications over multiple long-haul communication circuits.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$14,000 Provided one-time funding to move TACCSF R&D mission into new facility; included new computers, virtual flight simulators, multi-ship simulators, and instructor control white-cell consoles for R&D distributed
- (U) \$3,477 Continued to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development.
- (U) \$1,000 Continued to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&A of core systems.
- (U) \$249 Provided program management
- (U) \$100 Continued communications connectivity between TACCSF and various other M&S facilities.
- (U) \$18,826 Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
<b>07 - Operational System Development</b>	<b>0207605F Wargaming and Simulation Centers</b>	<b>2888</b>			
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>					
(U) \$1,948	Continue to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development.				
(U) \$1,500	Continue to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&A of core systems.				
(U) \$254	Provides program management.				
(U) \$100	Continue communications connectivity between TACCSF and various other M&S facilities.				
(U) \$4,000	Continue work on Congressionally directed National Infrastructure Simulation & Analysis Consortium (NISAC) at Sandia National Labs and Los Alamos National Labs.				
(U) \$7,802	Total				
The following net transactions are not reflected in the FY01 program total: BTR=-\$37K and SBIR=-\$241K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.					
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U) \$4,174	Continue to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development.				
(U) \$500	Continue to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&A of core systems.				
(U) \$259	Provides program management.				
(U) \$100	Continue communications connectivity between TACCSF and various other M&S facilities.				
(U) \$5,033	Total				
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in budget activity 7 - Operation System Development, because it continues development and upgrades of the Air Force's premier warfighter-in-the-loop simulation facility.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)		5,192	3,874	5,033	
(U) Appropriated Value		19,192	7,874		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions					
Project 2888		Page 2 of 4 Pages		Exhibit R-2 (PE 0207605F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207605F Wargaming and Simulation Centers</b>				PROJECT <b>2888</b>			
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>				<u>Total Cost</u>	
	b. Small Business Innovative Research			-574							
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram			395							
	e. Rescissions			-187	-72						
(U)	Adjustments to Budget Years Since FY 2001 PBR										
(U)	Current Budget Submit/FY 2002 PBR			18,826	7,802	5,033				TBD	
(U)	<u>Significant Program Changes:</u>										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
<b>(U) E. Acquisition Strategy</b>											
Provides funds for development, upgrade, and maintenance of virtual simulators. Simulators include Airborne Warning and Control Systems (AWACS), Joint Surveillance Attack Radar Systems (JSTARS), Advanced Airborne Sensor, Airborne Laser (ABL), TSQ-73 Fire Direction Center, PATRIOT and HAWK battalion and batteries, and the F-15C to name a few.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U)	Develop Core Structure (Phase 1: Completed 1QFY99)			*				*		X	
(U)	Develop & Integraste DIS & HLA (Phase 1: Completed 3QFY99)					*		X			
(U)	Unit Test & Evaluation Integration (Phase 1: Completed 4QFY99)						*		X		X
(U)	DSI Service Fee (Annual: 4QFYxx)						*		X		X
(U)	Upgrade AWACS & MCE software & test (Phase I: Completed 4QFY99)						*		X		
Project 2888				Page 3 of 4 Pages				Exhibit R-2 (PE 0207605F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207605F Wargaming and Simulation Centers			PROJECT 2888		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Software Development					3,842		5,952		4,183
(U)	Contractor Support					14,531		1,500		500
(U)	Program Management Support					453		350		350
(U)	Total					18,826		7,802		5,033
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
		1 Jan 90	Continuing	Continuing	5,272	18,826	7,802	5,033	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>					5,272	18,826	7,802	5,033	TBD	TBD
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					5,272	18,826	7,802	5,033	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208006F Mission Planning Systems					PROJECT 3858	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3858	Air Force Mission Support System (AFMSS)	17,136	20,565	16,904	17,154	17,499	17,862	17,900	18,051	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 The Mission Planning System program was established in 1990 to consolidate mission planning system development efforts into a single unit-level mission planning system. This program maintains and preserves combat capability on existing legacy planning systems which will migrate into a USAF wide standard mission planning system known as the Air Force Mission Support System (AFMSS). Integrating military and commercial software on Commercial-Off-The-Shelf (COTS) hardware, AFMSS encompasses evolutionary software and hardware development in an open systems architecture. AFMSS today consists of the Mission Planning System (MPS), a UNIX-based system; the Portable Flight Planning Software (PFPS), a personal computer (PC)-based system; and the Joint Mission Planning System (JMPS), which is the next generation PC-based system.

The MPS provides comprehensive mission planning tools to conduct missions ranging from day-to-day training, peace time operations/exercises to complex operations supporting conventional and nuclear armed conflict. The MPS design is centered around an open architecture, using standard protocols and interfaces, COTS hardware and software. The MPS currently or will support the following aircraft and associated weapons: B-1, B-2, B-52, F-15, F-16, F-117, F-22, U-2, AGM-130, AGM-142, JDAM, JSOW, WCMD, ABL, JASSM, MALD, Global Hawk, and Predator. Platforms use tailored software called Aircraft/Weapon/Electronics (A/W/E) that integrate with the MPS core software to specialize the software for their mission.

The PFPS provides flight planning tools that support day-to-day training, peace time operations/exercises, and conventional armed conflict. The PFPS design is based on single user PCs. The user interface is Windows 95 and Windows NT. The PFPS currently or will support the following aircrafts: F-16, MC-130, EC-130, HC-130H/N/P, AC-130, E-3, E-8, C-130E/H/J, LC-130, WC-130, C-27, C-17, E-4, T-38, C-141, RC-135, KC-10, KC-135R/E, C-5, C-9, A-10, MH-53, MH-47, AH/MH-6J, and MH/HH-60.

The JMPS is a continuation effort of the AFMSS MPS and PFPS directed at merging the AFMSS and the Navy's Tactical Automated Mission Planning System (TAMPS), to form a single family of systems achieving Global Command and Control System (GCCS) compatibility through compliance with the Defense Information Infrastructure and Common Operating Environment (DII/COE).

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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

June 2001

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0208006F Mission Planning Systems**

PROJECT

**3858****(U) A. Mission Description Continued****(U) FY 2000 (\$ in Thousands)**

(U) \$1,258 Continue PFPS software development support  
 (U) \$671 Continue A/W/E development /support/integration for the platforms listed above  
 (U) \$13,167 Continue AFMSS development effort  
 (U) \$720 Continue Responsible Test Organization (RTO) support  
 (U) \$1,320 Congressional add for the Joint Modeling and Simulation System (JMASS) program  
 (U) \$17,136 Total

**(U) FY 2001 (\$ in Thousands)**

(U) \$331 Continue A/W/E development/support/integration for the platforms listed above  
 (U) \$14,929 Continue AFMSS development effort  
 (U) \$4,315 Begin AFMSS (PC-based) Combat Capabilities, which could include but is not limited to GPS crypto key, GATM, PGM migration  
 (U) \$990 Continue Responsible Test Organization (RTO) support  
 (U) \$20,565 Total

The following net transactions are not reflected in the FY01 program total: BTR=-326K and SBIR=-650K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

**(U) FY 2002 (\$ in Thousands)**

(U) \$344 Continue A/W/E development/support/integration for the platforms listed above  
 (U) \$9,664 Continue AFMSS development effort (including but not limited to JMPS as well as MPS and/or PFPS enhancements)  
 (U) \$5,881 Continue AFMSS (PC-based) Combat Capabilities, which could include but is not limited to GPS crypto key, GATM, PGM migration  
 (U) \$1,015 Continue Responsible Test Organization (RTO) support  
 (U) \$16,904 Total

**(U) B. Budget Activity Justification**

Mission Planning Systems is in budget activity 7, Operational System Development, because the program currently supports deployed AFMSS systems, which include transportable, non-deployable, and portable laptop workstations. AFMSS MPS C2.0, C2.1, C2.2, and PFPS 3.0, 3.1, and 3.1.1 are operationally fielded to the Combat Air Forces. PFPS 3.2 and 3.3 (SOF only) updates released in FY01 and FY02. MPS C2.2c software has been delivered for integration into platforms with releases staggered over FY01 and FY02. MPS C2.2d is under development. JMPS v1.0 began development in Jun 99. The first three of six JMPS Beta releases have been completed and are being evaluated by the Air Force.

Project 3858

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Exhibit R-2 (PE 0208006F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0208006F Mission Planning Systems			3858				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>			
(U)	Previous President's Budget (FY 2001 PBR)				16,764	20,755	16,976	TBD			
(U)	Appropriated Value				18,264	20,755					
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions				-81						
	b. Small Business Innovative Research				-501						
	c. Omnibus or Other Above Threshold Reprogram				-475						
	d. Below Threshold Reprogram										
	e. Rescissions				-71	-190					
(U)	Adjustments to Budget Years Since FY 2001 PBR						-72				
(U)	Current Budget Submit/FY 2002 PBR				17,136	20,565	16,904	TBD			
(U)	<u>Significant Program Changes:</u>										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Other Procurement, AF WSC 833040, Theater Air Control System Improvement (TACSI)	12,399	12,830	15,057	13,596	14,360	14,679	15,712	16,341	Continuing	TBD
(U)	Other Procurement, AF, WSC 86190A, Initial Spares	1,106	820	790	562	533	383	0	0	Continuing	TBD
(U)	Operations & Maintenance, AF, 0208006F	29,152	33,362	37,207	32,991	34,855	34,874	36,687	37,255	Continuing	TBD
<p>O&amp;M funds for PE 0208006F support the software and hardware maintenance costs of the Air Force Mission Support System (AFMSS) and the Common Mapping Production System. These funds also support the maintenance of the following existing operational systems until replaced by AFMSS: Mission Support System II (MSS IIA) supports existing combat capability for the F-15 and F-16 aircraft mission planning (F/RF-4 and F-111 are now retired); Mission Data Preparation System (MDPS) supports conventional and nuclear mission planning, aircraft/weapons avionics loading, compatibility between evolving B-1B, B-52H avionics, their weapons systems, and USSTRATCOM. O&amp;M funding supported approximately 240 older systems in FY94. By FY02, a similar amount of funding will support over 2900 AFMSS</p>											
Project 3858				Page 3 of 7 Pages				Exhibit R-2 (PE 0208006F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0208006F Mission Planning Systems</b>	PROJECT <b>3858</b>
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**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							

mission planning systems world-wide.

There are no other AFMSS core related RDT&E activities for unit level mission planning in the USAF. Over 50 individual aircraft and weapons programs develop their respective software to be used in conjunction with the AFMSS core software. The aircraft and weapons software is a complimentary, synergistic effort that provides specific aircraft and weapons information and functionality to the core AFMSS software. The combined software gives the warfighter the full spectrum of mission planning and combat capabilities for their aircraft or weapon including interoperability with planned Theater Battle Management (TBM) systems.

**(U) E. Acquisition Strategy**

The Air Force Mission Support System (AFMSS) program is managed within the Combat Air Forces (CAF) Command and Control (C2) Systems Program Office, Electronic Systems Center, Hanscom AFB, Massachusetts. The AFMSS acquisition strategy leverages military and commercial software integrated on Commercial-Off-The-Shelf (COTS) hardware. AFMSS encompasses evolutionary software and hardware development in an open systems architecture. The contractors for the AFMSS projects are British Aerospace Engineering (BAE) Information Dominance Systems, Nashua, NH, for the MPS and C-17, KC-10, C-5, C-9, C-141, E-3, E-8, KC-135E/R A/W/Es; 46TS, Eglin AFB, FL, for the PFPS; and Logicon, San Pedro, CA for JMPS. A/W/E development is also performed in-house (government) by Oklahoma City Air Logistics Center (OC-ALC), Tinker AFB, OK; Warner Robins Air Logistics Center (WR-ALC), Robins AFB, GA; and Ogden Air Logistics Center (OO-ALC), Hill AFB, UT.

The JMPS is in the development phase. Development and initial migration activities began in FY99. The current plan is to continue development and migration activities in the FY00-FY02 time frame while individual weapon systems transition with planned Operational Flight Program (OFP) upgrades.

**(U) F. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) PFPS 3.1 Software OT&E		*										
(U) PFPS 3.1.1 Software OT&E					*							
(U) PFPS 3.2 Software OT&E									X			
(U) MPS C2.2c Release				*								
(U) MPS C2.2c (w/U-2) OT&E					*							
(U) MPS C2.2d Release									X			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE		
										June 2001		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
<b>07 - Operational System Development</b>					<b>0208006F Mission Planning Systems</b>					<b>3858</b>		
<b>(U) F. Schedule Profile Continued</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	MPS C2.2d (w/F-16 Blk 40/50) OT&E											X
(U)	JMPS v1.0 Beta S/W Releases											X
	* denotes completed event											
	X denotes planned event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208006F Mission Planning Systems			PROJECT 3858		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Primary Software Development				11,094		14,811			10,244
(U)	Aircraft/Weapons/Electronics (A/W/E) Integration Spt.				200		331			344
(U)	Systems Engineering				2,439		2,850			3,631
(U)	Program Management				2,622		1,484			1,570
(U)	Test and Evaluation				684		990			1,015
(U)	Miscellaneous				97		99			100
(U)	Total				17,136		20,565			16,904
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Logicon (JMPS)	CPAF	Jun 99	TBD	TBD	0	9,050	11,247	6,070	Continuing	TBD
BAE Information Dominance Systems (formerly Sanders)	CPAF	Dec 92	93,773	93,773	93,201	0	0	0	Continuing	TBD
46TS Eglin AFB, FL	Project Order	Dec 98	TBD	TBD	0	530	0	0	Continuing	TBD
A/W/E Integration Activity	Time & Mat'l	Oct 98	TBD	TBD	0	0	45	0	Continuing	TBD
SPO Misc					4,449	1,758	1,308	2,101	Continuing	TBD
AFMSS Combat Capabilities*	CPAF	Jul 01	TBD	TBD	0	0	1,905	2,517	Continuing	TBD
(* This effort may be rolled into the USN's Logicon contract for JMPS shown above)										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0208006F Mission Planning Systems				PROJECT 3858		
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Support and Management Organizations</u>										
FFRDC			TBD	TBD	15,480	2,970	3,560	3,631	Continuing	TBD
Miscellaneous			TBD	TBD	9,532	2,108	1,510	1,570	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46TW (Eglin AFB)	Project Order	Oct 98	TBD	TBD	0	720	990	1,015	Continuing	TBD
<b>(U) <u>Government Furnished Property:</u></b>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					97,650	11,338	14,505	10,688	TBD	TBD
Subtotal Support and Management					25,012	5,078	5,070	5,201	TBD	TBD
Subtotal Test and Evaluation					0	720	990	1,015	TBD	TBD
Total Project					122,662	17,136	20,565	16,904	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208021F Information Warfare Support					PROJECT 0374	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0374	Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt	4,738	0	1,803	3,174	3,240	3,308	3,378	3,449	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 Joint Expeditionary Force Exercise (JEFX) 2000 emphasized Agile Combat Support, but exploration also occurred in managing intelligence, surveillance, and reconnaissance assets; global mobility; and dynamic battle control. JEFX 2000 and other Air Force funding was reprogrammed from existing command and control, global power, global reach, and space Program Elements. The Information Warfare Planning Capability (IWPC) was reprogrammed from other Information Warfare funding. The IWPC is a full-spectrum, offensive and defensive, planning capability. IWPC operators will develop IW courses of action for the Joint Air Component Commander (JFACC) and nominate IW 'targets' for inclusion into the Master Air Attack Plan and the Joint Integrated Prioritized List (JIPL).

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$3,622 JEFX  
 (U) \$1,116 Information Operations Planning  
 (U) \$4,738 Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$300 IWPC Software Testing  
 (U) \$1,503 IWPC Software Development  
 (U) \$1,803 Total

Project 0374

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

**BUDGET ACTIVITY**  
**07 - Operational System Development**

**PE NUMBER AND TITLE**  
**0208021F Information Warfare Support**

**PROJECT**  
**0374**

**(U) B. Budget Activity Justification**

This program is in Budget Activity 7, Operational System Development, because it studies, develops and demonstrates IO prototypes to provide warning, self protection, and support to personnel and equipment against combat systems employed by enemy forces. It identifies existing military and commercial research and development efforts which can satisfy unfulfilled operational requirements as identified by the Unified Commands, and quickly bridge the gap between technology developments and meld the technology into the warfighter's operational requirements. The Secretary of Defense identified the need for this capability in 1983, and with unanimous approval of the Services and the Unified Commands, JCS made this function a part of the Joint Information Operations Center (JIOC) mission. The Air Force, as executive agent, is responsible for the total funding of this effort.

**(U) C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	1,368	0	0	
(U) Appropriated Value	1,376	0		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research	-42			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	3,661			
e. Rescissions	-257			
(U) Adjustments to Budget Years Since FY 2001 PBR			1,803	
(U) Current Budget Submit/FY 2002 PBR	4,738	0	1,803	TBD

**(U) Significant Program Changes:**

**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E		0	1,803	5,201	4,638	4,714	4,768	4,843	Continuing	Continuing
(U) Other APPN		0	0	1,015	1,053	1,092	1,133	1,175	Continuing	Continuing

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>										DATE <b>June 2001</b>																																																																																														
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0208021F Information Warfare Support</b>					PROJECT <b>0374</b>																																																																																														
<p>(U) <b><u>E. Acquisition Strategy</u></b>                  All major contracts within this Program were awarded after full and open competition. The Information Warfare Planning Capability (IWPC) acquisition strategy follows:</p> <p>Electronic Systems Center (ESC), Hanscom AFB, MA will manage the acquisition and development for evolving suite of interoperable IW planning and decision support capabilities comprised of, as required, software, hardware, and communications products. ESC will identify and implement an open, scaleable system architecture that will accommodate growth in functionality; allow functional modules to interact, achieve early data sharing capability with TBMCS, with the goal of interoperability as security policy permits; and be compliant with evolving GCCS and DII COE standards. An IWPC spiral will be released once a year. Requirements for the next spiral will be developed by the IWPC Spiral Development Integrated Process Team (IWPC SD IPT), chaired by ACC. Spirals within the acquisition cycle allow deficiencies to be identified and considered for future spirals as well as the next experiment or applied to current capabilities. Integration efforts will capitalize on the synergy between evolving technologies and on-going system program modifications to maximize the return on investment.</p>																																																																																																								
<p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4"><u>FY 2000</u></th> <th colspan="4"><u>FY 2001</u></th> <th colspan="4"><u>FY 2002</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) JEFX</td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) IWPC Contract Obligation</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) IWPC Software Development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) IWPC Software Integration Testing</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>(U) IWPC Software Release</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> </tr> </tbody> </table>															<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) JEFX				*									(U) IWPC Contract Obligation						*			X				(U) IWPC Software Development						*			X				(U) IWPC Software Integration Testing								X				X	(U) IWPC Software Release										X		
	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>																																																																																															
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																												
(U) JEFX				*																																																																																																				
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208021F Information Warfare Support			PROJECT 0374		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Various JEFX initiatives; systems arch; integration, comms				3,622		0			0
(U)	IWPC VX.O Software Development						0			1,503
(U)	Instrumentation and Support				0					
(U)	Facilities				0					
(U)	Testing				0					300
(U)	Engineering Services				1,116					0
(U)	Program Infrastructure									
(U)	SME				0					
(U)	Total				4,738		0			1,803
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
JEFX - Various	Various	Various	N/A	N/A		3,622	0	0	Continuing	TBD
Bell Aerospace & Techn	DDForm 448	Jan	2	91		800	0	0	0	800
GRCI	AF Form 9	Sep	2	91		118	0	0	0	118
Unknown	TBD	TBD	2	91		198	0	0	0	198
ARINC	DDForm 448	Oct	N/A	N/A		0	0	0	0	0
General Dynamics	AF Form 9	Nov	2	91		0	0	1,503	Continuing	TBD
MITRE	DDForm 448	Oct	N/A	N/A				300	Continuing	TBD
<u>Support and Management Organizations</u>										
DISA	DDForm 448	Jan	2	91					0	0
JIOC	DDForm 1610	Jan-Sep	2	91					0	0

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208021F Information Warfare Support			PROJECT 0374	
(U) <b>Performing Organizations Continued:</b>									
<u>Test and Evaluation Organizations</u>									
SWRI	AF Form 9	Feb	2	91				0	0
(U) <b>Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Product Development Property</u>									
Product Development					0	0	0	0	0
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
Subtotal Product Development					0	4,738	0	1,803	TBD
Subtotal Support and Management									0
Subtotal Test and Evaluation									0
Total Project					0	4,738	0	1,803	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0208031F WRM-EQUIPMENT/SECONDARY ITEMS</b>					PROJECT <b>4668</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4668	Shelter Development	1,401	1,462	0	0	0	0	0	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>SAF/AQPS, HQ USAF/ILSR and HQ USAF/ILEX are in the process of consolidating three small dollar Civil Engineer (CE) readiness R&amp;D programs ( PE64617F - Agile Combat Support; PE64708F - Civil, Fire, Environmental, Shelters, and the 3600 portion of PE28031F - War Reserve Materiel) under PE 64617F. PE28031F will be merged into PE64617F effective FY02. This will meet the intent of the House action to eliminate smaller PEs and provide a more cohesive, manageable CE Readiness modernization effort. FY03-FY07 budget numbers do not reflect DoD's strategic review results.</p> <p><b>(U) A. Mission Description</b></p> <p>(U) A. Mission Description</p> <p>1. This program supports Air Force (AF) Bare Base Mobility Equipment, also known as Harvest Falcon (HF) and Harvest Eagle (HE). Designed and sized to support the current Joint Chiefs of Staff (JCS) wartime planning scenario of two nearly simultaneous Major Theater Wars (2MTW), this equipment provides theater warfighters billeting, industrial, and air field capability to support up to 68,200 combat troops and 822 aircraft at 15 austere locations by building complete temporary bases from the ground up. Of the two systems, HF is the newest and fields the greatest capability (housekeeping plus air base infrastructures). The HF system provides capability directed in the FY90-94 Defense Planning Guidance (DPG) that initially tasked the Air Force to support United States Central Command (USCENTCOM) Rapid Deployment Forces (RDF) and save critical airlift resources through theater prepositioning. Subsequent DPGs have continued this requirement. Harvest Falcon remains a top priority procurement requirement of the Commander-In-Chief/Central Command.</p> <p>2. The outstanding reputation enjoyed by the AF Bare Base program, established during the Gulf War, has continued to grow in successive Military-Operations-Other-Than-War (MOOTW) throughout the world. These include Operation Southern Watch, Provide Relief, Provide Promise, Provide Comfort, Restore Hope, Sea Signal, Uphold Democracy, Joint Endeavor, Desert Focus, Desert Fox, Noble Anvil and Allied Force. Significant quantities of Harvest Falcon and Harvest Eagle assets were successfully employed during Operations Allied Force and Noble Anvil to support operational and humanitarian requirements in Kosovo, Albania, Italy, and Northern Turkey. The unparalleled success of the AF Bare Base program in providing critically needed austere basing facilities has resulted in continued demand for the equipment to support MOOTW. This high Operational Tempo (OPTEMPO) utilization continues to take its toll on system assets. As a result, the majority of HF and HE sets currently in the inventory require comprehensive repair or replacement. A majority of the equipment has been used for over three years, well beyond its original design parameters. Equipment modernization and reconstitution funding thus remains a crucial issue.</p>											
Project 4668		Page 1 of 5 Pages					Exhibit R-2 (PE 0208031F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> June 2001			
<b>BUDGET ACTIVITY</b> 07 - Operational System Development		<b>PE NUMBER AND TITLE</b> 0208031F WRM-EQUIPMENT/SECONDARY ITEMS		<b>PROJECT</b> 4668	
<b>(U) A. Mission Description Continued</b>					
3. The Air Force Bare Base program has had unparalleled success meeting the demands in support of MOOTW. This has taken its toll on equipment, and as a result the majority of HF and HE equipment has been in use well beyond design parameters and requires comprehensive repair or replacement. In addition, the Expeditionary Air Force concept demands systems that are lighter leaner, more maintainable, and more deployable. Research, Development, Testing, and Evaluation (RDT&E) funds support these modernization and reconstitution requirements.					
<b>(U) FY 2000 (\$ in Thousands)</b>					
(U)	\$605	Initiate EMD for Bare Base Systems Cold Weather Package			
(U)	\$434	Complete Deployable Waste Management System Study			
(U)	\$362	Continue other technical support			
(U)	\$1,401	Total			
<b>(U) FY 2001 (\$ in Thousands)</b>					
(U)	\$380	Complete EMD for Bare Base Systems Cold Weather Package			
(U)	\$880	Complete EMD for Deployable Power Generation and Distribution System			
(U)	\$202	Continue other technical support			
(U)	\$1,462	Total			
<b>(U) FY 2002 (\$ in Thousands)</b>					
(U)	\$0	No Activity			
(U)	\$0	Total			
<b>(U) B. Budget Activity Justification</b>					
This program is in Budget Activity 7 because it supports development of operational HF/HE equipment in modernized configurations which reduce deployment 'footprints', required transport airlift sorties, and increase operational efficiencies.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	1,467	1,475	0	TBD
(U)	Appropriated Value	1,459	1,475		TBD
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-9			-9
	b. Small Business Innovative Research				
Project 4668		Page 2 of 5 Pages	Exhibit R-2 (PE 0208031F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE			
							June 2001			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0208031F WRM-EQUIPMENT/SECONDARY ITEMS</b>			<b>4668</b>			
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>					
c. Omnibus or Other Above Threshold Reprogram										
d. Below Threshold Reprogram										
e. Rescissions										
		-49	-13		-62					
(U) Adjustments to Budget Years Since FY 2001 PBR										
(U) Current Budget Submit/FY 2002 PBR										
		1,401	1,462	0		TBD				
(U) <u>Significant Program Changes:</u>										
FY01 funding for Deployable Waste realigned to support higher priorities in the Deployable Power Generation and Distribution System (DPGDS) program (reference Acquisition Strategy for detailed explanation). PM MEP funded DPGDS support in FY00.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Other Procurement, AF,										
	45,403	49,671	27,421	26,809	20,148	19,348	20,500	20,700	Continuing	Continuing
Other Base Maintenance and Support										
Equipment:WRM-Equipment /Secondary Items (0208031F) (WSC 845420), P-1: 108										
<b>(U) E. Acquisition Strategy</b>										
1. The SPO is evaluating and testing commercial solutions to determine options for militarizing commercially-available products for cold weather systems and waste management systems. In FY00 it completed and extensive Deployable Waste Management Study, which determined the on-site waste treatment equipment and investigation of emerging technologies. Power requirements were analyzed, along with operatility factors, logistics impacts and cost drivers. Engineering analyses were performed for each candidate technology; specific operational requirements were defined and definitive waste stream data was incorporated. The SPO will also evaluate work performed by Air Force Research Laboratories, which has identified technologies with potential solution to safely, effectively and efficiently incinerate medical and hazardous wastes. This capability may also eliminate other waste materials, such as solid wastes/garbage, and other materials placed in landfills. Transition to the SPO										
Project 4668			Page 3 of 5 Pages				Exhibit R-2 (PE 0208031F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0208031F WRM-EQUIPMENT/SECONDARY ITEMS</b>	PROJECT <b>4668</b>
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(U) **E. Acquisition Strategy Continued**  
in FY04. Contracts will be competitive, firm fixed price.

2. The SPO is also developing the next generation of electrical power generation and distribution equipment to support Harvest Eagle and Harvest Falcon deployable Bare Base encampments and US Army Prime Power Units. This AF-led joint effort with the DOD Program Manager for Mobile Electric Power (PM-MEP) will use state-of-the-art, commercially available equipment and parts support to acheive reduced airlift (38% achieved), reduced fuel consumption (16% achieved) and improved load performance. PM-MEP funded FY00 T&E. Due to new requirements requested by both the Air Force and agreed upon by the Army, FY01 provides funds to complete T&E.

(U) **F. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) BARE BASE COLD WEATHER PKG												
(U) - Release RFP			*									
(U) - Contract Award				*								
(U) - Conduct Verification Testing							*					
(U) DEPLOYABLE WASTE MGT SYS												
(U) -Complete Waste Management Study			*									
(U) DEPLOYABLE POWER GENERATION AND DISTRIBUTION SYSTEM (DPGDS)												
(U) - Complete Implementation of New Requirements							*					
(U) - Complete OT&E											X	
(U) - Milestone III Decision											X	
(U) - Award Production Option											X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208031F WRM-EQUIPMENT/SECONDARY ITEMS			PROJECT 4668		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Contracts					375		660		0
(U)	A&AS Support					490		540		0
(U)	Other Government Agencies					164		50		0
(U)	Material/Equipment					10		10		0
(U)	Other Technical Support					362		202		0
(U)	Total					1,401		1,462		0
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Bare Base Systems Cold	C/FP	4Qtr/FY00	910	910	0	434	380	0	Continuing	TBD
Weather Package										
Deployable Waste Management System	C/FP	1Qtr/FY01	3,948	3,948	1,466	605	202	0	Continuing	TBD
Deployable Power Generation and Distribution System	C/FP	3Qtr/FY98	2,238	2,238	1,690	362	880	0	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					3,156	1,401	1,462	0	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					3,156	1,401	1,462	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208060F Theater Missile Defenses					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	27,987	19,642	0	0	0	0	0	0	Continuing	TBD
4478 Command, Control, Communications, Computers, and Intelligence Enhancements	19,834	19,642	0	0	0	0	0	0	Continuing	TBD
4479 Attack Operations Concept Development	8,153	0	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03=07 budget numbers do not reflect the DoD strategic review results

The following net transactions are not reflected in the FY01 program total:  
 BTR = + \$ 1,481 K  
 SBIR = - \$ 648 K

These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) **A. Mission Description**  
 Air Force Theater Missile Defense/Time Critical Target (TMD/TCT) effort is focused in two areas: Battle Management/Command, Control, Communications, Computers, and Intelligence (BM/C4I) enhancements and improvements to existing Attack Operations systems and procedures. AF TMD concentrates on defining improvements to existing operational capabilities, developing and evaluating prototypes, demonstrating as well as simulating modifications through operational concept demonstrations, and coordinating the transition of these capabilities to operational systems. BM/C4I projects [including, for example, Dynamic Battle Management, Attack Operations Decision Aid (AODA), Automatic Application of Intelligence Preparation of Battlespace (A2IPB) and Joint TADIL-J Range Extension (JRE)] reduce timelines required to negate the theater missile threat by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks for Offensive Counterair (Attack Operations). Attack Operations focuses on improving the ability to locate, identify, target and destroy theater missiles and supporting infrastructure, including theater missile threats in production, deployment, prior to and during launch, as well as soon after launch before critical mobile targets are able to egress to hide locations. The foundation for Attack Operations is improved C4I, advanced sensors, target identification capabilities, CONOPS, training, tactics and procedures, and requirements development for offensive counterair and integration with defensive systems.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																								
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0208060F Theater Missile Defenses</b>																																																								
<p>(U) <b><u>B. Budget Activity Justification</u></b>                  This program is in Budget Activity 7 because its projects are upgrades to existing operational systems.</p>																																																										
<p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">25,904</td> <td style="text-align: right;">19,824</td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">26,129</td> <td style="text-align: right;">19,824</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: right;">-83</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: right;">-746</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: right;">4,089</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: right;">-102</td> <td style="text-align: right;">-182</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td style="text-align: right;">-1,300</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">27,987</td> <td style="text-align: right;">19,642</td> <td></td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	25,904	19,824		TBD	(U) Appropriated Value	26,129	19,824			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-83				b. Small Business Innovative Research	-746				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	4,089				e. Rescissions	-102	-182			(U) Adjustments to Budget Years Since FY 2001 PBR	-1,300				(U) Current Budget Submit/FY 2002 PBR	27,987	19,642		TBD
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<p>(U) <b><u>Significant Program Changes:</u></b>                  PE 28060F was reduced across the FYDP to provide funding for higher AF priority programs.</p>																																																										

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0208060F Theater Missile Defenses</b>					PROJECT <b>4478</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4478	Command, Control, Communications, Computers, and Intelligence Enhancements	19,834	19,642	0	0	0	0	0	0	Continuing	TBD
<p>Theater Missile Defense pre-EMD efforts in PE 28060F transitioning into EMD in PE 27410.</p> <p>FY03-07 numbers do not reflect the DoD strategy review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      Battle Management, Command, Control, Communications, Computers, and Intelligence (BMC4I) enhancements are needed to reduce timelines required to negate Theater Missiles and Time Critical Targets (TCTs) by increasing interoperability, improving battle management tools, and providing accurate target data via datalinks for Offensive Counterair (Attack Operations) against theater missile and time critical targets. The Combat Air Force (CAF) Concept of Operations (CONOPS) for Command and Control (C2) Against Time Critical Targets and Air Superiority Mission Area Plan (MAP) provide the foundation. The BMC4I program encompasses:</p> <p>1) Dynamic Battle Management (DBM), the CAF vision for providing flexible, centralized C2 throughout conflict spectrum to meet Joint Vision 2010 objectives. Allows the Joint Force Air Component Commander (JFACC) to tailor decentralized execution to best meet the Rule of Engagement (ROE) and span of control requirements enabling prosecution of any theater missile target and TCTs. Effort will identify technical capabilities and migration path required to support DBM environment consisting of wide area connectivity, decision support tools, and shared information.</p> <p>2) Automated Planning Tools / Decision Aids which prototype and demonstrate advanced decision aid capabilities to upgrade the battle management tools and infrastructure to better execute the Theater Missile Defense (TMD) mission. Examples include the integration of the Time Critical Target Aid (TCTA) and Joint Defensive Planner (JDP) into Theater Battle Management Core Systems (TBMCS)/ Global Command and Control System (GCCS) architecture as well as the development and migration of the Attack Operations Decision Aid (AODA) into Theater Air Control System (TACS) platforms.</p> <p>3) Intelligence Preparation Of Battlespace (IPB) which enables the Commander and supporting staff to visualize the full spectrum of adversary capabilities and course of actions (COAs) across all dimensions of the battlespace. Examples include the revision of the methodology for the IPB process as it supports TMD; development of an information architecture populated with linked digital products; generation of training material for use in Air Force schoolhouse and field IPB training; and development of a software Automated Assistance with IPB (A2IPB) tool for TBMCS/GCCS to assist the intelligence analyst at a Joint Intelligence Center (JIC), and the Intel/Ops Planner at an Air Operations Center (AOC).</p>											
Project 4478			Page 3 of 12 Pages				Exhibit R-2A (PE 0208060F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0208060F Theater Missile Defenses</b>	<b>4478</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>4) Data Link Connectivity which provides upgrades to existing Air Force platforms to better utilize existing communications systems. These include Joint Tactical Information Dissemination System ( JTIDS) TMD Message Set Integration and JTIDS gateways to extend range beyond line of sight and interface with National Technical Means (NTM) to provide attack and early launch reporting to theater.</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u></p> <p>(U) \$5,338 Integration of DBM concepts and prototype capabilities into TMD/TCT cell. Develop upgraded capability for Air Operations Center (AOC) and Ground Theater Air Control System (GTACS) and conduct operations experiments during EFX 00.</p> <p>(U) \$5,893 Continue to develop IPB evolutionary prototypes (EPs) for TBMCS; demonstrate improved automated procedures and IPB system capabilities in Ops Concept Demonstrations (OCDs) and Joint exercises. Complete Area Limitation module development and conduct FY00 EFX demonstration.</p> <p>(U) \$5,610 Continue AODA spiral 2 prototype development; continue to develop Joint Target Execution (JTE) and conduct EFX 00 demonstrations (distributed, collaborative targeting). Maintain TMD/TCT Cell Testbed to improve integration into operational systems and demonstrate integrated capabilities in operational concept demonstrations.</p> <p>(U) \$2,993 Continue to explore communications improvements that compress Theater Missile engagement timelines and demonstrate integrated capabilities in Operational Concept Demonstrations (OCDs), Unified Command, Commander in Chief (CINC) experiments, and Joint Exercises.</p> <p>(U) \$19,834 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$6,165 Continue to develop Theater Missile Defense/Time Critical Targeting (TMD/TCT) decision aid prototypes for Air Operations Centers (AOCs); Automated Application of Intelligence Preparation of the Battlespace (A2IPB) and Joint Terrain Analysis Toolkit (JTAT). Combine prototype decision aids and IPB tools into an integrated set of applications and demonstrate improved automated procedures and IPB system capabilities in Operational Concept Demonstrations (OCDs), Unified Command, Commander in Chief (CINC) experiments and joint exercises. Develop a TMD/TCT contingency capability that includes IPB and design for future production.</p> <p>(U) \$5,292 Complete Attack Operations Decision Aid (AODA) Spiral 2. Continue to develop Joint Target Execution (JTE) and Time Critical Targeting Aid (TCTA) prototypes in relation to Joint Services Workstation (JSWS) development effort. Maintain TCT Testbed to improve integration into operational systems. Evaluate additional programs with TMD/TCT applicability for integration and design activities of future system as described in the TCT Capability Operational Requirements Document (ORD). Develop a TMD/TCT contingency capability that includes distributed, collaborative targeting and design for future production.</p> <p>(U) \$1,052 Continue to explore communications improvements and architecture issues that compress Theater Missile engagement timelines and demonstrate in OCDs, CINC experiments and Joint Exercises.</p>		
Project 4478	Page 4 of 12 Pages	Exhibit R-2A (PE 0208060F)

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0208060F Theater Missile Defenses</b>	<b>PROJECT</b> <b>4478</b>
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(U) **A. Mission Description Continued**

(U) FY 2001 (\$ in Thousands) Continued

(U) \$4,487 Conduct BMC4I and Attack Operations Operational Concept Demonstrations

(U) \$2,646 Conduct Development of prototype Joint Surveillance Target Attack Radar System (JSTARS) Automatic Target Recognition (ATR) hardware and software for multisensor application in the TCTA.

(U) \$19,642 Total

The following net transactions are not reflected in the FY01 program total:

BTR = + \$ 1,481 K  
SBIR = - \$ 648 K

These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) FY 2002 (\$ in Thousands)

(U) \$0 No Activity

(U) \$0 Total

(U) **B. Project Change Summary**

- FY2001 budget is inclusive of BMC4I initiatives and Attack Operations. The FY01-05 budget is reduced to reflect the impact due to budget constraints and funding AF higher priorities.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										
(U) RDT&E, BMDO PMA F3261, BM/C4I	4,000	4,000	200	200	200	200	200	200		TBD

Funding provided by the Ballistic Missile Defense Office for BMC4I interoperability evaluations and prototype development.

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0208060F Theater Missile Defenses</b>	PROJECT <b>4478</b>
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(U) **D. Acquisition Strategy**  
 HQ Electronic Systems Center (ESC) provides program management for the concept exploration of C4I enhancements. Prototypes and analysis of improvements to existing C4I assets will complement the Attack Operations effort with combined participation in Operational Concept Demonstrations. These Attack Operations and C4I analyses and demonstrations are specifically targeted against operational deficiencies identified in the TMD Mission Area Plan (MAP), are traceable to the AF and the Joint Requirements Oversight Council (JROC) Mission Need Statement (MNS) and are consistent with the Air Force and Joint TMD Concept of Operations (CONOPS) in accordance with Joint Doctrine. Integration of TMD requirements and fielding of proposed material solutions will continue beyond concept exploration in the appropriate program element for a particular system. Existing contracts will be used for those systems where engineering change proposals are appropriate. Systems Engineering and Technical Analysis (SETA) contracts will be used to support the requirements definition phase of TMD improvements. In those areas where new material solutions are necessary to correct a deficiency, the source selection process will be followed.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Establish BMC4I prototype development plan and schedule. Annual review			*				X					
(U) JEFX demonstrations				X				X				
(U) Demonstrate automated IPB procedures and system capabilities in Ops Concept				X				X				
(U) CINC experiments and Joint Exercises.		*	*			X	X					
(U) Evaluate use of C2 planning/decision aids. Annual Review.				X				X				
(U) Continue to explore JTIDS/Link-16 Integration/Improvements. Annual Rev				X				X				

\* - Completed  
 X- Planned Start Date

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208060F Theater Missile Defenses			PROJECT 4478		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Dynamic Battle Management (DBM)					5,338				
(U)	Intelligence Preparation of the Battlespace					5,893		6,165		
(U)	Automated Decision Aids/Planning Tools					5,610		5,292		
(U)	JTIDS/Link-16 Integration & Beyond LOS Capability					2,993		1,052		
(U)	Operations Concept Demonstrations and CINC Exercises							4,487		
(U)	Joint STARS ATC/ATR Demonstration							2,646		
(U)	Total					19,834		19,642		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
TRW (AODA)	CPFF	Oct 97	N/A	N/A	2,879	2,490	2,000		Continuing	TBD
Boeing (DBM)	T&M	Dec 97	N/A	N/A	2,339	0	0			2,339
Northrop Grumman (DBM)	T&M	Dec 97	N/A	N/A	2,415	0	0			2,415
Zel Technologies (A2IPB)	T&M	May 96	N/A	N/A	3,160	2,318	2,932		Continuing	TBD
Sparta (Intel Data Base)	T&M	May 96	N/A	N/A	1,534	370	1,100		Continuing	TBD
Raytheon (JRE)	T&M	Oct 97	N/A	N/A	2,119	405	325		Continuing	TBD
Motorola (TCTA)	T&M	Mar 96	N/A	N/A	1,945	3,821	3,259		Continuing	TBD
Army TEC (Area Lim)	MIPR	June 99	N/A	N/A		2,356	1,635			3,991
Lockheed Martin EFX	TBD	Nov 99	N/A	N/A		2,186			Continuing	TBD
(Analyses)										
Sandia National Labs	MIPR	Oct 99	N/A	N/A			1,125		Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>			<b>0208060F Theater Missile Defenses</b>			<b>4478</b>	
<b>(U) Performing Organizations Continued:</b>							
<u>Support and Management Organizations</u>							
FFRDC	N/A	N/A	2,500	1,353	985	Continuing	TBD
Non-FFRDC (ESC)	N/A	N/A	1,031	875	650	Continuing	TBD
Non-FFRDC (AC2ISRC)	N/A	N/A	540	525	525	Continuing	TBD
Non-FFRDC (AF/XORT)	N/A	N/A	500	955	941	Continuing	TBD
<u>Test and Evaluation Organizations</u>							
C2TIG/AFTED			182	2,180	4,165	Continuing	TBD
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Subtotals</u>							<u>Total</u>
Subtotal Product Development			16,391	13,946	12,376	TBD	TBD
Subtotal Support and Management			4,571	3,708	3,101	TBD	TBD
Subtotal Test and Evaluation			182	2,180	4,165	TBD	TBD
Total Project			21,144	19,834	19,642	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0208060F Theater Missile Defenses					PROJECT 4479	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4479    Attack Operations Concept Development	8,153	0	0	0	0	0	0	0	0	TBD
<p>(U) <b><u>A. Mission Description</u></b>            Improvements in Attack Operations are based on the ability to locate, identify, and destroy theater missiles, their launchers, and associated infrastructure on the ground. In addition to the enhancements to C4I, the Attack Operations Project focuses on advanced sensor and target identification capabilities, CONOPS and requirements development for TMD offensive counter-air and optimized integration with defensive systems. Specific technologies such as automatic target cueing/recognition (ATC/R) and moving target indicator/track (MTI/T) upgrades to Joint STARS, F-15E and potentially the U-2, F-16 and Unmanned Air Vehicles (UAVs) are to be analyzed using constructive analysis and evaluated through Technology/Operational Concept Demonstrations and CINC Experiments along with command and control connectivity upgrades critical to their optimum employment against theater missile targets. Effectiveness and affordability parameters defined will be used in support of follow on acquisition decisions involving P3I upgrades to existing weapon systems and potential new start programs within existing/other program elements.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$2,145            Conducted Attack Operations Operational Concept Demonstration.            (U) \$1,872            Continued analysis of architectures with weapon system and BMC4I upgrades. Participated in a distributed simulation to verify improvements in attack operations capabilities from sensor to shooter that were demonstrated on prototype attack and surveillance systems. Supported development of user's operational requirements for weapon system ORDs.            (U) \$2,090            Conducted demonstration of JSTARS ATR with expanded target set of time-critical targets.            (U) \$2,046            Conducted development of F-15E ATC/R prototype with on- and off-board sensor fusion. Perform lab demonstration of prototyped capabilities.            (U) \$8,153            Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0                FY01 Attack Operations programs included in BPAC 674479.            (U) \$0                Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0                No Activity            (U) \$0                Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>            FY01 funding consolidated in BPAC 674478</p>										
Project 4479			Page 9 of 12 Pages				Exhibit R-2A (PE 0208060F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>					
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0208060F Theater Missile Defenses</b>				PROJECT <b>4479</b>				
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>												
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E												
(U) Other APPN												
<b>(U) D. Acquisition Strategy</b>												
HQ Aeronautical Systems Center (ASC) provides the program management for the concept exploration and prototype development of TMD Attack Operations. ASC conducts lab demonstrations with Wright Labs and supports Concept of Operations (CONOPS) development and requirements definition by analyzing and demonstrating measures of effectiveness for various sensor improvements and cueing schemes.												
<b>(U) E. Schedule Profile</b>												
		<u>FY 2000</u>				<u>FY 2001</u>			<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ATC/R Demos (F-15E/Surveillance)			*					X				
(U) Ops Concept Demonstrations			*									
* - Completed												
X - Planned Start Date												
Project 4479			Page 10 of 12 Pages				Exhibit R-2A (PE 0208060F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208060F Theater Missile Defenses			PROJECT 4479			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Joint STARS ATC/R Demonstration/Improvements					2,046		0			
(U)	Operational Concept Demonstration (RS99 and EFX99)					2,145		0			
(U)	Sensor Prototypes and Attack Ops Demonstrations/Sims					1,872		0			
(U)	F-15E ATC/R Demonstrations					2,090		0			
(U)	Total					8,153		0			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	For Profit Contractor	TBD	Nov 99	N/A	N/A		1,572				1,572
	(Analyses)										
	Sandia National Labs	MIPR	Oct 99	N/A	N/A		2,090				2,090
	Raytheon (F-15E Radar)	CPFF	Mar 95	N/A	N/A		1,564				1,564
	Lockheed (Tgt Pod)	CPFF	Nov 99	N/A	N/A		891				891
	<u>Support and Management Organizations</u>										
	FFRDC			N/A	N/A					Continuing	TBD
	Non-FFRDC			N/A	N/A					Continuing	TBD
	HQ ASC			N/A	N/A		355			Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	C2ITG/AFTED	MIPR	Mar 95	N/A	N/A		1,581			Continuing	TBD
	AFSAA	MIPR	Feb 95	N/A	N/A					0	0
	Eglin-46 Tst Wg	PO	May 94	N/A	N/A		100			Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0208060F Theater Missile Defenses</b>			<b>4479</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
					<u>Budget to</u>	<u>Total</u>
					<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development				6,117		6,117
Subtotal Support and Management				355		TBD
Subtotal Test and Evaluation				1,681		TBD
Total Project				8,153		TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER</b>	<b>PROJECT</b> <b>4777</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4777 E-4B Aircraft Modernization	10,780	34,094	23,359	9,078	29,577	21,893	0	0	0	128,781
Quantity of RDT&E Articles	0	1	1	0	2	0	0	0	0	0

Quantity of RDT&E Articles includes prototype procurements of both E-4B Update Program Block 5A and Block 5B items (formerly known as the E-4B Modernization Program) as well as prototype procurements of GATM Phase II and GATM Phase III items.

FY03-FY07 budget numbers do not reflect the DoD strategic results.

**(U) A. Mission Description**

This program encompasses modernization of National Airborne Operational Center (NAOC) essential infrastructure, mission equipment, and interior, as well as mandated Global Access, Navigation, and Safety/Global Air Traffic Management (GANS/GATM) modifications to the E-4B aircraft. The NAOC supports the National Command Authority (NCA) and Joint Chiefs of Staff with a worldwide, survivable and enduring node of the National Military Command System (NMCS) for the exercise of their national security responsibilities throughout the full spectrum of conflict. These modifications are vital in order to maintain mission effectiveness and efficiency. The upgrades: 1) replace the increasingly hard-to-support 1960s era communications and computer equipment (telecommunications switch, multiplexor, messaging systems, etc) on the aircraft with modern, reliable, digital systems that will be supportable for the planned life of the platform; 2) make the commander's console and battle staff workstations compatible with Global Command and Control System (GCCS) architecture and software; 3) provide sound dampening to eliminate the severe ambient noise problems that prevent normal communications in the briefing room, conference room, and battle staff area without using intercom headsets; and 4) provide GANS/GATM equipment, integration and testing. Commencing FY02, conduct engineering and cost trade studies pertaining to the implementation of worldwide coverage of high bandwidth data streaming capabilities to/from the E-4B aircraft.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$9,540 Development of E-4B Modernization & GATM Modifications
- (U) \$0 Software Development; GCCS Integration
- (U) \$1,240 System Engineering and Program Management Support
- (U) \$10,780 Total

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																						
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER</b>																																																							
<b>PROJECT</b> <b>4777</b>																																																								
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">(U) \$16,004</td> <td>E-4B Modernization and GATM Development</td> </tr> <tr> <td>(U) \$14,569</td> <td>Purchase Engineering Prototype (Blk 5A)</td> </tr> <tr> <td>(U) \$0</td> <td>Install Prototype on A/C #1</td> </tr> <tr> <td>(U) \$2,262</td> <td>System Integration and Documentation (Blk 5A)</td> </tr> <tr> <td>(U) \$1,259</td> <td>System Engineering and Program Management Support</td> </tr> <tr> <td>(U) \$34,094</td> <td>Total</td> </tr> </table> <p>Note: The following transactions are not reflected in the FY01 program total: BTR = -\$4.5M; ATR= 0; SBIR = - \$1.054M. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">(U) \$4,095</td> <td>Purchase GATM 2 Prototype Kit</td> </tr> <tr> <td>(U) \$2,264</td> <td>System Integration, Testing, and Documentation (Blk 5A/GATM)</td> </tr> <tr> <td>(U) \$15,500</td> <td>System Engineering (Block 5A/GATM 2)</td> </tr> <tr> <td>(U) \$50</td> <td>Engineering and cost studies of high bandwidth data streaming capability</td> </tr> <tr> <td>(U) \$1,450</td> <td>Contractor System Engineering and Program Management Support</td> </tr> <tr> <td>(U) \$23,359</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in budget activity 7 - Operational System Development, Research Category 6.6 because the program is developing modifications for current operations systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">12,666</td> <td style="text-align: center;">34,410</td> <td style="text-align: center;">32,314</td> <td style="text-align: center;">128,781</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">12,666</td> <td style="text-align: center;">34,410</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-380</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			(U) \$16,004	E-4B Modernization and GATM Development	(U) \$14,569	Purchase Engineering Prototype (Blk 5A)	(U) \$0	Install Prototype on A/C #1	(U) \$2,262	System Integration and Documentation (Blk 5A)	(U) \$1,259	System Engineering and Program Management Support	(U) \$34,094	Total	(U) \$4,095	Purchase GATM 2 Prototype Kit	(U) \$2,264	System Integration, Testing, and Documentation (Blk 5A/GATM)	(U) \$15,500	System Engineering (Block 5A/GATM 2)	(U) \$50	Engineering and cost studies of high bandwidth data streaming capability	(U) \$1,450	Contractor System Engineering and Program Management Support	(U) \$23,359	Total		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	12,666	34,410	32,314	128,781	(U) Appropriated Value	12,666	34,410			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research	-380			
(U) \$16,004	E-4B Modernization and GATM Development																																																							
(U) \$14,569	Purchase Engineering Prototype (Blk 5A)																																																							
(U) \$0	Install Prototype on A/C #1																																																							
(U) \$2,262	System Integration and Documentation (Blk 5A)																																																							
(U) \$1,259	System Engineering and Program Management Support																																																							
(U) \$34,094	Total																																																							
(U) \$4,095	Purchase GATM 2 Prototype Kit																																																							
(U) \$2,264	System Integration, Testing, and Documentation (Blk 5A/GATM)																																																							
(U) \$15,500	System Engineering (Block 5A/GATM 2)																																																							
(U) \$50	Engineering and cost studies of high bandwidth data streaming capability																																																							
(U) \$1,450	Contractor System Engineering and Program Management Support																																																							
(U) \$23,359	Total																																																							
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																				
(U) Previous President's Budget (FY 2001 PBR)	12,666	34,410	32,314	128,781																																																				
(U) Appropriated Value	12,666	34,410																																																						
(U) Adjustments to Appropriated Value																																																								
a. Congressional/General Reductions																																																								
b. Small Business Innovative Research	-380																																																							
Project 4777	Page 2 of 6 Pages	Exhibit R-2 (PE 0302015F)																																																						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE						
							June 2001						
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT						
07 - Operational System Development				0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER			4777						
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>													
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>					
	c. Omnibus or Other Above Threshold Reprogram												
	d. Below Threshold Reprogram			-326									
	e. Rescissions			-50	-316								
(U)	Adjustments to Budget Years Since FY 2001 PBR			-1,130		-8,955							
(U)	Current Budget Submit/FY 2002 PBR			10,780	34,094	23,359		128,781					
<b>(U) Significant Program Changes:</b>													
FY02: RDT&E and Procurement funding associated with modernization of E-4B and GATM implementation have been re-phased to accommodate the user's requirement to minimize the number of E-4B aircraft in depot status at any time. Both efforts have been split into two phases. Delays associated with the development of the modernization program(now known as E-4B Block 5 Update Program) have necessitated splitting the prototype installations of Block 5 Update and GATM between two different aircraft in different years.													
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>													
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U)	AF RDT&E												
(U)	Other APPN												
(U)	Aircraft Procurement AF, Budget Activity 5, Weapon System Code E00400, PE 0302015F; Mod #MN-4381 (Blk 5) plus Mod #MN-9709 (GATM)			0	0	0	28,262	20,139	31,883	7,306	17,292	0	104,882
<b>(U) E. Acquisition Strategy</b>													
The E-4B NAOC Block 5 Update (formerly E-4B Modernization Program) and the GATM Modifications will be developed and have the prototype and kit-proof installed under the Engineering Services Contract as a Cost Plus Award Fee (CPAF) effort. Procurement and installation of the production kits will be performed under the E-4B Contractor Logistics Support contract as a Firm Fixed Price (FFP) effort.													

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER				PROJECT 4777				
<b>(U) F. Schedule Profile</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete Engineering Trade Studies (Blk 5)	*											
(U) Study and Preliminary Design (GATM)					X				X			
(U) Start Systems Engineering (Blk 5A)		*										
(U) Start Systems Engineering (GATM Phase II)									X			
(U) Complete System Engineering (GATM Phase II) 1QFY04												
(U) Complete Systems Engineering (Blk 5A) 4QFY04												
(U) Purchase Prototype Hardware (GATM)												X
(U) Purchase Prototype Hardware (Blk 5A)										X		
(U) Start Prototype Install (GATM Phase II) 1QFY03												
(U) Complete Prototype Install (GATM Phase II) 4QFY03												
(U) Start Prototype Install (Blk 5A) 4QFY03												
(U) Complete Prototype Install (Blk 5A) 2QFY04												
(U) IOC (GATM Phase II) 4QFY03												
(U) IOC (Blk 5A) 3QFY04												
(U) Purchase Blk 5B Prototype Hardware 1QFY05												
(U) Start Prototype Blk 5B Installation 2QFY06												
(U) Purchase GATM Phase III Prototype Hardware 1QFY05												
(U) Start GATM Phase III Prototype Installation 4QFY05												
(U) IOC GATM Phase III 3QFY06												
(U) IOC Blk 5B 2QFY07												
Note: * Denotes Completed Event. X Denotes Planned Event												

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**RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)**

DATE  
**June 2001**

**BUDGET ACTIVITY**  
**07 - Operational System Development**

**PE NUMBER AND TITLE**  
**0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER**

**PROJECT**  
**4777**

**(U) A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) System Engineering	9,540	16,004	15,550
(U) Purchase Engineering Prototype		14,569	
(U) System Integration, Testing and Documentation		2,262	2,264
(U) Engineering, Prototype Kit Purchase (GATM)			4,095
(U) Contractor System Engineering/ Program Management Support	1,240	1,259	1,450
(U) Total	10,780	34,094	23,359

**(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)**

**(U) Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Boeing	CPAF	Feb 97	TBD	TBD	0	10,398	32,744	21,959	56,848	121,949
<u>Support and Management Organizations</u>										
TRW	T & M	Oct 98	N/A	N/A	0	132	1,160	1,200	3,600	6,092
DISA	TBD	Various	TBD	TBD	0	250	150	150	50	600
<u>Test and Evaluation Organizations</u>										
NSA/FAA	MIPR	N/A	TBD	TBD	0		40	50	50	140

**(U) Government Furnished Property:**

<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
None									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
07 - Operational System Development		June 2001				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER			4777	
<b>(U) Government Furnished Property Continued:</b>						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	10,398	32,744	21,959	56,848	121,949
Subtotal Support and Management	0	382	1,310	1,350	3,650	6,692
Subtotal Test and Evaluation	0		40	50	50	140
Total Project	0	10,780	34,094	23,359	60,548	128,781

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303110F Defense Satellite Communications System</b>					PROJECT <b>2638</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2638	Defense Satellite Communications Sys	3,456	7,261	3,895	2,051	1,194	1,282	0	0	0	624,878
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.											
<b>(U) A. Mission Description</b>											
Defense Satellite Communications System (DSCS) is the backbone of the Government's satellite communications system, providing both secure voice and high data rate transmissions in the Super High Frequency band. DSCS provides unique and vital national security communications for global command and control, crisis management, intelligence and early warning data relay, treaty monitoring and surveillance information, and diplomatic traffic. The communications relayed through DSCS support the National Command Authorities, Defense Information System Network, Diplomatic Telecommunications Service, White House Communications Agency, Air Force Satellite Control Network, and ground mobile forces of all services.											
The DSCS Service Life Enhancement Program (SLEP) includes additional modifications that increase the last four satellites capacity to tactical users by more than 200%, and implements the DoD Space Architect's recommendation.											
The last two DSCS III satellites will launch on the Evolved Expendable Launch Vehicle (EELV) and will require DSCS launch vehicle interface modifications and additional launch loads analyses.											
<b>(U) FY 2000 (\$ in Thousands)</b>											
<b>(U)</b>	\$1,266	System Program Office Operations - Provided Contractor Support - Provided Mission Support									
<b>(U)</b>	\$553	Basic DSCS Program - Paid performance incentives for development satellites still on orbit and operational - Conducted programmatic tradeoffs and analyses									
<b>(U)</b>	\$1,637	Continued DSCS/EELV integration development, transitioning the last two satellites to EELV - Modified DSCS ground equipment - Conducted integration analysis activities									
Project 2638			Page 1 of 6 Pages				Exhibit R-2 (PE 0303110F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0303110F Defense Satellite Communications System</b>	<b>2638</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2000 (\$ in Thousands) Continued</u></p> <p align="right">- Prepared to launch last two satellites on EELV</p> <p>(U) \$3,456 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$1,290 System Program Office Operations</p> <p align="right">- Provide Contractor Support</p> <p align="right">- Provide Mission Support</p> <p>(U) \$315 Basic DSCS Program</p> <p align="right">- Conduct programmatic tradeoffs and analyses</p> <p>(U) \$5,656 Continue DSCS/EELV integration development, transitioning the last two satellites to EELV</p> <p>(U) \$7,261 Total</p> <p>The following net transaction is not reflected in the FY01 program total: BTR=+\$462K. This transaction is not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$1,175 System Program Office Operations</p> <p align="right">- Provide Contractor Support</p> <p align="right">- Provide Mission Support</p> <p>(U) \$265 Basic DSCS Program</p> <p align="right">- Conduct programmatic tradeoffs and analyses</p> <p>(U) \$2,455 Continue DSCS/EELV integration development, transitioning the last two satellites to EELV</p> <p>(U) \$3,895 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in Budget Activity 7, Operational System Development, since DSCS is a fully operational satellite constellation with replenishment satellites awaiting launch, and associated support systems.</p>		
Project 2638	Page 2 of 6 Pages	Exhibit R-2 (PE 0303110F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0303110F Defense Satellite Communications System			2638				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Previous President's Budget (FY 2001 PBR)			5,015	7,328	4,069		626,915			
(U)	Appropriated Value			5,485	7,328						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-442	-51						
	b. Small Business Innovative Research			-1,691							
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram			125							
	e. Rescissions			-21	-16						
(U)	Adjustments to Budget Years Since FY 2001 PBR					-174					
(U)	Current Budget Submit/FY 2002 PBR			3,456	7,261	3,895		624,878			
(U)	<u>Significant Program Changes:</u>										
	None.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	PE 63854F, BPAC 644870, CCS-C, BA-04, Line R-49	0	11,394	13,319	24,386	46,519	25,838	0	0	0	121,456
(U)	Other APPN										
(U)	OPAF, PE 33600F, CCS-C	0	0	5,429	5,635	8,402	2,222	0	0	0	21,688
(U)	MPAF, PE 33110F, DSCS, BA-05, Line P-026	28,612	22,561	27,004	23,003	11,922	4,497	0	0	0	1,581,204
<b>(U) E. Acquisition Strategy</b>											
All satellites have been acquired and two satellites remain to be launched. Enhancements to satellites not launched accomplished through sole source contract awards.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303110F Defense Satellite Communications System					PROJECT 2638		
<b>(U) F. Schedule Profile Continued</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Launch DSCS B8/IABS (Integrated Apogee Boost Subsystem) 9		*										
(U) Launch DSCS B11/IABS 8					*							
(U) SLEP Mod Program Completion								X				
(U) Launch DSCS B6/IABS 7											X	
(U) Launch DSCS A3/IABS 10 (May 03)												
(U) EELV Integration Completion (May 03)												
* = completed event; x = planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303110F Defense Satellite Communications System			PROJECT 2638			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	System Program Office Operations					1,266		1,290		1,175	
(U)	Basic DSCS Program					553		315		265	
(U)	Evolved Expendable Launch Vehicle Integration					1,637		5,656		2,455	
(U)	Total					3,456		7,261		3,895	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin	CPAF/AF	Oct 84/Mar 96	434,629	434,629	434,439	190			0	434,629
	Miscellaneous	CPAF	Various	N/A	N/A	140,089	1,799	5,850	2,720	683	151,141
<u>Support and Management Organizations</u>											
	Aerospace Corp	PO	Various	N/A	N/A	12,900				0	12,900
	Miscellaneous	Various	Various	N/A	N/A	18,311	1,467	1,411	1,175	3,844	26,208
<u>Test and Evaluation Organizations</u>											
	None										
<b>(U) Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
	None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>			<b>0303110F Defense Satellite Communications System</b>		<b>2638</b>	
<b>(U) <u>Government Furnished Property Continued:</u></b>						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						
Subtotal Product Development		574,528	1,989	5,850	2,720	683
Subtotal Support and Management		31,211	1,467	1,411	1,175	3,844
Subtotal Test and Evaluation						
Total Project		605,739	3,456	7,261	3,895	4,527
						624,878

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303112F AIR FORCE COMMUNICATIONS					PROJECT 4884		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4884	Public Key Infrastructure Implementation	0	11,373	31,828	0	0	0	0	0	0	43,201
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
FY03 - 07 budget numbers do not reflect the DoD strategic review results											
(U) <b><u>A. Mission Description</u></b> PUBLIC KEY INFRASTRUCTURE (PKI):											
<p>PKI encompasses the techniques and standards used to manage certificates and public and private keys in order to authenticate the validity of each party involved in an electronic transaction. Department of Defense (DoD) PKI was mandated by the Deputy Secretary of Defense on 8 Aug 97 and the Services were further directed to use the capabilities in a 6 May 99 memo. PKI supports the overall Defense-in-Depth strategy for information assurance capabilities -- user identification, non-repudiation, digital signatures and encryption for government electronic business and network transactions -- protecting/securing all network information.</p> <p>Funds will be used to support initial implementation and integration of PKI user smart card , public key directory storage of the PKI certificates, PKI registration for both users and servers, and initial training. In particular, the RDT&amp;E funds will be applied to the Smart Card/Common Access Card (CAC) to integrate and test with the current Defense Enrollment Reporting System (DEERS)/Real-Time Automated Personnel Identification Systems (RAPIDS) ID and registration system. Additionally, the funds will be used to prototype and test replicating the DoD Public Key directory to each Air Force base-level directory structure. Furthermore, the funds will be used to perform technology integration and testing of new hardware CAC token into the user desktop environment. Finally, a small amount of funds were allotted to the AF SPO for program support activities.</p>											
(U) <b><u>FY 2000 (\$ in Thousands)</u></b>											
(U) \$0 No Activity											
(U) \$0 Total											
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>											
(U) \$7,005 Prototyping support for Interface/Integration of registration Common Access Card tokens, peripheral readers with Air Force-wide computer and communication architectures											
(U) \$3,810 Testing support of Public Key Infrastructure Certificate Directories and other infrastructure components											
(U) \$558 Program and management control (SPO activities)											
Project 4884				Page 1 of 4 Pages				Exhibit R-2 (PE 0303112F)			

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b>			
		<b>June 2001</b>			
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>			
<b>07 - Operational System Development</b>	<b>0303112F AIR FORCE COMMUNICATIONS</b>	<b>4884</b>			
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2001 (\$ in Thousands) Continued</b>					
(U) \$11,373	Total				
<b>(U) FY 2002 (\$ in Thousands)</b>					
(U) \$29,582	Initial implementation of Class 3 Public Key Infrastructure which includes the initial implementation of registration activities (estimated target of 700,000 certificates to users) and the initial rollout of Common Access Cards to AF users; support of initial reader and middleware implementation at bases that will be issued the Common Access Card; initial support of Public Key Infrastructure use of AF Directory Services for certificate status checking				
(U) \$1,049	Testing support of Public Key Infrastructure Certificate Directories and other infrastructure components				
(U) \$1,197	Program and management control (SPO activities)				
(U) \$31,828	Total				
<b>(U) B. Budget Activity Justification</b>					
This is a budget activity 7, Operational System Development because it supports Air Force requirements to prototype, integrate, and test Public Key Infrastructure components including registration and usage hardware/software/middle-ware, Common Access Cards, and directories on Air Force computer systems and networks.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)			11,478	31,648	43,126
(U) Appropriated Value			11,478		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions					
b. Small Business Innovative Research					
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram					
e. Rescissions			-105		
(U) Adjustments to Budget Years Since FY 2001 PBR				180	
(U) Current Budget Submit/FY 2002 PBR			11,373	31,828	43,201
<b>(U) Significant Program Changes:</b>					
<b>Project 4884</b>		<b>Page 2 of 4 Pages</b>		<b>Exhibit R-2 (PE 0303112F)</b>	

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303112F AIR FORCE COMMUNICATIONS</b>				PROJECT <b>4884</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
<b>(U) E. Acquisition Strategy</b>										
Electronic Systems Center (ESC) Information Assurance Product Area Directorate (PAD) manages the AF PKI Program. All major contractors within this program element have been awarded contracts after full and open competition or through existing government contracting vehicles. Contracts are executed via GSA, Standard AF contract (through the Standard Systems Group, AL), and Information Technology Services Program (ITSP) to support engineering effort and equipment for the integration of Common Access Card tokens and prototyping of AF base level directories.										
<b>(U) F. Schedule Profile</b>										
		<u>FY 2000</u>				<u>FY 2001</u>			<u>FY 2002</u>	
		1	2	3	4	1	2	3	4	1
(U) Prototyping support for PKI Interface/Integration of Tokens						X				X
(U) Testing support of Public Key Infrastructure Certificate Directories						X				X
X denotes planned event										
Project 4884			Page 3 of 4 Pages				Exhibit R-2 (PE 0303112F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303112F AIR FORCE COMMUNICATIONS			PROJECT 4884		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Prototyping support for Interface/Integration of registration Common Access Card tokens, peripheral readers with Air Force-wide computer and communication architectures						7,005		29,582	
(U)	Testing support of PKI Certificate Directories and other infrastructure components						3,810		1,049	
(U)	Program and management control (SPO activities)						558		1,197	
(U)	Total						11,373		31,828	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
	Prototyping Support	PR	Dec 00	TBD	TBD		7,005	29,582		36,587
<u>Support and Management Organizations</u>										
	ESC/DIW SPO Activities	PR	Dec 00	TBD	TBD		558	1,197		1,755
<u>Test and Evaluation Organizations</u>										
	Test Support	PR	Dec 00	TBD	TBD	0	0	3,810	1,049	4,859
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>
<u>Subtotals</u>							<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Total Program</u>
	Subtotal Product Development						7,005	29,582		36,587
	Subtotal Support and Management						558	1,197		1,755
	Subtotal Test and Evaluation					0	0	3,810	1,049	4,859
	Total Project					0	0	11,373	31,828	43,201

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0303131F Minimum Essential Emergency Communications Network (MEECN)**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	42,733	15,161	5,982	2,432	2,024	2,070	2,132	2,179	Continuing	TBD
2832 VLF/LF System Improvements	20,533	2,694	1,432	1,162	1,440	1,484	1,514	1,549	Continuing	TBD
4521 DIRECT	1,100	1,224	4,159	879	292	293	309	315	Continuing	TBD
4610 MEECN EHF	21,100	11,243	391	391	292	293	309	315	Continuing	TBD
Quantity of RDT&E Articles	11	4	0	0	0	0	0	0	0	24

FY00: R&D Quantities: MMRT - 7, MMP - 4

FY01: MMP - 4 trainers

FY02: New Start Task: Expand Strategic Automated Command and Control System (SACCS) capability.

FY03-FY07: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

**(U) A. Mission Description**

MEECN systems provide assured communications connectivity between the National Command Authorities (NCA) and the strategic deterrent forces. Currently these systems include the Modified Miniature Receive Terminal (MMRT) with High Data Rate (HIDAR) mode for the E-4B and E-6B aircraft, a Very Low Frequency/Low Frequency (VLF/LF) modification to the Minuteman Launch Control Center (LCC), the Defense Improved Emergency Message Automated Transmission System (IEMATs) Replacement Command and Control Terminals (DIRECT), and Extremely High Frequency (EHF) modification to the Minuteman LCC.

**(U) B. Budget Activity Justification**

This program is in Budget Activity 07 - Operational System Development, because it supports work on currently operating systems.

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

June 2001

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0303131F Minimum Essential Emergency  
Communications Network (MEECN)**

(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	45,285	15,302	2,970	TBD
(U) Appropriated Value	45,907	15,302		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-373	-107		
b. Small Business Innovative Research	-1,668			
c. Omnibus or Other Above Threshold Reprogram	-461			
d. Below Threshold Reprogram	-493			
e. Rescissions	-179	-34		
(U) Adjustments to Budget Years Since FY 2001 PBR			3,012	
(U) Current Budget Submit/FY 2002 PBR	42,733	15,161	5,982	TBD
(U) <u>Significant Program Changes:</u>				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303131F Minimum Essential Emergency Communications Network (MEECN)</b>					PROJECT <b>2832</b>
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2832    VLF/LF System Improvements	20,533	2,694	1,432	1,162	1,440	1,484	1,514	1,549	Continuing	TBD
<p>FY03 - FY07: This administration has not addressed the FY2003-2007 requirements. All FY2003-2007 budget estimates included in this book are notional and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Modified Miniature Receive Terminal (MMRT) Program will modify existing Miniature Receive Terminals (MRTs) and provide High Data Rate (HIDAR - a Joint Staff directed effort to provide a fast and interoperable MEECN mode) capability for installation on the following platforms as a minimum: the E-4B, National Airborne Operations Center (NAOC); and the E-6B, Take Charge and Move Out (TACAMO). This program will make VLF/LF receivers fully interoperable. MRT is a Very Low Frequency/Low Frequency (VLF/LF) receiver without HIDAR. The MMRT program develops and tests HIDAR modifications required to ensure the E-4 and E-6 platforms are interoperable in MEECN.</p> <p>ICBM Launch Control Center (LCC) VLF/LF RDT&amp;E and Production tasks were contractually combined with the MEECN EHF effort. The combined program is referred to as the Minuteman MEECN Program (MMP). The ICBM Prime Integrating Contract (through OO-ALC) is being used as a contracting vehicle. Requirements, estimates and schedules remain the same.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$5,845                    Continued common MMRT and airborne integration development                      (U) \$1,791                    Continued MMRT airworthiness and nuclear certification                      (U) \$1,256                    Continued Communications Evaluation Program (CEP)/Studies and Analysis                      (U) \$11,641                  Completed ICBM LCC VLF/LF integration and development (part of MMP)                      (U) \$20,533                  Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$1,400                    Continue MMRT airworthiness and nuclear certification                      (U) \$1,294                    Continue Communications Evaluation Program (CEP)/Studies and Analysis                      (U) \$2,694                    Total</p> <p>The following net transaction is not reflected in the FY01 Program Total: SBIR = -\$171K. This transaction is not reflected in other sections of the R-Docs where an FY01 total is shown.</p>										
Project 2832			Page 3 of 15 Pages				Exhibit R-2A (PE 0303131F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303131F Minimum Essential Emergency Communications Network (MEECN)</b>	PROJECT <b>2832</b>
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)  
 (U) \$1,432 Continue Communications Evaluation Program (CEP)/Studies and Analysis  
 (U) \$1,432 Total

(U) **B. Project Change Summary**

No significant changes.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Other APPN										
(U) Aircraft Procurement - AF, (MEECN, PE 0303131F, BA-05, P-057)	5,170	18,421	7,184	1,465	0	0	0	0	0	32,240

(U) **D. Acquisition Strategy**

Modified Miniature Receive Terminal (MMRT) Program. Program to satisfy both the Air Force and Navy requirements via a joint effort with the Air Force Electronics Systems Center, Hanscom AFB, MA, as the lead agency. Modifies existing Miniature Receive Terminals (MRTs). EMD contract awarded in FY96 for the E-4B (National Airborne Operations Center (NAOC)); E-6B (Take Charge and Move Out (TACAMO)); and an option for the ICBM Launch Control Centers (LCCs). Airborne MMRT production contract award in FY00. Deployment of airborne Air Force and Navy MMRT units will be complete by 2003. ICBM LCC VLF/LF EMD began in FY99. ICBM LCC VLF/LF EMD tasks and production were coupled with the MEECN EHF effort contractually. The combined program is referred to as the Minuteman MEECN Program (MMP). The ICBM Prime Integrating Contract (through OO-ALC) is being used as a contracting vehicle.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CEP Study and Analysis - Annual Report(s)				*					X			X
(U) Complete EMD for E-4B Aircraft				*								
(U) MMRT Aircraft Milestone III Decision			*									
(U) Production Start					*							

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303131F Minimum Essential Emergency Communications Network (MEECN)</b>	<b>PROJECT</b> <b>2832</b>
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**(U) E. Schedule Profile Continued**

<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
1	2	3	4	1	2	3	4	1	2	3	4

\* Indicates completed task  
 X Indicates planned task

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 2832			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Prime Contract (MMRT)					6,372		1,300			
(U)	ICBM VLF/LF Development (MMP)					11,292					
(U)	Test (Navy)					500		0			
(U)	Program Management Administration (PMA)					594		100			
(U)	SE/TA					519					
(U)	Johns Hopkins University: CEP Studies and Analysis					1,256		1,294		1,432	
(U)	Total					20,533		2,694		1,432	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Rockwell	SS/CPAF	Aug 92	13,500	13,500	13,500				0	13,500
	Rockwell	SS/CPAF	Jul 96	49,238	49,238	41,794	6,244	1,200		0	49,238
	TRW	SS/CPAF	Mar 99	N/A	N/A	4,931	11,162	0		0	16,093
	JHU-APL (SPAWAR SysCen)	MIPR	Annual	N/A	N/A	2,455	1,256	1,294	1,232	Continuing	TBD
<u>Support and Management Organizations</u>											
	SE/TA [SRC, ASEC, MCR ATT, SAFTAS]	Various	As Req'd.	N/A	N/A	2,457	519	0	0	0	2,976
	MITRE	LOE	As Req'd.	N/A	N/A	131	0	0	0	0	131
	PMA	Various	Annual	N/A	N/A	784	594	200	200	Continuing	TBD
	ALCs	MIPR	As Req'd.	N/A	N/A	355				0	355

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 2832		
<b>(U) Performing Organizations Continued:</b>									
<u>Test and Evaluation Organizations</u>									
NavAir Warfare Center	MIPR	As Req'd.	N/A	N/A	5,054	500		0	5,554
AFOTEC	MIPR	As Req'd.	N/A	N/A	204			0	204
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Product Development Property</u>									
N/A					84	258			342
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
Subtotal Product Development					62,764	18,920	2,494	1,232	TBD
Subtotal Support and Management					3,727	1,113	200	200	TBD
Subtotal Test and Evaluation					5,258	500			0
Total Project					71,749	20,533	2,694	1,432	TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303131F Minimum Essential Emergency Communications Network (MEECN)</b>					PROJECT <b>4521</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4521 DIRECT	1,100	1,224	4,159	879	292	293	309	315	Continuing	TBD

FY02 New Start Task: Expand Strategic Automated Command and Control System (SACCS) capability.  
 FY03-07: This administration has not addressed FY2003-2007 requirements. All FY2003-2007 budget estimates included in this book are notional and subject to change.

**(U) A. Mission Description**

The Defense IEMATS Replacement Command and Control Terminals (DIRECT), which is the Improved Emergency Message Automated Transmission System (IEMATS) replacement program, is a Strategic Nuclear Command and Control (C2) system directly supporting the Chairman of the Joint Chiefs of Staff (CJCS) and the National Command Authorities (NCA). DIRECT will provide for all current IEMATS requirements, including the build, release, and transmission of Emergency Action Messages (EAM) to allow the CJCS and warfighters to remain responsive to NCA directives. This program will procure system hardware for seven unified command centers and a software maintenance facility. DIRECT will be compatible with the Defense Message System (DMS) or the directed DMS alternative and interface with all current and future EAM distribution communications systems.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$879 Continued DIRECT EMD
- (U) \$221 Continued Communications Evaluation Program (CEP) Studies and Analysis
- (U) \$1,100 Total

**(U) FY 2001 (\$ in Thousands)**

- (U) \$977 Begin EMD to develop Interface between DIRECT and DMS
- (U) \$247 Continue Communications Evaluation Program (CEP) Studies and Analysis
- (U) \$1,224 Total

The following net transaction is not reflected in the FY01 Program Total: SBIR = -\$78K. This transaction is not reflected in other sections of the R-Docs where an FY01 total is shown.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE June 2001			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303131F Minimum Essential Emergency Communications Network (MEECN)</b>				PROJECT <b>4521</b>			
<b>(U) A. Mission Description Continued</b>											
<b>(U) FY 2002 (\$ in Thousands)</b>											
(U)	\$909	Continue EMD to develop Interface between DIRECT and DMS									
(U)	\$3,000	Expand Strategic Automated Command and Control System (SACCS) capability									
(U)	\$250	Continue Communications Evaluation Program (CEP) Studies and Analysis									
(U)	\$4,159	Total									
<b>(U) B. Project Change Summary</b>											
FY02: Funds added to expand user base for EAM dissemination due to AUTODIN closure.											
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	Other APPN										
(U)	Other Procurement - AF, MEECN, PE 0303131F, BA-03, P-046)	5,114	1,494	2,078	1,084	0	0	0	0	22,975	
<b>(U) D. Acquisition Strategy</b>											
DIRECT Program. A contract for EMD was awarded to GTE Government Systems (now General Dynamics-Communications Systems), Needham, MA on 12 Jul 96. A contract modification for production (using Other Procurement, AF) was awarded 11 Aug 98.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U)	CEP Study and Analysis - Annual Report						*			X	X
(U)	Production Start							*			
(U)	Initial Operational Test and Evaluation								*		
(U)	Begin DMS Interface EMD							*			
	* Indicates completed task										
	X Indicates planned task										
Project 4521				Page 9 of 15 Pages				Exhibit R-2A (PE 0303131F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)				PROJECT 4521		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Prime Contract					381		600		3,724	
(U)	Program Management Administration (PMA)					233		168		125	
(U)	SE/TA					306		276		130	
(U)	CEP/Studies and Analysis					180		180		180	
(U)	Total					1,100		1,224		4,159	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	GTE	SS/CPAF	Jul 96	N/A	N/A	28,204	381	600	3,849	Continuing	TBD
	National Security Agency (NSA)	MIPR	Annually	2,300	2,300	2,300				0	2,300
	JHU-APL	LOE	Annual	N/A	N/A	0	180	180	180	Continuing	TBD
<u>Support and Management Organizations</u>											
	SE/TA [ASEC, ABACUS, MCR, ATT, SAFTAS]	LOE	As Req'd.	N/A	N/A	2,427	306	276	130	Continuing	TBD
	MITRE	LOE	As Req'd.	N/A	N/A	2,668	0	0		Continuing	TBD
	PMA	Various	Annual	N/A	N/A	945	233	168	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	Various	Various	As Req'd.	N/A	500	471	0	0		Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 4521		
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Item</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				30,504	561	780	4,029	TBD	TBD
Subtotal Support and Management				6,040	539	444	130	TBD	TBD
Subtotal Test and Evaluation				471	0	0		TBD	TBD
Total Project				37,015	1,100	1,224	4,159	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303131F Minimum Essential Emergency Communications Network (MEECN)</b>					PROJECT <b>4610</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4610	MEECN EHF	21,100	11,243	391	391	292	293	309	315	Continuing	TBD
<p>This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>                      This MEECN project will provide reliable, secure, and survivable communications in the Extremely High Frequency (EHF) band. Specifically, this effort is currently focused on replacing the satellite-based, ground communication links with Minuteman ICBM forces. It supplants the ICBM Super High Frequency (SHF) Satellite Terminal (ISST) receipt, providing force direction/execution, and the Ultra High Frequency (UHF) report-back links. ISST relies upon the Single Channel Transponder (SCT) package aboard the Defense Satellite Communications System (DSCS). The SCT will not be flown on the DSCS after 2003. Extending the use of SCT aboard DSCS is not practical. The UHF links depend upon the Air Force Satellite Communications (AFSATCOM) packages hosted aboard the Fleet Satellite Communications (FLTSATCOM) satellites. FLTSATCOM satellites are past their life expectancy. MEECN EHF is required to meet redundancy standards established by national security directives. MEECN EHF was identified as a new start effort in the FY99 budget documentation. This project was combined contractually with the ICBM Launch Control Center (LCC) Very Low Frequency/Low Frequency (VLF/LF) tasks from Project 2832 and together are referred to as the Minuteman MEECN Program (MMP).</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$14,800            Continue EHF EMD                      (U) \$6,060            Continue Integration and Test                      (U) \$240                Continue Communications Evaluation Program (CEP) Studies and Analysis                      (U) \$21,100            Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$6,321            Complete EHF and VLF/LF EMD                      (U) \$4,648            Complete Integration and Test                      (U) \$274                Continue Communications Evaluation Program (CEP) Studies and Analysis                      (U) \$11,243            Total</p> <p>The following net transactions are not reflected in the FY01 Program Total: BTR = +\$4,964K and SBIR = -\$715K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.</p>											
Project 4610			Page 12 of 15 Pages				Exhibit R-2A (PE 0303131F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																																																																											
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303131F Minimum Essential Emergency Communications Network (MEECN)</b>			PROJECT <b>4610</b>																																																																																																											
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$391 Continue Communications Evaluation Program (CEP)/Studies and Analysis</p> <p>(U) \$391 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>FY00 and FY01: Funds added to complete EMD. MS III slipped to Sep FY01 for delayed purchase of parts used in weapon system test.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:8%;"><u>FY 2000</u></th> <th style="width:8%;"><u>FY 2001</u></th> <th style="width:8%;"><u>FY 2002</u></th> <th style="width:8%;"><u>FY 2003</u></th> <th style="width:8%;"><u>FY 2004</u></th> <th style="width:8%;"><u>FY 2005</u></th> <th style="width:8%;"><u>FY 2006</u></th> <th style="width:8%;"><u>FY 2007</u></th> <th style="width:8%;"><u>Cost to</u></th> <th style="width:8%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Other APPN</td> <td></td> </tr> <tr> <td>(U) Missile Procurement -AF, (MEECN, PE 0303131F, BA 03, P-012)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">47,628</td> <td style="text-align: center;">43,262</td> <td style="text-align: center;">0</td> <td style="text-align: center;">90,890</td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b></p> <p>The ICBM Prime Integrating Contract (through OO-ALC) is being used as a contracting vehicle for the Minuteman LCC VLF/LF and EHF modifications known as Minuteman MEECN Program (MMP).</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th colspan="3" style="text-align: center;"><u>FY 2000</u></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) CEP Study and Analysis</td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) MMP Milestone III Decision</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Production start</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>* Indicates completed task X Indicates planned task</p>										<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) Other APPN											(U) Missile Procurement -AF, (MEECN, PE 0303131F, BA 03, P-012)	0	47,628	43,262	0	0	0	0	0	0	90,890		<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) CEP Study and Analysis				*					X			X	(U) MMP Milestone III Decision									X				(U) Production start									X									
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																								
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	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																						
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Project 4610			Page 13 of 15 Pages			Exhibit R-2A (PE 0303131F)																																																																																																												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 4610			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Prime Contract					19,902		10,819		0	
(U)	Program Management Administration (PMA)					547		99		0	
(U)	SE/TA					318		75		0	
(U)	MITRE					200		100		0	
(U)	JHU-APL					133		150		391	
(U)	Total					21,100		11,243		391	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	TRW	SS/CPAF	Mar 99	42,004	42,004	11,195	19,707	10,819		0	41,721
	JHU-APL	LOE	Annual	N/A	N/A	48	133	150	391	Continuing	TBD
<u>Support and Management Organizations</u>											
	SE/TA [SRC, MCR, ATT, SAFTAS]	LOE	As Req'd.	N/A	N/A	400	318	75		Continuing	TBD
	MITRE	LOE	As Req'd.	N/A	N/A	200	395	100		Continuing	TBD
	PMA	Various	Annual	N/A	N/A	200	547	99		Continuing	TBD
<u>Test and Evaluation Organizations</u>											
<b>(U) Government Furnished Property:</b>											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Project 4610											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
07 - Operational System Development				4610					
PE NUMBER AND TITLE				PROJECT					
0303131F Minimum Essential Emergency Communications Network (MEECN)				4610					
<b>(U) Government Furnished Property Continued:</b>									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>or Funding</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				11,243	19,840	10,969	391	TBD	TBD
Subtotal Support and Management				800	1,260	274		TBD	TBD
Subtotal Test and Evaluation									
Total Project				12,043	21,100	11,243	391	TBD	TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**June 2001**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0303140F Information Systems Security Program**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	20,274	29,232	7,936	8,010	8,152	8,300	8,467	8,647	Continuing	TBD
4579 Information Warfare	9,536	5,640	1,892	1,881	1,920	1,959	2,028	2,071	Continuing	TBD
4585 Cryptologic 2020	1,228	0	0	0	0	0	0	0	0	TBD
4871 Information Operations Technology	0	982	996	996	997	997	1,017	1,038	Continuing	TBD
7820 Computer Security RDT&E: Firestarter	9,510	22,610	5,048	5,133	5,235	5,344	5,422	5,538	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

This administrations has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

BPAC 674585, Cryptologic 2020, will be funded under PE 33401F, Comm Sec, BPAC 674861, Cryptologic 2020, beginning in FY01.

**(U) A. Mission Description**

This program provides the capability to protect and defend USAF Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance (C4ISR) and Weapon Systems from Information Warfare (IW) attacks; and to recover from those attacks. Primarily, the project does research and development of information protection tools and transitions them to operational systems. The program element consists of several complimentary BPACs. The Information Warfare BPAC provides the acquisition community and operational warfighters the ability to manage their own risks relative to mission, task, threat, and vulnerability information; and to mitigate IW risks based on rank-ordered countermeasure recommendations. The Cryptologic 2020 project comprises R&D for the Air Force Electronic Key Management System (AFEKMS). The AFEKMS, in concert with National Security Agency's (NSA's) EKMS, provides a secure and flexible capability for the electronic generation, distribution, and management of key material, voice callwords, and Communications Security (COMSEC) publications for the F-22. AFEKMS replaces the existing physical distribution and management system providing COMSEC KEYS for USAF Information Protection. The Air Force unique AFEKMS software is required because the production software developed by NSA cannot provide the capabilities to distribute the system keys in the format needed by the F-22 Mission Support System. The Info Ops (IO) Technology BPAC concentrates on transitioning state-of-the-art IO capabilities to the warfighter through demonstrations of those technologies and rapid prototyping of warfighter tools. It also funds the IW Mission Area Team (MAT), the IW Technology Planning IPT (IW

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303140F Information Systems Security Program</b>
--	--

(U) **A. Mission Description Continued**  
 TPIPT), and the Panther Den program office. The computer security project directs the R&D of information protection technology and tools to defend C4ISR systems, with emphasis on computer and network systems security, damage assessment and recovery, and multi-level systems security. It provides access control, integrity, assured services and meets warfighter's requirements. This includes the Public Key Infrastructure (PKI) integration work which will ensure user identification, non-repudiation, digital signatures and encryption for electronic business and network transactions for all AF network users.

(U) **B. Budget Activity Justification**  
 This program is in budget activity 7, Operational System Development, because it addresses the development and transition of information security, protection and defensive capabilities and technologies.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	7,992	7,212	6,944	TBD
(U) Appropriated Value	19,492	29,503		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research	-484			
c. Omnibus or Other Above Threshold Reprogram	-5			
d. Below Threshold Reprogram	1,347			
e. Rescissions	-76	-271		
(U) Adjustments to Budget Years Since FY 2001 PBR			992	
(U) Current Budget Submit/FY 2002 PBR	20,274	29,232	7,936	TBD

(U) **Significant Program Changes:**  
 Funding: Congressional \$3.8M add in FY01 for management of the Cyber Lighthouse Security Technology Program (BPAC 4579); \$10M add for continued development of the Coordinated Distributed Attack Detection System (CDADS) (BPAC 7820); \$5.5M add for PKI; and \$2.0M add for exploration/modification of COTS products for Government PKI purposes (BPAC 7820).

FY2000 program total does not reflect an additional \$-2,546 K BTR.

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>	PROJECT <b>4579</b>
---	---	------------------------

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4579 Information Warfare	9,536	5,640	1,892	1,881	1,920	1,959	2,028	2,071	Continuing	TBD

This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

**(U) A. Mission Description**

Builds information protection into all AF Command and Control ( C2), Intelligence, Surveillance, and Reconnaissance (ISR), and weapons systems. The project provides the acquisition community and operational warfighters the ability to manage the IW risks to their missions and operational tasks based on system threat and vulnerability information. Provides decision makers with countermeasure recommendations, rank-ordered based on operational utility and relative cost. Looking across all assessments conducted on AF systems, the project also provides the USAF a unique system-of-systems perspective for managing shared IW risks.

Information Warfare Vulnerability Assessment and Risk Management (IW VA/RM): Development and sustainment of a new capability to manage both individual and shared Information Warfare (IW) risks across all AF C2 and weapon systems. This will enable AF acquisition programs to meet the information assurance requirements of AFD 10-20, Para 12. The IW VA/RM program enhances a commercially-available risk management tool so that it (1) provides risk management solutions based on mission impact and user cost; and (2) seamlessly combines Government Threat, Vulnerability and Countermeasure (TVC) data with commercial TVC data at the point of use. The IW VA/RM program also initiates the production of the Government TVC data; and the process of setting up a management infrastructure to coordinate all future TVC data production and distribution, similar to that established under AFI 10-703, Electronic Warfare Integrated Reprogramming (EWIR). Together, the tool with the data and supporting infrastructure will enable all AF System Program Offices (SPOs) to evaluate their system's IW risks and propose mission-based mitigation strategies to their users as part of a coordinated, coherent effort. To provide the overview needed to manage the shared risk across all AF systems, the IW VA/RM program establishes the means to aggregate individual SPO risk assessment results and report them based on higher-echelon mission impact. These reports will provide vital information on trends, deficiencies, and rationale for the AF Modernization Planning Process.

IW Technical Planning Integrated Product Team (IW TPIPT): Supports modernization planning for Counterinformation (CI) Mission Area and Technology Planning Processes (i.e. MAP and TPIPT). Continuously identifies and evaluates commercial and Government inventory of available products that can be used to meet Counterinformation mission deficiencies. Develops and coordinates technology development and acquisition plans for resolving mission area deficiencies. Provides Government laboratories and private industry guidance on new technologies needed for the next 10 to 25 years.

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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

June 2001

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0303140F Information Systems Security Program**

PROJECT

**4579**(U) **A. Mission Description Continued**(U) FY 2000 (\$ in Thousands)

(U) \$1,300 Continue exportable VA/RM process and toolset development  
 (U) \$261 Establish infrastructure: Intelligence support, metrics, etc.  
 (U) \$315 Continue to develop and update libraries and databases, system-of-systems model  
 (U) \$313 Continue IW TPIPT activities, analyses, database support  
 (U) \$326 Continue integrated cross program assessments and solution development  
 (U) \$7,021 Manage Cyber Lighthouse Security Technology Development Program (Congressional add)  
 (U) \$9,536 Total

(U) FY 2001 (\$ in Thousands)

(U) \$1,024 Continue exportable VA/RM process and toolset development  
 (U) \$80 Establish and support existing infrastructure: Intelligence support, metrics, etc.  
 (U) \$80 Continue to develop and update libraries and databases, system-of-systems model  
 (U) \$186 Continue IW TPIPT activities, analyses, database support  
 (U) \$472 Continue to integrate cross program assessments and solution development  
 (U) \$3,798 Manage Cyber Lighthouse Security Technology Development Program (Congressional Add)  
 (U) \$5,640 Total

The following net transactions are not reflected in the FY01 program total: BTR=-122 K, ATR=0 K, and SBIR=-251 K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) FY 2002 (\$ in Thousands)

(U) \$1,035 Continue exportable VA/RM process and toolset development  
 (U) \$89 Establish and support existing infrastructure: Intelligence support, metrics, etc.  
 (U) \$90 Continue to develop and update libraries and databases, system-of-systems model  
 (U) \$196 Continue IW TPIPT activities, analyses, database support  
 (U) \$482 Continue to integrate cross program assessments and solution development  
 (U) \$1,892 Total

(U) **B. Project Change Summary**

N/A

Project 4579

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Exhibit R-2A (PE 0303140F)

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303140F Information Systems Security Program</b>	<b>PROJECT</b> <b>4579</b>
--	--	-------------------------------

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN none										

(U) **D. Acquisition Strategy**

All major contracts within this Program Element are awarded after full and open competition.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Develop and iterate versions of the Exportable VA/RM process & tool set	*		*		*		X		X		X	
(U) Develop and iterate versions of the infrastructure, libraries, and database	*		*		*	*		X		X		X
(U) Intelligence Support Plan signed	*											
(U) Estab VA/RM infrastructure: Intell support, metrics measurement, etc.	*				*		X		X		X	
(U) Periodic check to ensure integration of cross program assessments	*		*		*		X		X		X	
(U) Sustain IW TPIPT technology database (quarterly reviews)	*	*	*	*	*	*	X	X	X	X	X	X
(U) Sustain IW TPIPT technology development plan (annual)			*				X				X	
(U) Continue IW TPIPT activities, analysis, database support	*		*		*		X		X		X	
(U) Continue exportable VA/RM process & tool set devel. Build bus model						*	X	X	X	X	X	X
(U) Develop training, equipping, & manning for the business model						*	X	X	X	X	X	X
(U) Develop government source vulnerability database. Execute bus model								X	X	X	X	X
(U) Integrate cross program assessment & solution development	*	*	*	*	*	*	X	X	X	X	X	X

\* Denotes Completed Events  
X Denotes Planned Events

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program			PROJECT 4579		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Software development				4,523		2,730			848
(U)	Systems engineering support				4,307		2,802			920
(U)	Program management support				706		108			124
(U)	Total				9,536		5,640			1,892
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Trident Data Systems	FFP	Aug 98			0	1,108	811	820	Continuing	TBD
MITRE	FFRDC	On-going			0	2,342	2,491		0	4,833
Lincoln Labs	FFRDC	On-going			0	2,344	491		0	2,835
Carnegie-Mellon Software Engineering Institute (SEI)	FFRDC	On-going			0	2,344	791		0	3,135
<u>Support and Management Organizations</u>										
MITRE	FFRDC	On-going			0	750	758	765	Continuing	TBD
ITSP (various)	ID/IQ	On-going			0	393	227	232	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Test & Evaluation					0	255	71	75	Continuing	TBD
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	8,138	4,584	820	TBD	TBD
Subtotal Support and Management					0	1,143	985	997	TBD	TBD
Subtotal Test and Evaluation					0	255	71	75	TBD	TBD
Total Project					0	9,536	5,640	1,892	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>	PROJECT <b>4585</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4585 Cryptologic 2020	1,228	0	0	0	0	0	0	0	Continuing	TBD

This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

**(U) A. Mission Description**

NOTE: FY99 through FY00 funds are in PE 33140. Beginning in FY01, this effort will be funded in PE 33401.

The Cryptologic project consists of Air Force Electronic Key Management Systems (AFEKMS). AFEKMS, in concert with NSA's EKMS, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for all AF weapon systems. AFEKMS replaces the existing physical distribution and management system providing COMSEC keying material for USAF Information Protection. Information Protection emphasizes access control, multi-level secure databases, trusted computing and information integrity. AFEKMS is a three tier system structure in a hierarchical arrangement. This tiered structure provides 'wholesale' to 'retail' to 'consumer' capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the 'wholesale' capability. Tier 2 installations comprise the distribution network and tier 3 comprises the 'retail locations' where keying material leaves the AFEKMS and enters the End Item COMSEC Equipment (EICE) - the consumer.

Acquisition includes Commercial Off The Shelf (COTS) computers and software, contractor developed application software, Government Furnished Equipment (GFE) and software such as the NSA's Local COMSEC Management Software (LCMS). Also, USAF developed application software (UAS) is necessary for unique systems such as the F-22 and unique key fill requirements of EICE for other airborne platforms.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$98 Transition LCMS application software development/sustainment (F-22) to Air Force
- (U) \$1,130 Complete LMD/DMD software development and system integration
- (U) \$1,228 Total

**(U) FY 2001 (\$ in Thousands)**

- (U) \$0 No Activity
- (U) \$0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>					PROJECT <b>4585</b>	
(U) <b><u>A. Mission Description Continued</u></b>											
(U) <u>FY 2002 (\$ in Thousands)</u>											
(U) \$0 No Activity											
(U) \$0 Total											
(U) <b><u>B. Project Change Summary</u></b>											
N/A											
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
(U)	APPN 3600/PE 33401F/ PE	0	4,823	4,107	4,932	4,837	3,883	3,945	4,026	Continuing	TBD
Title Comm Security/ BPAC											
674861/ Cryptologic 2020											
(U)	APPN 3600/PE 64239F/PE									Continuing	TBD
Title F-22/BPAC											
654069/BPAC Title Adv.											
Tactical Fighter											
NOTE: BPAC 674585, Cryptologic 2020, will be funded under PE 33401,Comm Sec, BPAC 674861, Cryptologic 2020, beginning in FY01.											
(U) <b><u>D. Acquisition Strategy</u></b>											
All major contracts within this Program Element are awarded after full and open competition.											
(U) <b><u>E. Schedule Profile</u></b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U)	Compete F-22 UAS Development & Transition										
(U)	Complete DMD/DTD 2000 hardware/software develop & system integration										
	* Denotes Completed Events										
Project 4585											
Page 8 of 23 Pages											
Exhibit R-2A (PE 0303140F)											

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>	PROJECT <b>4585</b>
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(U) E. Schedule Profile Continued

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
X Denotes Planned Events												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program			PROJECT 4585			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Hardware Development							0			
(U)	Software Development					1,228					
(U)	Total					1,228		0			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Motorola Inc.	SS/CPFF	Apr 97	N/A	N/A	51		0		Continuing	TBD
	(F19628-97-C-0600)										
	SAIC	BPA	May 98	N/A	N/A	823	1,228	0		Continuing	TBD
	(GS-35F-44616)										
	National Security Agency X35SS/CPFF		Jun 98	N/A	N/A	517		0		Continuing	TBD
	<u>Support and Management Organizations</u>										
	Trustest S/W Support					159				Continuing	TBD
	MSN Support					90				Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001			
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>		<b>0303140F Information Systems Security Program</b>			<b>4585</b>		
<b>(U) Government Furnished Property Continued:</b>							
Total Project							
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>							
Subtotal Product Development		1,391	1,228	0		TBD	TBD
Subtotal Support and Management		249				TBD	TBD
Subtotal Test and Evaluation							
Total Project		1,640	1,228	0		TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program					PROJECT 4871	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4871 Information Operations Technology	0	982	996	996	997	997	1,017	1,038	Continuing	TBD
<p>This administrations has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>(U) This program expedites Information Operations (IO) Technology transition from laboratory, industry, and academia to operational use via studies, rapid prototyping, and demonstrations.</p> <p>(U) The program office investigates and selects the highest potential IO technologies to meet specific shortfalls and deficiencies documented by major commands (MAJCOMS), unified commands, and IO agencies in Mission Area Plans (MAPs) and Mission Need Statements (MNSs). IO areas considered include: Psychological Operations (PSYOP), Electronic Warfare, Military Deception, Physical Attack, Information Attack, Information Assurance, Operationa Security (OPSEC), Counterintelligence, Counter PSYOP, Electronic Protection, and Counterdeception.</p> <p>(U) The program office works directly with labs, industry, users and battlabs to set priorities and find synergistic combinations of new technology, doctrine and training. Program efforts will be prioritized and guided by the Information Warfare (IW) Technical Planning Integrated Planning Team (TPIPT) in support of the Air Force IW MAP and the DoD IO Master Plan.</p> <p>(U) Planned areas of study prototyping, and /or demonstration include techniquet and technologies for defending systems against sophisticated Information Warfare (IW) and computer network attacks, exploiting Integrated Air Defense Systems (IADS), Command and Control systems, and applying advanced IO applications in emerging physics, communications, directed energy, electronic sensors, and intelligence.</p> <p>(U) This program also funds the Panther Den program office at Hanscom AFB, MA. The Panther Den program office provides technical, program management, and security support to the programs funded by this PE, as well as PD-classified projects funded via other PEs.</p> <p>(U) Specific program content is classified. Current and historical project information is available in the Panther Den (PD) Special Access Program (SAP) Report.</p>										
Project 4871			Page 12 of 23 Pages				Exhibit R-2A (PE 0303140F)			

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>	PROJECT <b>4871</b>
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(U) **A. Mission Description Continued**

(U) FY 2000 (\$ in Thousands)

(U) \$0 No Activity  
(U) \$0 Total

(U) FY 2001 (\$ in Thousands)

(U) \$347 Directed Energy Application to IW  
(U) \$74 Advanced IO Communication Application  
(U) \$65 Advanced Intelligence Applications to IO  
(U) \$298 Mitre Chief Engineer Support  
(U) \$198 Program Office and Security Structure Support  
(U) \$982 Total

The following net transactions are not reflected in the FY01 program total: BTR = -122K, ATR = 0, and SBIR = -251K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

(U) FY 2002 (\$ in Thousands)

(U) \$492 The IO Technology program office will support the IW TPIPT and the IW MAT through studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements.  
(U) \$302 Mitre Chief Engineer Support  
(U) \$202 Program Office and Security Structure Support  
(U) \$996 Total

(U) **B. Project Change Summary**

In FY01, \$500K was transferred from PE 0208021F, Information Warfare Support, to support information operations development in this program element.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										0
(U) Other APPN										0

PE 0303140F studies will leverage current DoD lab efforts. Studies will be deconflicted with and will complement PE 0208021F, Information Warfare Support. Some aspects of this program will be protected under the PANTHER DEN Special Access Program. Data available upon request.

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>	PROJECT <b>4871</b>
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(U) **D. Acquisition Strategy**  
 All major contracts within this Program Element are awarded after full and open competition unless other than full and open is justified to the Designated Acquisition Commander (DAC).

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Sophisticated IW Defense Study Start		*										
(U) Directed Energy Application to IW					X							
(U) Advanced IO Communication Application									X			
(U) Advanced Intelligence Applications to IO									X			
(U) IO Technology Study/Prototype/Demo										X		X

X - Denotes planned event  
 \* - Denotes completed event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program			PROJECT 4871		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>			
(U)	Directed Energy Application to IW					347				
(U)	Advanced IO Communication Application					74				
(U)	Advanced Intelligence Applications to IO					64				
(U)	Mitre Chief Engineer Support					299				
(U)	Program Office and Security Support					198				
(U)	IO Technology Study/Prototype/Demo							492		
(U)	Mitre Chief Engineer Support							302		
(U)	Program Office and Security Support							202		
(U)	Total						982	996		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Contractor TBD							347	492	Continuing	TBD
Contractor TBD							74		Continuing	TBD
Contractor TBD							64		Continuing	TBD
<u>Support and Management Organizations</u>										
Electronic Systems Center							78	80	Continuing	TBD
Aegis, Inc. (Security Contractor)							120	122	Continuing	TBD
Mitre (Engineering Support)							299	302	Continuing	TBD
<u>Test and Evaluation Organizations</u>										

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303140F Information Systems Security Program</b>			<b>4871</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development					485	492
Subtotal Support and Management					497	504
Subtotal Test and Evaluation						
Total Project					982	996
						TBD
						TBD
						TBD
						TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program						PROJECT 7820	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
7820	Computer Security RDT&E: Firestarter	9,510	22,610	5,048	5,133	5,235	5,344	5,422	5,538	Continuing	TBD
<p>This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates in this book are notional only and subject to change.</p> <p>FY01 and FY02 PKI funds are in PE 33112F. This submission reflects a Congressional add of \$5.5M to accelerate the PKI program.</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>This program directs the Research &amp; Development (R&amp;D) of Information Protect technology/tools to provide the capability to defend USAF Command, Control, Communications, Computer, and Intelligence (C4I) Systems from Information Warfare (IW) Cyber attacks; and to ensure the systems' recovery from these attacks. As the USAF single manager for Information Protect (R&amp;D), this program directs C4I system Information Protect R&amp;D with emphasis in computer/network systems security, damage assessment and recovery, and multi-level security. With the advent of the information age, the battlefield commander's ability to fight and win becomes more dependent upon the availability, timeliness, and integrity of the information flow/processing capability available. The requirement for global presence and global power has demanded increasing reliance on these advanced information systems with global accessibility. The susceptibilities inherent in such reliance and accessibility has heightened the awareness that the National Information Infrastructure (NII), the Defense Information Infrastructure (DII), and the future global Info Grid (GIG) must be protected against attack.</p> <p>Emphasis is therefore placed on R&amp;D areas that provide deterrence of attack through cyberspace surveillance, Tactical Indications &amp; Warning (I&amp;W), intrusion detection, characterization of attack, decision support, recovery, and active response. Since adversaries may gain access to critical AF Force information systems through a variety of means, this technology will provide the capability of collecting, integrating, and displaying threat, vulnerability, and system data indicating an attack is about to take place and/or is taking place. Current Air Force systems such as the Combat Information Transport Systems (CITS), Theater Deployable Communications (TDC) leverage the technology from this project to meet their info protect needs/requirements. Additionally, this project utilizes info assurance technology investments by DARPA as a jump-start for providing a solution to Air Force requirements and cooperates with DISA and other Services/agencies to ensure DII and the future GIG info protect requirements are complied with.</p> <p>Public Key Infrastructure (PKI): A Department of Defense (DoD) PKI was mandated by the Deputy Secretary of Defense on 8 Aug 97 and the Services were further directed to use the capabilities in a 6 May 99 memo. PKI, supports the overall Defense-in-Depth Strategy for information assurance capabilities -- user identification, non-repudiation, digital signatures and encryption for government electronic business and network transactions -- protecting/securing all network information.</p>											
Project 7820		Page 17 of 23 Pages						Exhibit R-2A (PE 0303140F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0303140F Information Systems Security Program</b>	<b>7820</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<p>Funds will be used to support initial implementation and integration of PKI user smart card, PKI registration for both users, devices, servers, and initial training. In particular, the RDT&amp;E funds will be applied to PKI's integration and testing efforts with the Smart Card/Common Access Card (CAC). Current Defense Enrollment Reporting System (DEERS)/Real-Time Automated Personnel Identification Systems (RAPIDS) will be used to issue CACs to all AF military and civilian personnel. Furthermore, we will perform technology integration and testing of a new hardware CAC token into the user desktop environment. Finally, we allotted a small amount for AF SPO program support activities.</p>		
<b>(U) <u>FY 2000 (\$ in Thousands)</u></b>		
(U) \$250	Continue development of technology for self-healing network systems (to include automated system recovery)	
(U) \$125	Begin development of information attack correlation methodologies	
(U) \$569	Continue effort to transition DARPA information assurance technology to the Air Force Information Warfare Center (AFIWC) and the Combat Information Transport System (CITS) SPO	
(U) \$300	Continue development of methodologies for commercial software evaluation and steganography detection	
(U) \$4,692	Continue development of secure interoperable distributed agent computing (\$4.5M Congressional Add)	
(U) \$134	Begin development of extensible prototype framework for Enterprise Defense to support protection of warfighter mission critical information flows	
(U) \$350	Continue effort to transition secure wrapper technologies into Air Force systems	
(U) \$3,090	Initiate Pouncer 4 project - approved FY00 new start effort	
(U) \$9,510	Total	
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$1,251	Continue development of technology for self-healing network systems (to include automated system recovery)	
(U) \$742	Continue development of information attack correlation methodologies	
(U) \$2,651	Continue development of methodologies for commercial software evaluation and steganography detection (\$2.0M Congressional add)	
(U) \$862	Continue development of extensible prototype framework for Enterprise Defense to support protection of warfighter mission critical information flows	
(U) \$461	Continue effort to transition secure wrapper technologies into Air Force systems	
(U) \$752	Continue effort to transition DARPA information assurance technology into AF Information Protect architecture	
(U) \$402	Begin effort to develop metrics for reliable information assurance measurement & testing	
(U) \$9,995	Continue development of secure interoperable agent computing	
<b>Project 7820</b>	Page 18 of 23 Pages	Exhibit R-2A (PE 0303140F)



**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>	PROJECT <b>7820</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E	9,510	22,610	5,048	5,133	5,235	5,344	5,422	5,538		63,840
(U) Other APPN APPN 3600/PE 33112F/ PE Title AF Communca- tions/BPAC 674884/ Title PKI										

(U) **D. Acquisition Strategy**

All major contracts within this Program Element are awarded after full and open competition.

PKI: Electronic Systems Center (ESC) Information Assurance Product Area Directorate (PAD) manages the AF PKI Program. All major contracts within this program element are scheduled to be awarded after full and open competition or through existing government contracting vehicles. The options under review include: GSA, Standard AF contract (through the Standard Systems Group, AL), and Information Technology Services Program (ITSP) to support engineering effort and equipment for the integration of Common Access Card tokens. Current PKI program strategy is to use the ITSP contract.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Requirements Review Boards			*			*				X		
(U) Transition secure wrapper tech development to AF systems										X		
(U) Development of self healing network systems								X				
(U) DARPA information assurance transition					*							X
(U) Devel technology for tracing intrusions										X		
(U) Information attack correlation technology development	*						X					X
(U) Develop & demo extensible prototype framework for Enterprise Defense	*			*		*		X		X		X
(U) Develop metrics for reliable IA measurement & testing						*				X		
(U) Develop automated info damage assessment and recovery					*				X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>					PROJECT <b>7820</b>				
<b>(U) E. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
(U)	Begin effort to evaluate biometric systems								X					
(U)	Begin development of cyber forensic tools & methodologies						*							
(U)	Prototyping support for PKI interface/integration of tokens				*									
(U)	Initiate Pouncer 4				*									
<p>KEY: * Denotes Completed Events; X Denotes Planned Events.</p>														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program			PROJECT 7820		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Pouncer 4				3,090					
(U)	DARPA technology insertion/transition				569		752		437	
(U)	Secure distributed computing/collaborative planning				4,692		10,516		283	
(U)	Self-healing network system (to include automated system recovery)				250		346		847	
(U)	Wrappers to secure commercial-off-the-shelf ( COTS)				350		461		337	
(U)	Information attack data correlation				125		752		538	
(U)	Extensible framework for Enterprise Defense				134		862		888	
(U)	COTS software (S/W) evaluation				300		2,651		917	
(U)	Reliable information assurance measurement & testing						402		427	
(U)	PKI						5,494			
(U)	Active response & cyber forensic tools						374		374	
(U)	Total				9,510		22,610		5,048	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
FFRDC (MITRE)	MIPR	On-Going	N/A	N/A	652	746	6,311	410	Continuing	TBD
Multiple Contractors	CPFF	On-Going	N/A	N/A	2,277	7,918	13,690	4,238	Continuing	TBD
Universities	CPFF	On-Going	N/A	N/A	368	846	2,609	400	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										



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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

June 2001

BUDGET ACTIVITY

PE NUMBER AND TITLE

**07 - Operational System Development**

**0303141F Global Combat Support System (GCSS)**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19,636	45,943	48,911	47,285	46,739	47,279	47,783	46,590	Continuing	TBD
4655 Integrated Logistics System - Supply (ILS-S)	19,636	45,943	10,141	12,444	12,909	13,367	13,648	13,936	Continuing	TBD
4904 Logistics Integration	0	0	7,310	7,310	7,310	7,311	7,465	7,623	Continuing	TBD
4905 GCSS - AF Architecture Development	0	0	14,467	10,974	11,186	11,096	11,148	11,707	Continuing	TBD
4906 GCSS - AF Domain Integration	0	0	7,025	6,112	6,503	6,987	6,853	4,500	Continuing	TBD
4907 Financial Information Resource System (FIRST)	0	0	8,761	9,136	7,420	7,106	7,255	7,409	Continuing	TBD
4928 Electronic Business/Electronic Commerce	0	0	1,207	1,309	1,411	1,412	1,414	1,415	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

The GCSS-AF budget for FY02-07 was broken out into separate BPACs. This is an accounting change only and was done to provide greater visibility into the pieces of the program. Neither program requirements nor program management were impacted by this breakout.

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

**(U) A. Mission Description**

GCSS-AF will provide the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information, with the appropriate level of security, needed for the Expeditionary Aerospace Force to execute the Air Force mission throughout the full spectrum of military operations.

The primary responsibility of GCSS-AF is to provide a secure flow of timely, accurate, and trusted combat support information to any authorized process or user. It will consolidate and integrate automated information systems to achieve cost avoidance, remove business processing inefficiencies, enable reduced deployment footprint, and improve the speed with which information flows.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303141F Global Combat Support System (GCSS)</b>																																																								
<p>(U) <b><u>A. Mission Description Continued</u></b>                  The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense (DoD) combat support information systems. The modernized systems are being developed in compliance with and hosted on the Defense Information Infrastructure (DII) Common Operating Environment (COE). The modernized systems will be implemented and sustained worldwide and support both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>                  This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">19,283</td> <td style="text-align: right;">46,369</td> <td style="text-align: right;">28,064</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">19,389</td> <td style="text-align: right;">46,369</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: right;">-581</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: right;">904</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: right;">-76</td> <td style="text-align: right;">-426</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: right;">20,847</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">19,636</td> <td style="text-align: right;">45,943</td> <td style="text-align: right;">48,911</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b>                  - GCSS-AF received an additional \$19,647M of RDT&amp;E funding in the FY02 budget.                  - Funding for Electronic Business/Electronic Commerce was transferred to this PE for FY02-07.                  - The GCSS-AF budget for FY02-07 was broken out into separate BPACs. This is an accounting change only and was done to provide greater visibility into the pieces of the program. Neither program requirements nor program management were impacted by this breakout.</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	19,283	46,369	28,064	TBD	(U) Appropriated Value	19,389	46,369			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research	-581				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	904				e. Rescissions	-76	-426			(U) Adjustments to Budget Years Since FY 2001 PBR			20,847	TBD	(U) Current Budget Submit/FY 2002 PBR	19,636	45,943	48,911	TBD
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																					
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Page 2 of 29 Pages		Exhibit R-2 (PE 0303141F)																																																							

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>																											
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>					PROJECT <b>4655</b>																										
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																										
4655    Integrated Logistics System - Supply (ILS-S)	19,636	45,943	10,141	12,444	12,909	13,367	13,648	13,936	Continuing	TBD																										
<p>The GCSS-AF budget for FY02-07 was broken out into separate BPACs. This is an accounting change only and was done to provide greater visibility into the pieces of the program. Neither program requirements nor program management were impacted by this breakout.                      FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      (For other than ILS-S mission descriptions, see projects 4904, 4905, 4906, and 4907 of PE 0303141F.) The Integrated Logistics System - Supply (ILS-S) will be one of the first systems modernized under the GCSS-AF architecture. This effort will modernize the existing legacy Standard Base Supply System (SBSS). Starting in FY00, the technical approach for the program was changed to decrease dependence on a commercial off-the-shelf product and changed to a spiral development acquisition approach to technically refresh and componentize the legacy SBSS to better meet user requirements in a more timely manner. While this approach is technically different than the one previously being pursued, it does not change program requirements. The initial increment will incorporate several SBSS maintenance updates to provide quick delivery of capability to the customer.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <table style="width:100%; border: none;"> <tr><td>(U) \$5,008</td><td>SBSS Tech Refresh Development (Increment 1)</td></tr> <tr><td>(U) \$2,910</td><td>Logistics Business Area Integration</td></tr> <tr><td>(U) \$569</td><td>Logistics Requirements Analysis</td></tr> <tr><td>(U) \$929</td><td>SPO Operations (Contractor Support, Management Support)</td></tr> <tr><td>(U) \$664</td><td>Program Management Office (PMO) Support</td></tr> <tr><td>(U) \$996</td><td>PMO Task</td></tr> <tr><td>(U) \$395</td><td>Base Support</td></tr> <tr><td>(U) \$382</td><td>Support Contractors</td></tr> <tr><td>(U) \$4,340</td><td>Integration Task Contracts</td></tr> <tr><td>(U) \$2,861</td><td>Integration Framework/Architecture Development</td></tr> <tr><td>(U) \$298</td><td>JEFX FY00 Experiment</td></tr> <tr><td>(U) \$284</td><td>SSG/DII Engineering for JEFX FY00</td></tr> <tr><td>(U) \$19,636</td><td>Total</td></tr> </table>											(U) \$5,008	SBSS Tech Refresh Development (Increment 1)	(U) \$2,910	Logistics Business Area Integration	(U) \$569	Logistics Requirements Analysis	(U) \$929	SPO Operations (Contractor Support, Management Support)	(U) \$664	Program Management Office (PMO) Support	(U) \$996	PMO Task	(U) \$395	Base Support	(U) \$382	Support Contractors	(U) \$4,340	Integration Task Contracts	(U) \$2,861	Integration Framework/Architecture Development	(U) \$298	JEFX FY00 Experiment	(U) \$284	SSG/DII Engineering for JEFX FY00	(U) \$19,636	Total
(U) \$5,008	SBSS Tech Refresh Development (Increment 1)																																			
(U) \$2,910	Logistics Business Area Integration																																			
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(U) \$298	JEFX FY00 Experiment																																			
(U) \$284	SSG/DII Engineering for JEFX FY00																																			
(U) \$19,636	Total																																			
Project 4655			Page 3 of 29 Pages				Exhibit R-2A (PE 0303141F)																													

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0303141F Global Combat Support System (GCSS)</b>	<b>4655</b>
<b>(U) A. Mission Description Continued</b>		
<b>(U) FY 2001 (\$ in Thousands)</b>		
(U) \$5,607	SBSS Tech Refresh Development (Increment 1)	
(U) \$2,399	Componentization Development (Increment 2)	
(U) \$882	Logistics Business Area Integration	
(U) \$768	Logistics Requirements Analysis	
(U) \$1,776	SPO Operations (Labor, Management Support)	
(U) \$849	Program Management Office (PMO) Support	
(U) \$1,179	PMO Task	
(U) \$485	Base Support	
(U) \$516	Support Contractors	
(U) \$4,119	Integration Task Contracts	
(U) \$2,106	Initial CONUS fielding of GCSS-AF architecture (Beta site)	
(U) \$1,303	Integration Framework/Architecture Development	
(U) \$1,250	ESC/IO Engineering	
(U) \$550	ESC/IO Program Management and Operations	
(U) \$475	SSG/DII Engineering	
(U) \$408	SSG/DII Program Management and Operations	
(U) \$5,717	GCSS-AF Applications Integration	
(U) \$65	ESC/IO Engineering	
(U) \$1,859	ESC/IO Program Management and Operations	
(U) \$2,033	SSG/DII Engineering	
(U) \$147	SSG/DII Program Management and Operations	
(U) \$1,975	Financial and GCSS-AF Integration requirements analysis and Integrated	Master Plan
(U) \$6,475	Application Development for Acquire Accounting	
(U) \$3,000	Application Development for Budget Formulation	
(U) \$45,943	Total	
<p>The following net transactions are not reflected in the FY01 program total: BTR = +3,715K, ATR = 0K, and SBIR = -1,182K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>		
Project 4655	Page 4 of 29 Pages	Exhibit R-2A (PE 0303141F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>				<b>0303141F Global Combat Support System (GCSS)</b>					<b>4655</b>	
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>										
(U)	\$1,403	SBSS Tech Refresh Development (Increment 1)								
(U)	\$5,227	Componentization Development (Increment 2)								
(U)	\$882	Logistics Business Area Integration								
(U)	\$690	Logistics Requirements Analysis								
(U)	\$1,939	SPO Operations (Labor, Management Support)								
(U)	\$10,141	Total								
<b>(U) <u>B. Project Change Summary</u></b>										
Hardware rehost and increased complexity delayed schedule.										
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Operation & Maintenance, AF; PE 0303141F	5,928	2,920	0	0	0	0	0	Continuing	Continuing
Funds for FY02-07 are listed in the GCSS-AF Architecture Development (BPAC 4905) Exhibit										
<b>(U) <u>D. Acquisition Strategy</u></b>										
All major contracts awarded after full and open competition.										
<b>(U) <u>E. Schedule Profile</u></b>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	
				1	2	3	4	1	2	3
(U)	INTEGRATED LOGISTICS SYSTEM - SUPPLY (ILS-S)									
(U)	SBSS Tech Refresh Dev (Increment 1)									
(U)	Release 1						*			
(U)	Release 2							X		
(U)	Release 3									X
(U)	Component Development (Increment 2)									
Project 4655				Page 5 of 29 Pages				Exhibit R-2A (PE 0303141F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>											DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>						PROJECT <b>4655</b>	
<b>(U) E. Schedule Profile Continued</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Release 1											X
(U)	LOGISTICS INTEGRATION											
(U)	Warlink Spiral I											*
(U)	Logistics Portlet											X
(U)	Data Architecture											*
(U)	Enterprise Data Warehouse											*
(U)	Knowledge Center Prototype											*
(U)	Legacy v2.0 Connector											*
(U)	Business Object Document Development											*
(U)	Metadata Repository											*
(U)	GCSS-AF ARCHITECTURE DEVELOPMENT											
(U)	Delivery of the GCSS-AF Integration Framework v1.2 prototype											*
(U)	Delivery of JEFX FY00 Experiment											*
(U)	Delivery of GCSS-AF Integration Framework v2.0											*
(U)	Delivery of IF update v2.1											*
(U)	Initial CONUS Fielding of IF (prototype)											*
(U)	Delivery of IF update v2.2											*
(U)	GCSS-AF DOMAIN INTEGRATION											
(U)	Integration of Enterprise Web Presentations Service (Proto v1.1)											*
(U)	FINANCIAL INFORMATION RESOURCE SYSTEM (FIRST)											
(U)	Award FIRST Application Development Contract											*
(U)	Begin Development of Acquire Accounting											*
(U)	Complete FIRST Req. Analysis and Integrated Master Plan											X
	* - Completed Event											
	X - Planned Event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE June 2001		
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
<b>07 - Operational System Development</b>		<b>0303141F Global Combat Support System (GCSS)</b>		<b>4655</b>
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>				
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U)	INTEGRATED LOGISTICS SYSTEM - SUPPLY (ILS-S)			
(U)	SBSS Tech Refresh Development (Increment 1)	5,008	5,607	1,403
(U)	Logistics Business Area Integration	2,910	882	882
(U)	Logistics Requirements Analysis	569	768	690
(U)	SPO Operations (Labor, Management Support)	929	1,776	1,939
(U)	Componentization Development (Increment 2)	0	2,399	5,227
(U)	LOGISTICS INTEGRATION			
(U)	Program Management Office (PMO) Support	664	849	0
(U)	PMO Task	996	1,179	0
(U)	Base Support	395	485	0
(U)	Support Contractors	382	516	0
(U)	Integration Task Contracts	4,340	4,119	0
(U)	GCSS-AF ARCHITECTURE DEVELOPMENT			
(U)	Integration Framework/Architecture Development	2,861	1,303	0
(U)	SSG/DII Engineering	284	475	0
(U)	JEFX FY00 Experiment	298	0	0
(U)	Initial CONUS fielding of GCSS-AF architecture )Beta site)	0	2,106	0
(U)	ESC/IO Engineering	0	1,250	0
(U)	ESC/IO Program Management and Operations	0	550	0
(U)	SSG/DII Program Management and Operations	0	408	0
(U)	GCSS-AF DOMAIN INTEGRATION			
(U)	GCSS-AF Applications Integration	0	5,717	0
(U)	ESC/IO Engineering	0	65	0
(U)	ESC/IO Program Management and Operations	0	1,859	0
(U)	SSG/DII Engineering	0	2,033	0
(U)	SSG/DII Program Management and Operations	0	147	0
(U)	FINANCIAL INFORMATION RESOURCE SYSTEM (FIRST)			
(U)	Financial and GCSS-AF Integration requirements analysis and Integrated Master Plan	0	1,975	0
Project 4655		Page 7 of 29 Pages	Exhibit R-3 (PE 0303141F)	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)			PROJECT 4655			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands) Continued</u></b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Application Development for Acquire Accounting					0		6,475		0	
(U)	Application Development for Budget Formulation					0		3,000		0	
(U)	Total					19,636		45,943		10,141	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
<u>ILS-S</u>											
	Lockheed Martin	IDIQ	15 Aug 95	N/A	N/A	26,824	2,910	882	882	Continuing	TBD
	SSG/SW (Software Factory)	N/A	N/A	N/A	N/A	0	5,008	5,607	1,403	Continuing	TBD
	Component Developer	TBD	TBD	N/A	N/A	0	0	2,399	5,227	Continuing	TBD
<u>LOGISTICS INT</u>											
	LMFS	CPAF	Varies	N/A	N/A	14,106	0	701	0	Continuing	TBD
	Oracle	Varies	Varies	N/A	N/A	0	974	519	0	Continuing	TBD
	SSG Software Factory	N/A	N/A	N/A	N/A	100	86	144	0	Continuing	TBD
	MITRE	Varies	Varies	N/A	N/A	20	742	1,575	0	Continuing	TBD
	REMIS MSG	N/A	N/A	N/A	N/A	0	500	0	0	Continuing	TBD
	DISA	N/A	N/A	N/A	N/A	0	45	0	0	Continuing	TBD
	Task Contractors	Varies	Varies	N/A	N/A	2,920	1,900	1,149	0	Continuing	TBD
	PMO Tasks	N/A	N/A	N/A	N/A	1,760	714	1,084	0	Continuing	TBD
<u>GCSS-AF ARCHITECTURE</u>											
<u>DEV</u>											
	Various	IDIQ	15 Aug 95	N/A	N/A	0	0	2,106	0	0	2,106
Project 4655					Page 8 of 29 Pages			Exhibit R-3 (PE 0303141F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0303141F Global Combat Support System (GCSS)</b>				<b>4655</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Product Development Organizations</u>										
LMFS	CPAF	28 May 99	N/A	N/A	4,603	3,159	1,303	0	Continuing	TBD
SSG/DII Engineering	N/A	N/A	N/A	N/A	0	284	475	0	Continuing	TBD
SSG/DII Mgmt & Ops	N/A	N/A	N/A	N/A	0	0	408	0	Continuing	TBD
GCSS-AF DOMAIN INT										
LMFS	CPAF	28 May 99	N/A	N/A	0	0	5,717	0	Continuing	TBD
SSG/DII Engineering	N/A	N/A	N/A	N/A	0	0	2,033	0	Continuing	TBD
SSG/DII Mgmt & Ops	N/A	N/A	N/A	N/A	0	0	147	0	Continuing	TBD
FIRST										
ACCENTURE	CPAF	2 Apr 01	37,500	37,500	0	0	11,450	0	Continuing	TBD
<u>Support and Management Organizations</u>										
ILS-S										
Support Contractors	Various	Various	N/A	N/A	120	569	768	690	Continuing	TBD
SPO Operations	N/A	N/A	N/A	N/A	55	929	1,776	1,939	Continuing	TBD
LOGISTICS INT										
PMO Support	N/A	N/A	N/A	N/A	2,894	664	849	0	Continuing	TBD
Base Support	Varies	Varies	N/A	N/A	1,447	395	485	0	Continuing	TBD
Support Contractors	Varies	Varies	N/A	N/A	1,173	382	516	0	Continuing	TBD
GCSS-AF ARCHITECTURE										
DEV										
MITRE	Varies	Varies	N/A	N/A	0	0	1,250	0	Continuing	TBD
ESC/IO Mgmt & Ops	N/A	N/A	N/A	N/A	0	0	550	0	Continuing	TBD
GCSS-AF DOMAIN INT										
MITRE	Varies	Varies	N/A	N/A	0	0	65	0	Continuing	TBD
ESC/IO Mgmt & Ops	N/A	N/A	N/A	N/A	0	0	1,859	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
LOGISTICS INT										
PMO Tasks	N/A	N/A	N/A	N/A	337	282	95	0	Continuing	TBD
SSG Software Factory	N/A	N/A	N/A	N/A	120	93	31	0	Continuing	TBD

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303141F Global Combat Support System (GCSS)</b>			<b>4655</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	50,333	16,322	37,699	7,512	TBD	TBD
Subtotal Support and Management	5,689	2,939	8,118	2,629	TBD	TBD
Subtotal Test and Evaluation	457	375	126	0	TBD	TBD
Total Project	56,479	19,636	45,943	10,141	TBD	TBD

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>	PROJECT <b>4904</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4904    Logistics Integration	0	0	7,310	7,310	7,310	7,311	7,465	7,623	Continuing	TBD

The GCSS-AF budget for FY02-07 was broken out into separate BPACs. This is an accounting change only and was done to provide greater visibility into the pieces of the program. Neither program requirements nor program management were impacted by this breakout. Logistics Integration was previously funded under BPAC 674655. FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**

Directing multiple organic and contractor industrial teams who develop, and sustain seamless logistics information systems used in times of peace and conflict by over 200,000 users at 350 different bases. Supporting National Command Authority, NATO, other Services, and NASA.

(U) **FY 2000 (\$ in Thousands)**

(U) \$0                      No Activity  
 (U) \$0                      Total

(U) **FY 2001 (\$ in Thousands)**

(U) \$0                      No Activity  
 (U) \$0                      Total

(U) **FY 2002 (\$ in Thousands)**

(U) \$896                    Program Management Office (PMO) Support  
 (U) \$1,221                PMO Task  
 (U) \$503                    Base Support  
 (U) \$534                    Support Contractors  
 (U) \$4,156                Integration Task Contracts  
 (U) \$7,310                Total

(U) **B. Project Change Summary**

N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0303141F Global Combat Support System (GCSS)				4904			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
<b>(U) D. Acquisition Strategy</b>											
All major contracts awarded after full and open competition.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U) Enterprise Data Warehouse									X		
(U) Knowledge Center Prototype									X		X
(U) Legacy v2.0 Connector											
(U) Business Object Document Development										X	X
(U) Metadata Repository											X
* - Completed Event											
X - Planned Event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0303141F Global Combat Support System (GCSS)</b>				<b>4904</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Program Management Office (PMO) Support					0		0		896	
(U)	PMO Tasks					0		0		1,221	
(U)	Base Support					0		0		503	
(U)	Support Contractors					0		0		534	
(U)	Integration Task Contacts					0		0		4,156	
(U)	Total					0		0		7,310	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
LMFS	CPAF	Varies	N/A	N/A	0	0	0	736	Continuing	TBD	
Oracle	Varies	Varies	N/A	N/A	0	0	0	545	Continuing	TBD	
SSG Software Factory	N/A	N/A	N/A	N/A	0	0	0	151	Continuing	TBD	
MITRE	Varies	Varies	N/A	N/A	0	0	0	1,399	Continuing	TBD	
Task Contractors	Varies	Varies	N/A	N/A	0	0	0	1,292	Continuing	TBD	
PMO Tasks	N/A	N/A	N/A	N/A	0	0	0	1,121	Continuing	TBD	
<u>Support and Management Organizations</u>											
PMO Support	N/A	N/A	N/A	N/A	0	0	0	896	Continuing	TBD	
Base Support	Varies	Varies	N/A	N/A	0	0	0	503	Continuing	TBD	
Support Contractors	Varies	Varies	N/A	N/A	0	0	0	534	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
PMO Tasks	N/A	N/A	N/A	N/A	0	0	0	100	Continuing	TBD	
Software Factory	N/A	N/A	N/A	N/A	0	0	0	33	Continuing	TBD	

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303141F Global Combat Support System (GCSS)</b>			<b>4904</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	5,244	TBD	TBD
Subtotal Support and Management	0	0	0	1,933	TBD	TBD
Subtotal Test and Evaluation	0	0	0	133	TBD	TBD
Total Project	0	0	0	7,310	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>					PROJECT <b>4905</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4905    GCSS - AF Architecture Development	0	0	14,467	10,974	11,186	11,096	11,148	11,707	0	0
<p>The GCSS-AF budget for FY02-07 was broken out into separate BPACs. This is an accounting change only and was done to provide greater visibility into the pieces of the program. Neither program requirements nor program management were impacted by this breakout. GCSS-AF Architecture Development was previously funded under BPAC 674655.</p> <p>FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The foundation of GCSS-AF is an architecture based on modern open standard technologies, and implemented on a hardware and software infrastructure that provides common computing utilities and infrastructure services for all combat support automated information systems (AIS) to enable real-time access to accurate, current data. The architecture is an integrated set of COTS system products that orchestrate the passing of messages between objects and operations in a predictable way, following a defined set of rules and procedures. The Air Force integration framework is comprised of powerful tools for enabling our business processes, but they do not come prepackaged with business processes. They are integrated in such a way that they may be adapted or configured to embody the way we do business today or, more importantly, the way we want to do business tomorrow. This foundation will ensure secure delivery of timely, accurate, and trusted combat support data to the warfighter and supporting elements.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$0                      No Activity                      (U) \$0                      Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$0                      No Activity                      (U) \$0                      Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$7,918                  Integration Framework/Architecture Development                      (U) \$4,257                  ESC/IO Engineering                      (U) \$554                    ESC/IO Program Management and Operations                      (U) \$478                    SSG/DII Engineering                      (U) \$410                    SSG/DII Program Management and Operations</p>										
Project 4905			Page 15 of 29 Pages				Exhibit R-2A (PE 0303141F)			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>	PROJECT <b>4905</b>
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands) Continued

(U) \$850 AFOTEC

(U) \$14,467 Total

(U) **B. Project Change Summary**

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Operation & Maintenance, AF; PE33141F	0	0	9,349	5,282	6,388	10,621	12,562	12,938	Continuing	Continuing
(U) Other Procurement, AF; BP83	0	0	4,756	4,933	16,816	32,133	34,954	37,645	Continuing	Continuing

(U) **D. Acquisition Strategy**

All major contracts awarded after full and open competition.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Delivery of IF v2.3									X			
(U) Delivery of IF v2.4											X	

\* - Completed Event

X - Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)			PROJECT 4905		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Integration Framework/Architecture Development					0		0		7,918
(U)	SSG/DII Engineering					0		0		478
(U)	ESC/IO Engineering					0		0		4,257
(U)	ESC/IO Program Management and Operations					0		0		554
(U)	SSG/DII Program Management and Operations					0		0		410
(U)	AFOTEC					0		0		850
(U)	Total					0		0		14,467
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin Systems	CPAF	28 May 99	N/A	N/A	0	0	0	7,918	Continuing	TBD
Integration										
SSG/DII Engineering	N/A	N/A	N/A	N/A	0	0	0	478	Continuing	TBD
<u>Support and Management Organizations</u>										
ESC/IO Engineering Support	N/A	N/A	N/A	N/A	0	0	0	4,257	Continuing	TBD
ESC/IO Program Management and Operations	N/A	N/A	N/A	N/A	0	0	0	554	Continuing	TBD
SSG/DII Program Management and Operations	N/A	N/A	N/A	N/A	0	0	0	410	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFOTEC	N/A	N/A	N/A	N/A	0	0	0	850	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303141F Global Combat Support System (GCSS)</b>			<b>4905</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	8,396	TBD	TBD
Subtotal Support and Management	0	0	0	5,221	TBD	TBD
Subtotal Test and Evaluation	0	0	0	850	TBD	TBD
Total Project	0	0	0	14,467	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>	PROJECT <b>4906</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4906 GCSS - AF Domain Integration	0	0	7,025	6,112	6,503	6,987	6,853	4,500	Continuing	TBD

The GCSS-AF budget for FY02-07 was broken out into separate BPACs. This is an accounting change only and was done to provide greater visibility into the pieces of the program. Neither program requirements nor program management were impacted by this breakout. GCSS-AF Domain Integration was previously funded under BPAC 674655.

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

**(U) A. Mission Description**

The information technology term 'domain' is the Air Force equivalent of the terms 'business area' or 'functional area.' Therefore, this GCSS-AF effort is primarily concerned with bringing the various combat support automated information systems (AIS) onto the GCSS-AF Integration Framework. Developer's guides and direct technical/engineering 'outreach' to support AIS developments are the primary ways integration is enabled.

Business process reengineering is also a major part of this effort. GCSS-AF implements common services to support common business practices across multiple domains.

**(U) FY 2000 (\$ in Thousands)**

**(U)** \$0 No Activity

**(U)** \$0 Total

**(U) FY 2001 (\$ in Thousands)**

**(U)** \$0 No Activity

**(U)** \$0 Total

**(U) FY 2002 (\$ in Thousands)**

**(U)** \$5,231 GCSS-AF Applications Integration

**(U)** \$558 ESC/IO Engineering

**(U)** \$240 ESC/IO Program Management and Operations

**(U)** \$747 SSG/DII Engineering

**(U)** \$249 SSG/DII Program Management and Operations

**(U)** \$7,025 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>				PROJECT <b>4906</b>			
<b>(U) B. Project Change Summary</b>											
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
<b>(U) AF RDT&amp;E</b>											
<b>(U) Other APPN</b>											
<b>(U) D. Acquisition Strategy</b>											
All major contracts awarded after full and open competition.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
<b>(U)</b>	Completion of Enterprise Migration Master Plan									X	
	* - Completed Event										
	X - Planned Event										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0303141F Global Combat Support System (GCSS)</b>			<b>4906</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	GCSS-AF Applications Integration					0		0		5,231
(U)	ESC/IO Engineering					0		0		558
(U)	ESC/IO Program Management and Operations					0		0		240
(U)	SSG/DII Engineering					0		0		747
(U)	SSG/DII Program Management and Operations					0		0		249
(U)	Total					0		0		7,025
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin Federal Systems	CPAF	28 May 99	N/A	N/A	0	0	0	5,231	Continuing	TBD
SSG/DII	N/A	N/A	N/A	N/A	0	0	0	747	Continuing	TBD
<u>Support and Management Organizations</u>										
ESC/IO Engineering Support	N/A	N/A	N/A	N/A	0	0	0	558	Continuing	TBD
ESC/IO Program Management and Operations	N/A	N/A	N/A	N/A	0	0	0	240	Continuing	TBD
SSG/DII Program Management and Operations	N/A	N/A	N/A	N/A	0	0	0	249	Continuing	TBD
<u>Test and Evaluation Organizations</u>										

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303141F Global Combat Support System (GCSS)</b>			<b>4906</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	5,978	TBD	TBD
Subtotal Support and Management	0	0	0	1,047	TBD	TBD
Subtotal Test and Evaluation						
Total Project	0	0	0	7,025	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>	PROJECT <b>4907</b>
---	--	------------------------

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4907 Financial Information Resource System (FIRST)	0	0	8,761	9,136	7,420	7,106	7,255	7,409	Continuing	TBD

The GCSS-AF budget for FY02-07 was broken out into separate BPACs. This is an accounting change only and was done to provide greater visibility into the pieces of the program. Neither program requirements nor program management were impacted by this breakout. Financial Information Resource System (FIRST) was previously funded under BPAC 674655.

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

**(U) A. Mission Description**

FIRST is a software development effort aimed at providing an integrated, modern, seamless financial management system that enables authorized users (from Air Staff to base level) to plan, program, and execute their budgets. FIRST is ultimately envisioned to be the foundation for the Air Force's Planning, Programming, and Budgeting System (PPBS). FIRST will be compliant with the Joint Technical Architecture (JTA) and incorporate Public Key Infrastructure initiatives (such as electronic signature capability). FIRST will be built using the GCSS-AF architecture.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$0** No Activity
- (U) \$0** Total

**(U) FY 2001 (\$ in Thousands)**

- (U) \$0** No Activity
- (U) \$0** Total

**(U) FY 2002 (\$ in Thousands)**

- (U) \$7,261** Application Development for Acquire Accounting
- (U) \$1,500** GCSS-AF Integration
- (U) \$8,761** Total

**(U) B. Project Change Summary**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)				PROJECT 4907	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Operations & Maintenance, AF; PE38601F	8,100	2,500	2,600	3,300	3,500	3,500	3,500	3,500	Continuing	Continuing
<b>(U) D. Acquisition Strategy</b>										
All major contracts awarded after full and open competition.										
<b>(U) E. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>
				1	2	3	4	1	2	3
(U) Begin Acuire Accounting Developmental Test										X
(U) Complete Acquire Accounting spiral 1 design model									X	
(U) Complete Acquire Accounting Spiral 2 design model										X
* - Completed Event										
X - Planned Event										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)			PROJECT 4907			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	FIRST GCSS-AF Integration					0		0		1,500	
(U)	Application Development for Acquire Accounting					0		0		7,261	
(U)	Total					0		0		8,761	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Accenture	Cost Plus Award Fee Contract	2 Apr 01	37,500	37,500	0	0	0	7,261	Continuing	TBD
	Lockheed Martin SI	CPAF Contract	28 May 99	TBD	N/A	0	0	0	1,500	Continuing	TBD
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303141F Global Combat Support System (GCSS)</b>			<b>4907</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	8,761	TBD	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project	0	0	0	8,761	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>					PROJECT <b>4928</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4928	Electronic Business/Electronic Commerce	0	0	1,207	1,309	1,411	1,412	1,414	1,415	Continuing	TBD
<p>Funds transferred from PE 38610 (3400 funds) to PE 33141 (3600 funds) starting in FY02.                      FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p><b>(U) A. Mission Description</b>                      Supports DOD mandates to maximize the use of EB/EC by maintaining a core team to stimulate AF EC Growth. Provides the USAF with the capability to conduct EB/EC with other military and commercial entities using standards-based communications.</p> <p>The Electronic Commerce Technologies Office provides EB/EC “surge” capacity to rapidly stand up mission critical interfaces for immediate interoperability, full-scale gateway operational support until a long-term provider takes over, and provide mission capability now - paperwork later. In addition, the office provides AFCIC- and/or JECPO- funded EB/EC consulting, prototyping, and testing services to jump start interface work and promising applications, then migrate ongoing work to service level agreements funded by the functional customer.</p> <p><b>(U) FY 2000 (\$ in Thousands)</b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p><b>(U) FY 2001 (\$ in Thousands)</b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p><b>(U) FY 2002 (\$ in Thousands)</b>                      (U) \$520 Core Support                      (U) \$214 Menu Assisted Data Entry System (MADES) II Support                      (U) \$271 EC Gateway Support                      (U) \$101 Electronic Business/Electronic Commerce Reengineering Initiatives                      (U) \$101 Electronic Business/Electronic Commerce Advanced Technology Prototypes                      (U) \$1,207 Total</p>											
Project 4928			Page 27 of 29 Pages				Exhibit R-2A (PE 0303141F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303141F Global Combat Support System (GCSS)</b>				PROJECT <b>4928</b>	
<b>(U) B. Project Change Summary</b>										
Funds transferred from PE 0308610F (3400 funds) to PE 0303141F (3600 funds) starting in FY02.										
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Operation & Maintenance, AF; PE 38610F	1,200	1,200	0	0	0	0	0	0	Continuing	Continuing
<b>(U) D. Acquisition Strategy</b>										
All major contracts awarded after full and open competition.										
<b>(U) E. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>
				1	2	3	4	1	2	3
(U) Begin EC Gateway Update									X	
(U) Finalize EC Gateway Update										X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0303141F Global Combat Support System (GCSS)</b>				<b>4928</b>	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Core Support				0		0			520
(U)	Menu Assisted Data Entry System (MADES) II Support				0		0			214
(U)	EC Gateway Support				0		0			271
(U)	EB/EC Reengineering Initiative				0		0			101
(U)	EB/EC Advanced Technology Development				0		0			101
(U)	Total				0		0			1,207
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
SSG/SW (Software Factory)	N/A	N/A	N/A	N/A	0	0	0	1,207	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					0	0	0	1,207	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					0	0	0	1,207	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303150F WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM					PROJECT 4667		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4667	Global Command and Control System - AF	3,419	3,709	3,521	3,616	3,682	3,759	3,815	3,902	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note 1: FY03-07 budget numbers do not reflect the DOD strategic review results.  
 Note 2: In FY 2001, funding for Deliberate and Crisis Action Planning and Execution Segments (DCAPES) were executed as a separate project (674802) under PE 0207438F.

(U) **A. Mission Description**  
 The Global Command and Control System (GCCS) is the designated Command and Control migration system for the DoD. It is an integrated Command, Control, Communications, Computer, and Intelligence (C4I) system capable of supporting all echelons of the US military command structure. GCCS solves C4I interoperability problems between Service components by establishing a Defense Information Infrastructure (DII) Common Operating Environment (COE), and has an end objective to eliminate stovepipe systems. The AF is responsible for developing four of the modules that will make up the COE, and integration of AF unique applications with the COE. Integration efforts will be directed towards future aerospace C2 concepts supporting requirements for the Air Operations Center (AOC), including intelligence, and intended to automate operational systems with an end objective of saving manpower and reducing costs. The GCCS will integrate operational data from multiple systems for presentation of Common Operational Picture (COP). The COP will integrate data to provide the Single Integrated Air Picture (SIAP) and develop access to the Family of Interoperable Operational Pictures (FIOP).

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$883 Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution  
 (U) \$1,653 Definition and Integration of Air Force Capabilities into GCCS (COP, DCAPES, ATO Reader, Joint Defensive Planner (JDP)), Prototype Software Development, GCCS Migration Support  
 (U) \$883 DII COE Development and Distribution  
 (U) \$3,419 Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$821 Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution  
 (U) \$2,088 Definition and Integration of Air Force Capabilities into GCCS (COP, SIAP, FIOP, DCAPES, ATO Reader, Joint Defensive Planner (JDP)), Prototype Software Development, GCCS Migration Support  
 (U) \$800 DII COE Development and Distribution

Project 4667 Page 1 of 6 Pages Exhibit R-2 (PE 0303150F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303150F WWMCCS/GLOBAL COMMAND &amp; CONTROL SYSTEM</b>	<b>PROJECT</b> <b>4667</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2001 (\$ in Thousands) Continued</u></b></p> <p>(U) \$3,709                      Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$895                      Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution</p> <p>(U) \$1,926                      Integration of Air Force Capabilities into GCCS (COP, SIAP, FIOP, DCAPEs, ATO Reader, Joint Defensive Planner (JDP)), Prototype Software Development, GCCS Migration Support</p> <p>(U) \$700                        DII COE Development and Distribution</p> <p>(U) \$3,521                      Total</p> <p>There are no significant changes in funding from the last years submission.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This effort is Budget Activity 7, Operational System Development, because the program develops and implements software and engineers and implements communications for an integrated operational communications and computer network that will eventually evolve to the Global Grid, Global Information Grid, and Global Battlespace Infosphere (JBI).</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">3,817</td> <td style="text-align: right;">3,743</td> <td style="text-align: right;">3,829</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">3,929</td> <td style="text-align: right;">3,743</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: right;">-91</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: right;">-118</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">-25</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: right;">-261</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: right;">-15</td> <td style="text-align: right;">-34</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: right;">-308</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">3,419</td> <td style="text-align: right;">3,709</td> <td style="text-align: right;">3,521</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	3,817	3,743	3,829	TBD	(U) Appropriated Value	3,929	3,743			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-91				b. Small Business Innovative Research	-118				c. Omnibus or Other Above Threshold Reprogram	-25				d. Below Threshold Reprogram	-261				e. Rescissions	-15	-34			(U) Adjustments to Budget Years Since FY 2001 PBR			-308		(U) Current Budget Submit/FY 2002 PBR	3,419	3,709	3,521	TBD
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																					
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(U) Current Budget Submit/FY 2002 PBR	3,419	3,709	3,521	TBD																																																					
Project 4667	Page 2 of 6 Pages	Exhibit R-2 (PE 0303150F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303150F WWMCCS/GLOBAL COMMAND &amp; CONTROL SYSTEM</b>				PROJECT <b>4667</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>													
<b>(U) Significant Program Changes:</b> FY2000 Database update will reflect an additional 18K BTR													
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN	5,593	15,187	15,151	15,446	21,760	22,179	22,619	23,120	Continuing	TBD			
<b>(U) E. Acquisition Strategy</b> Electronics Systems Center (ESC), Hanscom AFB, MA will manage the overall AF GCCS Program (Designated Systems Integration, Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution, and plan to the directed DII COE. DII COE compliance is performed by ESC to support AF contributions to the Joint Services GCCS program and to support AF mission applications that are required to operate in the COE.													
<b>(U) F. Schedule Profile</b>													
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Integration and Development of Future Aerospace Command C2 Concepts					*			X					
(U) Crisis Action Planning Evolution					*	*		X		X		X	
(U) Definition and Integration of Air Force Capabilities into GCCS COP										X			
(U) DCAPES Application Integration						*	*	X		X		X	
(U) ATO Reader										X			
(U) Joint Defensive Planner (JDP)											X		
(U) Prototype Software Development					*				X				X
(U) GCCS Migration Support					*		*	X			X		
(U) COE Development and Distribution													
(U) Software Development & Integration					*		*		*		X		
Project 4667													
Page 3 of 6 Pages													
Exhibit R-2 (PE 0303150F)													

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE <b>June 2001</b>					
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303150F WWMCCS/GLOBAL COMMAND &amp; CONTROL SYSTEM</b>				PROJECT <b>4667</b>				
<b>(U) F. Schedule Profile Continued</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Integration Testing & Evaluation			*	*	*	X			X		
(U)	System Testing			*	*	*	X			X		
	* Denotes Completed Event											
	X Denotes Planned Event											
Project 4667				Page 4 of 6 Pages				Exhibit R-2 (PE 0303150F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303150F WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM			PROJECT 4667			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	Integration and Development of Future Aerospace Command C2 Concepts, Crisis Action Planning Evolution				883		821			895	
(U)	Definition and Integration of Air Force Capabilities into GCCS, Prototype Software Development, GCCS Migration Support				1,653		2,088			1,926	
(U)	DII COE Development and Distribution				883		800			700	
(U)	Total				3,419		3,709			3,521	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Rome Lab	FFP/FCA	Jun 95			250				Continuing	TBD
	Material Systems Group	various	various			1,400				Continuing	TBD
	Miscellaneous	various	various			85				Continuing	TBD
	ESC	TBD	TBD							Continuing	TBD
	DCAPES	FFP/LHAF	Jul 98			1,700				Continuing	TBD
*In FY 00 DCAPES funding is transferred to PE 27438											
<u>Support and Management Organizations</u>											
	Information Technology Services Program (ITSP)					5,819	1,354	600	600	Continuing	TBD
	MITRE					6,774	2,023	2,800	2,821	Continuing	TBD
	Miscellaneous					15	42	309	100	Continuing	TBD
<u>Test and Evaluation Organizations</u>											

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>			
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT			
<b>07 - Operational System Development</b>			<b>0303150F WWMCCS/GLOBAL COMMAND &amp; CONTROL SYSTEM</b>		<b>4667</b>			
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>								
Subtotal Product Development			3,435				TBD	TBD
Subtotal Support and Management			12,608	3,419	3,709	3,521	TBD	TBD
Subtotal Test and Evaluation								
Total Project			16,043	3,419	3,709	3,521	TBD	TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0303401F Communications Security</b>						<b>PROJECT</b> <b>4861</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4861	Cryptologic 2000	0	4,812	4,131	4,965	4,874	3,917	3,983	4,070	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

FY99 through FY00 funds are in PE 0303140F. Beginning in FY01, funding for this effort is located in this PE.

**(U) A. Mission Description**

The Cryptologic project consists of Air Force Electronic Key Management Systems (AFEKMS). AFEKMS, in concert with NSA's EKMS, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for all AF weapon systems. AFEKMS replaces the existing physical distribution and management system providing COMSEC keying material for USAF Information Protection. Information Protection emphasizes access control, multi-level secure databases, trusted computing and information integrity. AFEKMS is a three-tier system structure in a hierarchical arrangement. This tiered structure provides 'wholesale' to 'retail' to 'consumer' capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the 'wholesale' capability. Tier 2 installations comprise the distribution network and Tier 3 comprises the 'retail locations' where keying material leaves the AFEKMS and enters the End Item COMSEC Equipment (EICE) - the consumer.

Acquisition includes Commercial Off-The-Shelf (COTS) computers and software, contractor-developed application software, Government Furnished Equipment (GFE) and software such as NSA's Local COMSEC Management Software (LCMS). The USAF-developed application software (UAS) is necessary to provide specific functions for unique key management systems such as the F-22 and unique key fill requirements of EICE for Air Force applications, to improve the LCMS user interface, to integrate multiple independent UASs into a single commonly supported package and to moderate unique UASs when integration is not possible. Also to insulate unique user application software from NSA-supplied software changes and allow automation of manual operator processes in order to save manpower, reduce required training and improve mission effectiveness.

Overall AFEKMS will improve protection of national Security-related information by enhancing confidentiality, integrity, and non-repudiation substantially over legacy key management systems. AFEKMS will greatly accelerate availability of key through electronic transmission vice shipping of materials, and will enhance mission responsiveness and flexibility. While upgrade features are included to technologically refresh the system using re-host actions, COTS and user-oriented software where possible, the ultimate aim is to provide a migration path to similar functionality planned under NSA's Key Management Infrastructure initiative.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0303401F Communications Security</b>		<b>4861</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2000 (\$ in Thousands)</u></b>					
(U)	\$0	Activity is Funded in PE 33140F (\$1.233)			
(U)	\$0	Total			
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>					
(U)	\$2,371	Program office contract support on the Key Management Infrastructure (KMI) for the Defense Information Infrastructure Common Operation Environment (DII-COE), the Browser-Based Development effort, and AF Public Key Infrastructure implementation			
(U)	\$470	SPO support equipment			
(U)	\$1,971	Local Management Device/Data Management Device (LMD/DMD) Browser Interface			
(U)	\$4,812	Total			
The following net transactions are not reflected in the FY01 program total: BTR =0 K, ATR = 0 K, and SBIR= -149 K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.					
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U)	\$2,030	Program office contract support on the Key Management Infrastructure (KMI) for the Defense Information Infrastructure Common Operation Environment (DII-COE), the Browser-Based Development effort, and AF Public Key Infrastructure implementation			
(U)	\$411	Low Rate Initial Production (LRIP) KOV-21 cards			
(U)	\$1,690	Local Management Device/Data Management Device (LMD/DMD) Browser Interface			
(U)	\$4,131	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in budget activity 7, Operational System Development, because it addresses the development and transition of information security, protection and defensive capabilities and technologies.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)		4,857	4,700	
(U)	Appropriated Value		4,857		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research				
Project 4861		Page 2 of 5 Pages	Exhibit R-2 (PE 0303401F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303401F Communications Security</b>					PROJECT <b>4861</b>		
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>												
				<u>FY 2000</u>				<u>FY 2001</u>		<u>FY 2002</u>	<u>Total Cost</u>	
	c. Omnibus or Other Above Threshold Reprogram											
	d. Below Threshold Reprogram											
	e. Rescissions											
								-45				
(U)	Adjustments to Budget Years Since FY 2001 PBR											
										-569		
(U)	Current Budget Submit/FY 2002 PBR											
								4,812		4,131	TBD	
(U)	<u>Significant Program Changes:</u>											
	N/A											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>												
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	Other APPN											
(U)	APPN 3600/PE 33140F/PE	1,228	0	0	0	0	0	0	0	0	Continuing	TBD
	Title Information Systems											
	Security Program/BPAC											
	674585/Title Cryptologic											
	2020											
	NOTE: FY99 through FY00 funds are in PE 33140F. Beginning in FY01, funding for this effort is located in this PE.											
<b>(U) E. Acquisition Strategy</b>												
	All major contracts within this Program Element are awarded after full and open competition.											
<b>(U) F. Schedule Profile</b>												
				<u>FY 2000</u>				<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4	
(U)	Begin Development of LMD/DMD Browser Interface											
								*				
(U)	Program office contract support of the KMI											
								*				
(U)	SPO Support Equipment											
								*	X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	
BUDGET ACTIVITY										June 2001	
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT	
					0303401F Communications Security					4861	
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Software Development					0		4,812		4,131	
(U)	Total					0		4,812		4,131	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	SAIC	BPA	May 98	N/A	N/A	0	0	1,704	1,469	Continuing	TBD
	Mitre	FFRDC	Nov 00	N/A	N/A	0	0	3,108	2,662	Continuing	TBD
	<u>Support and Management Organizations</u>										
	N/A										
	<u>Test and Evaluation Organizations</u>										
	N/A										
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	N/A										
	<u>Support and Management Property</u>										
	N/A										
	<u>Test and Evaluation Property</u>										
	N/A										

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303401F Communications Security</b>			<b>4861</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
					<u>FY 2002</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			0	0	4,812	TBD
Subtotal Support and Management					4,131	TBD
Subtotal Test and Evaluation						
Total Project			0	0	4,812	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303601F MILSATCOM Terminals</b>					PROJECT <b>2487</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2487	MILSATCOM Terminals	7,572	17,634	41,763	57,601	98,275	81,748	68,438	30,738	25,500	2,324,552
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) **A. Mission Description**  
 The MILSATCOM Terminals program develops equipment enabling users to communicate via Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF), Wideband Gapfiller System (WGS), Defense Satellite Communication System (DSCS), and other military satellites, as well as commercial satellites, to support tactical Aerospace Expeditionary Force requirements and maintain essential strategic connectivity for nuclear forces. Program RDT&E currently supports the following efforts:

- 1) Concept development work to ensure high-capacity connectivity for tactical and strategic air forces and ground command and control components -- primarily assessment of commercial/military technological alternatives and development of an Air Force terminals roadmap
- 2) Ground Multiband Terminal (GMT) development. GMT will replace Air Force Ground Mobile Force terminals with higher-capacity military communications to provide tactical ground forces with connectivity via the Ka-band Wideband Gapfiller System, DSCS, and commercial C- and Ku-band satellites to significantly increase throughput for inter- and intra-theater tactical force information such as air tasking orders, battle damage assessments, and reconnaissance data.
- 3) Family of Advanced Beyond-Line-of-Sight Terminals (FAB-T) development. The Airborne Wideband Terminal (AWT) and Command Post Terminal Replacement (CPTR) programs have been accelerated and combined into one program that will develop robust, secure, survivable EHF voice and data satellite communications terminals for nuclear and conventional force users. FAB-T variants will provide ground and airborne command posts and other aircraft with connectivity to the Milstar, AEHF, and WGS systems; EHF payloads on polar-orbiting and UHF Follow-on (UFO) satellites; and Global Broadcast Service payloads on certain UFO satellites.

(U) **FY 2000 (\$ in Thousands)**

(U) \$1,579	Continued MILSATCOM terminals support activities
(U) \$2,980	Continued contractor test and operations support
(U) \$3,013	Continued concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing
(U) \$7,572	Total

The following net transaction is not reflected in the FY 2000 program total: BTR--\$45K. This transaction is not reflected in other sections of this document where an FY 2000 total is shown.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE <b>June 2001</b>		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0303601F MILSATCOM Terminals</b>	<b>2487</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>				
(U) \$2,279	Continue MILSATCOM terminals support activities			
(U) \$1,563	Continue contractor test and operations support			
(U) \$5,192	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing			
(U) \$5,600	Begin Ground Multiband Terminal (GMT) development			
(U) \$3,000	Begin Airborne Wideband Terminal (AWT) risk reduction			
(U) \$17,634	Total			
The following net transactions are not reflected in the FY 2001 program total: SBIR=-\$1162K and BTR=-\$455K. These transactions are not reflected in other sections of this document where an FY 2001 total is shown.				
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
(U) \$3,664	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing			
(U) \$17,255	Continue Ground Multiband Terminal (GMT) development			
(U) \$20,844	Begin Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development			
(U) \$41,763	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This effort is funded in Budget Activity 7, Operational System Development, because some of its programs have completed Milestone III reviews and are in production.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	6,923	17,797	24,416	2,297,542
(U) Appropriated Value	7,026	17,797		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-65	-125		
b. Small Business Innovative Research	-255			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	893			
e. Rescissions	-27	-38		
(U) Adjustments to Budget Years Since FY 2001 PBR			17,347	
Project 2487				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0303601F MILSATCOM Terminals</b>			<b>2487</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>						
(U)	Current Budget Submit/FY 2002 PBR	7,572	17,634	41,763	2,324,552						
<b>(U) Significant Program Changes:</b>											
FY 2000: Reprogram for additional support for advanced development studies assessing EHF options for the B-2.											
FY 2002 and outyear adjustments fully fund GMT development, including Engineering Development Models; accelerate AWT development by one year to accelerate B-2 EHF connectivity; and accelerate CPTR development by two years to provide payload command and control for the second AEHF satellite launch.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Aircraft Procurement, Air Force, WSC 119992 (Budget Activity 5, P-27 and P-61)*	18,263	23,315	45,951	40,440	38,415	30,629	21,261	42,921	Continuing	TBD
(U)	Other Procurement, Air Force, 'MILSATCOM Space', WSC 836780 (Budget Activity 3, P-61)*	32,443	34,803	15,938	24,288	51,193	59,198	65,881	49,401	Continuing	TBD
*See the exhibits for these procurement funds for more details on MILSATCOM terminals efforts for which development has been completed.											
**Related RDT&E costs for MILSATCOM satellite systems to which terminal development is linked can be found RDT&E Budget Item Justification Sheets for the following Program Elements (PEs):											
PE 0303110F Defense Satellite Communications System											
PE 0603430F Advanced EHF											
PE 0603432F Polar MILSATCOM (Space)											
PE 0603854F Wideband Gapfiller System (Space)											
PE 0604479F Milstar LDR/MDR Satellite Communications											
<b>(U) E. Acquisition Strategy</b>											
Future programs will be competitive acquisitions.											

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0303601F MILSATCOM Terminals</b>					PROJECT <b>2487</b>			
<b>(U) F. Schedule Profile</b>													
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) GMT Development**							*	X	X	X	X	X	
(U) AWT Risk Reduction					*	*	*	X					
(U) FAB-T Development									X	X	X	X	
* Completed event													
X Planned event													
<p>**Development now begins in 3QFY2001, vice 1QFY2001 as noted in last year's exhibit, because the system's requirements were refined to encompass operations with more than just the Wideband Gapfiller System.</p>													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303601F MILSATCOM Terminals			PROJECT 2487		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	MILSATCOM terminals support activities					1,579		2,279		0
(U)	Contractor test and operations support					2,980		1,563		0
(U)	Concept/Prototype Demo/MILSATCOM Terminals Roadmap/SATCOM testing					3,013		5,192		3,664
(U)	Ground Multiband Terminal (GMT)					0		5,600		17,255
(U)	Airborne Wideband Terminal risk reduction					0		3,000		0
(U)	Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development					0		0		20,844
(U)	Total					7,572		17,634		41,763
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Raytheon*	FPIF/FFP	Jun 85	888,552	888,552	884,773	2,216	1,563	0	0	888,552
Rockwell	CPIF	Aug 93	43,068	43,068	43,068	0	0	0	0	43,068
ViaSat	C/FFP	Oct 95	3,076	3,076	3,076	0	0	0	0	3,076
Harris**	CPAF	Jun 01	24,538	24,538	0	0	5,600	14,605	4,333	24,538
TBD (FAB-T contract)**	CPAF	Jan 02	TBD	TBD	0	0	0	15,344	311,314	326,658
Miscellaneous	Various	Various	N/A	N/A	651,580	0	2,837	1,564	0	655,981
*FY 2002 funds were erroneously listed in this line in last year's budget item justification sheet.										
**These funds were included in the 'Miscellaneous' line in last year's budget item justification sheet.										
<u>Support and Management Organizations</u>										
MITRE	CPAF	Various	N/A	N/A	105,678	2,317	2,939	6,650	27,576	145,160
Support Contractors - System Engineering & Technical Assistance	Various	Various	N/A	N/A	157,741	1,549	1,854	1,500	14,852	177,496

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303601F MILSATCOM Terminals			PROJECT 2487		
<b>(U) Performing Organizations Continued:</b>										
*FY 2002 funds were erroneously listed in this line in last year's budget item justification sheet.										
**These funds were included in the 'Miscellaneous' line in last year's budget item justification sheet.										
<u>Support and Management Organizations</u>										
Tecolote	Various	Various	N/A	N/A	1,998	310	705	800	0	3,813
Miscellaneous	Various	Various	N/A	N/A	19,759	180	636	300	4,225	25,100
<u>Test and Evaluation Organizations</u>										
Wright-Labs	AF-616	N/A	N/A	N/A	22,103	1,000	1,500	1,000	0	25,603
Miscellaneous	Various	N/A	N/A	N/A	5,507	0	0	0	0	5,507
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					1,582,497	2,216	10,000	31,513	315,647	1,941,873
Subtotal Support and Management					285,176	4,356	6,134	9,250	46,653	351,569
Subtotal Test and Evaluation					27,610	1,000	1,500	1,000	0	31,110
Total Project					1,895,283	7,572	17,634	41,763	362,300	2,324,552

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305099F Global Air Traffic Management (GATM)</b>						<b>PROJECT</b> <b>4689</b>	
<b>COST (\$ in Thousands)</b>	<b>FY 2000 Actual</b>	<b>FY 2001 Estimate</b>	<b>FY 2002 Estimate</b>	<b>FY 2003 Estimate</b>	<b>FY 2004 Estimate</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>	
4689 Global Access Architecture	5,653	8,430	9,331	7,372	7,510	7,666	7,966	8,276	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

FY03-FY07 budget numbers do not reflect the DoD strategic review results

**(U) A. Mission Description**

Global Air Traffic Management: GATM is the Air Force program designed to meet the evolving aviation requirements of the International Civil Aviation Organization (ICAO). GATM, Navigation and Safety, and Navigation Warfare (NAVWAR) are major components of the AF's Global Access, Navigation, and Safety (GANS) management effort. The Global Air Traffic Operations/Mobility Command and Control (GATO/MC2) System Program Office (SPO) supports GATM as the AF's central focal point for analyzing and evaluating operational requirements, developing aircraft system architectures, acquiring aviation equipment, and certifying weapon system implementation. Per AFPD 63-13, SPO support funds engineering services, acquisition support, and certification of platform integration. The system architectures identify necessary equipment and aircraft capability shortfalls across the Air Force inventory, for mobility, information dominance, bombers, fighters, trainers, helicopters, and unmanned aerial vehicles. For those capabilities where no current solution exists, development activities are undertaken in conjunction with existing DoD communications, navigation, surveillance, and safety program offices. Dual-use capabilities of avionics to satisfy GATM and military requirements of the Air Force fleet will be explored. The SPO will continue projections of studies and prototype efforts necessary to ensure AF aviation weapon systems are postured to meet civil standards and future changes to the civil standards leading to free flight. This project supports the definition of requirements for ACAT III projects across multiple weapon systems. No existing program satisfies the requirements of the GATM initiatives.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$1,309** System architecture definitions, development, and certification
- (U) \$975** Operational requirements analysis, demonstration, and evaluation
- (U) \$1,254** Development of common avionics and technologies
- (U) \$1,426** Acquisition of ID/IQ aviation equipment
- (U) \$689** Nav/Safety and GPS/NAVWAR integration and interoperability evaluations
- (U) \$5,653** Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0305099F Global Air Traffic Management (GATM)</b>		<b>4689</b>	
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2001 (\$ in Thousands)</b>					
(U)	\$2,403	System architecture definitions, development, and certification			
(U)	\$1,358	Operational requirements analysis, demonstration, and evaluation			
(U)	\$2,786	Development of common avionics and technologies			
(U)	\$1,248	Acquisition of ID/IQ aviation equipment			
(U)	\$635	Nav/Safety and GPS/NAVWAR integration and interoperability evaluations			
(U)	\$8,430	Total			
<b>(U) FY 2002 (\$ in Thousands)</b>					
(U)	\$2,746	System architecture definitions, development, and certification			
(U)	\$1,484	Operational requirements analysis, demonstration, and evaluation			
(U)	\$3,061	Development of common avionics and technologies			
(U)	\$1,391	Acquisition of ID/IQ aviation equipment			
(U)	\$649	Nav/Safety and GPS/NAVWAR integration and interoperability evaluations			
(U)	\$9,331	Total			
<b>(U) B. Budget Activity Justification</b>					
This program upgrades avionics to add air traffic control capabilities to currently fielded weapon systems and is assigned Budget Activity 7, Operational Systems Development.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	6,517	8,508	9,496	
(U)	Appropriated Value	6,517	8,508		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-80			
	b. Small Business Innovative Research	-202			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-528			
	e. Rescissions	-54	-78		
Project 4689		Page 2 of 11 Pages	Exhibit R-2 (PE 0305099F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305099F Global Air Traffic Management (GATM)</b>			PROJECT <b>4689</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Adjustments to Budget Years Since FY 2001 PBR					-165					
(U)	Current Budget Submit/FY 2002 PBR			5,653	8,430	9,331		TBD			
(U)	<u>Significant Program Changes:</u> FY00 reflects a below threshold reprogramming to support the C-130 Avionics Modernization Program source selection activities.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Aircraft Procurement, AF, BA-5, C-5 Avionics Modernization Program, PE 0401119F	22,328	33,003	90,531	125,067	80,524	12,062				363,515
(U)	RDT&E, AF, BA-7, C-5 AMP, PE 0401119F, C-5 Airlift Squadrons	37,180	44,489	64,240	10,030						155,939
(U)	Aircraft Procurement, AF, BA-5, C-5, FM Immunity, PE0401119F	699									699
(U)	Aircraft Procurement, AF, BA-5, C-9 NAVSTAR GPS, PE 0401314F	2,846	882								3,728
(U)	Aircraft Procurement, AF, BA-5, C-9 RVSM, PE 0401314F	963									963
(U)	Aircraft Procurement, AF, BA-5, C-9 TAWS, PE	5,460									5,460
Project 4689											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
0401314F										
(U) Aircraft Procurement, AF, BA-5, KC-10 NAVSTAR GPS, PE 0401219F	2,229									2,229
(U) RDT&E, AF, BA-7, KC-10 GATM, PE 0401219F	27,016	19,347	22,774	10,584	2,422					82,143
(U) Aircraft Procurement, AF, BA-5, KC-10 GATM, PE 0401219F		39,321	15,093	8,163	14,085	1,973				78,635
(U) Aircraft Procurement, AF, BA-5, KC-10 FM Immunity, PE 0401219F	3,104									3,104
(U) Aircraft Procurement, AF, BA-5, KC-10 TCAS/TAWS, PE 0401219F	17,279	547								17,826
(U) Aircraft Procurement, AF, BA-5, C-17 HFDL, PE 0401130F			3,128	2,820	7,967	3,651	1,667			19,233
(U) Aircraft Procurement, AF, BA-5, C-17 GPS Integrity Monitoring Capability, PE 0401130F	10,140	1,160								11,300
(U) Aircraft Procurement, AF, BA-5, C-17 GATM II, PE 0401130F					54,372	57,640	55,089	52,547	29,324	248,972
(U) Aircraft Procurement, AF, BA-5, C-17 RNP-4, PE			3,128	2,820	7,967	3,651	1,667			19,233
Project 4689										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)			PROJECT 4689		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
0401130F										
(U) Aircraft Procurement, AF, BA-5, C-17 TAWS, PE 0401130F		1,840	11,701	18,796	5,082					37,419
(U) Aircraft Procurement, AF, BA-5, C-17 GATM PE 0401130F	16,268	31,246	39,516	30,029						117,059
(U) Aircraft Procurement, AF, BA-5, C-20 TAWS, PE 0401314F	505									505
(U) Aircraft Procurement, AF, BA-5, C-21 TCAS, PE 0401314F	2,614	370								2,984
(U) Aircraft Procurement, AF, BA-5, C-21 TAWS, PE 0401314F	3,199	157								3,356
(U) Aircraft Procurement, AF, BA-5, VC-25 Windshear Warning, PE 0401314F	188									188
(U) Aircraft Procurement, AF, BA-5, VC-25 GATM, PE 0401314F	13,540		11,364	11,124	1,780					37,808
(U) Aircraft Procurement, AF, BA-5, VC-25 TAWS, PE 0401314F	296									296
(U) Aircraft Procurement, AF, BA-5, T-43 TCAS, PE					1,924	4,910	3,239	55		11,325
Project 4689										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)			PROJECT 4689		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
0804742F										
(U) Aircraft Procurement, AF, BA-5, T-43 TAWS, PE 0804742F		3,002	3,404	1,868	5,184	2,722				16,180
(U) Aircraft Procurement, AF, BA-5, C-130 Avionics Modernization Program, PE 0401115F					80,800	180,200	213,600	303,300	1,982,700	2,760,600
(U) Aircraft Procurement, AF, BA-5, C-130 ETCAS, PE 0401115F	18,042	20,100	2,105	3,635	250					44,132
(U) Aircraft Procurement, AF, BA-5, C-135 8.33 radio, PE 0401218F	24,795	33,247								58,042
(U) Aircraft Procurement, AF, BA-5, C-135 Interphone replacement, PE 0401218F	4,259	1,158								5,417
(U) Aircraft Procurement, AF, BA-5, C-135 GATM, PE 0401218F	16,728	19,130	91,200	159,307	157,549	151,846	131,427	137,257	125,213	989,657
(U) Aircraft Procurement, AF, BA-5, C-135 RVSM, PE 0401218F	43,112	42,801	19,290							105,203
(U) Aircraft Procurement, AF, BA-5, C-135 TAWS, PE 0401218F	24,394	11,800	8,788							44,982
(U) Aircraft Procurement, AF, 0401218F	16,313	44,043	36,504	1,598						98,458
Project 4689										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
BA-5, C-135 FDR/CVR, PE 0401218F										
(U) Aircraft Procurement, AF, BA-5, C-135 Pacer CRAG, PE 0401218F	159,021	78,521	1,549							239,091
(U) Aircraft Procurement, AF, BA-5, C-135 FM Immunity, PE0401218F	800	6,424								7,224
(U) Aircraft Procurement, AF, BA-5, C-141 TCAS, PE 0401118F	7,308	10								7,318
(U) RDT&E , AF, BA-7, E-3 GATM, PE 0207417F					16,876	66,568	20,429			103,873
(U) Aircraft Procurement, AF, BA-5, E-3 GATM, PE 0207417F							26,515	69,475		95,990
(U) Aircraft Procurement, AF, BA-5, E-4 8.33 radio, PE 0302015F	523									523
(U) Aircraft Procurement, AF, BA-5, E-4 TCAS, PE 0302015F	439	375	720							1,534
(U) Aircraft Procurement, AF, BA-5, E-4 TAWS, PE 0302015F	450	971								1,421
(U) RDT&E, AF BA-5, E-4 , INFRASTRUCTURE	11,991	34,169	17,257	9,017	29,351	21,703				123,488
Project 4689								Exhibit R-2 (PE 0305099F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
MODERNIZATION, PE 0302015F										
(U) Aircraft Procurement, AF, BA-5, E-4				28,262	20,139	31,883	7,306	17,292		104,882
INFRASTRUCTURE MODERNIZATION, PE 0302015F										
(U) Aircraft Procurement, AF, BA-5, E-4 FDR/CVR, PE 0302015F	99	100	480							679
(U) Aircraft Procurement, AF, BA-5, E-8 GATM, PE 0207581F			8,820			22,632	17,993	24,660		74,105
(U) RDT&E, AF, BA-7, E-8 GATM, PE 0207581F		4,847			49,600	63,800	36,300	7,700		162,247
(U) Aircraft Procurement, AF, BA-5, H-1 TCAS, PE 0101235F		2,906		292	488					3,686
(U) Aircraft Procurement, AF, BA-5, B-52, GATM, PE 0101113F							340	51,300	118,800	170,440
(U) RDT&E, AF, BA07, B-52 GATM, PE 0101113F					4,676	15,836	40,000			60,512
(U) Aircraft Procurement, AF, BA-5, C-12 TAWS, PE 0401314F	4,246	1,305								5,551

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305099F Global Air Traffic Management (GATM)</b>	PROJECT <b>4689</b>
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**(U) E. Acquisition Strategy**

The GATM Global Access Architecture acquisition strategy enables the GATO/MC2 SPO to guide equipment acquisition supporting global air traffic operations. The SPO will ensure standardization and certification of USAF platforms/systems that operate in the national and global air traffic environments. The SPO will also provide technical expertise and interface with appropriate product/support centers, battle labs, and Department of Defense (DOD) research and development facilities in the execution of assigned tasks. Program Research and Development Agreements (PRDAs), Cooperative Research and Development Agreements (CRDAs), and Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts will be competitively awarded.

**(U) F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) System Architecture Definitions				*	*				X			
(U) Operational Requirements Analysis				*					X			
(U) Development of common avionics and technologies			*						X			
(U) Acquisition of ID/IQ equipment		*					*		X			
(U) GPS/NAVWAR Integration Activities			*				*		X			

\* Denotes Completed Event for the FY - All GATM activities are on-going level of effort activities  
 X Denotes Beginning of scheduled event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)			PROJECT 4689		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	System architecture definitions, development, and certification					1,309		2,403		2,746
(U)	Operational requirements analysis, demonstration, and evaluation					975		1,358		1,484
(U)	Acquisition of ID/IQ aviation equipment					1,426		1,248		1,391
(U)	Development of common avionics and technologies					1,254		2,786		3,061
(U)	Nav/Safety and GPS/NAVWAR integration and interoperability evaluations					689		635		649
(U)	Total					5,653		8,430		9,331
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
MIT	FFP	Nov 98	N/A	N/A	1,900	520	1,300	1,350	Continuing	TBD
Honeywell	FFP	Nov 98	N/A	N/A	2,642	47	125	240	Continuing	TBD
Allied Signal	FFP	Nov 98	N/A	N/A	1,975	0	0	0	0	1,975
Rockwell Collins	FFP	Nov 98	N/A	N/A	978	526	142	340	Continuing	TBD
MITRE Corporation	CPAF	Oct 99	N/A	N/A	4,163	1,025	3,144	3,120	Continuing	TBD
Horizons Technology Inc	FFP	Feb 99	N/A	N/A	2,429	1,545	1,379	1,420	Continuing	TBD
TASC	CPFF	Jan 99	728	728	728	0	0	0	0	728
Smiths Industries	FFP	Apr 00	N/A	N/A	0	194	120	120	Continuing	TBD
SAIC	T&M	Dec 99	N/A	N/A	0	530	0	0	0	530
ARINC Inc	FFP	July 99	N/A	N/A	840	106	140	150	Continuing	TBD
Lockheed Martin	CPAF	Jun 00	159	159	0	159	0	0	0	159
Bremmer Associates	FFP	Feb 99	729	729	729	0	0	0	0	729
Northrop Grumman	CPAF	Feb 99	2,499	2,499	2,499	0	0	0	0	2,499
MCR	IDIQ	Feb	N/A	N/A	350	400	450	420	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
										June 2001
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT
<b>07 - Operational System Development</b>					<b>0305099F Global Air Traffic Management (GATM)</b>					<b>4689</b>
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
Federal Tech Services	FFP	Aug 99	300	300	300	0	0	0	0	300
DISA/DIT	FFP	Sep 00	N/A	N/A	0	0	350	640	Continuing	TBD
Various	various	various	N/A	N/A	2,146	42	786	946	Continuing	TBD
<u>Support and Management Organizations</u>										
MITRE Corporation	CPAF	Oct 99	N/A	N/A	477	284	292	315	Continuing	TBD
Various	Various	Various	N/A	N/A	624	164	169	210	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
412th FLTS (Edwards AFB)		Various	N/A	N/A	0	111	33	60	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					21,679	5,094	7,936	8,746	TBD	TBD
Subtotal Support and Management					1,101	448	461	525	TBD	TBD
Subtotal Test and Evaluation					0	111	33	60	TBD	TBD
Total Project					22,780	5,653	8,430	9,331	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305110F Satellite Control Network					PROJECT 3276	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3276	Satellite Control Network	54,731	58,105	56,349	23,531	23,068	23,001	37,502	34,494	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) **A. Mission Description**  
 The Air Force Satellite Control Network (AFSCN) mission is to fly operational USAF and other DoD satellites. The AFSCN also provides launch and early orbit tracking operations in support of all major US launches. Air Force Space Command (AFSPC) performs operations and maintenance and Air Force Materiel Command (AFMC) performs modernization and sustainment of the system to meet requirements validated by a HQ USAF approved Operational Requirements Document (ORD). This program element contains funds for the development and acquisition of this integrated national satellite telemetry, tracking, commanding, and data relay capability to meet the requirements of the growing inventory of operational and developmental DoD, National, Civil, and Allied satellite systems. Improvement and Modernization efforts in command & control, communications, and range elements of the AFSCN will ensure DoD space systems are operationally ready to support the CINCs' warfighting requirements.

The AFSCN is a global infrastructure of control centers, Remote Tracking Stations (RTSs), and communications links that provide the highly reliable command and control, communications, and range systems required to support the nation's surveillance, navigation, communications, and weather satellite operations. The AFSCN is the DoD common user network that provides satellite state-of-health, tracking, telemetry, and commanding (TT&C) for the following operational satellite systems: Defense Meteorological Satellite Program (DMSP), Global Positioning System (GPS), Defense Satellite Communications System (DSCS), Defense Support Program (DSP), Fleet Satellite (FLEETSAT), Military Strategic and Tactical Relay Satellite (MILSTAR), the Navy's Ultra High Frequency Follow-On (UHF F/O), Skynet, NATC III/IV, and classified programs.

AFSCN Improvement and Modernization (I&M): AFSCN I&M is an ongoing program of replacements and upgrades which will meet AFSPC operational requirements to replace non-standard, unsupportable equipment with more reliable, maintainable and standardized hardware and software. This new equipment will enable AFSPC satellite operations to be performed with fewer, less skilled personnel and will significantly reduce hardware/software maintenance costs. The principal efforts within this program are: Network Operations Upgrades, Communications Upgrades, and Range (RTS) Upgrades.

NETWORK OPERATIONS UPGRADES: These upgrades will build upon the Electronic Schedule Dissemination (ESD) and Orbit Analysis Subsystem (OAS)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> June 2001
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0305110F Satellite Control Network</b>	<b>3276</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>  deliveries to continue to improve AFSCN resource management capabilities.</p> <p>COMMUNICATIONS UPGRADES: This effort will transition the current, costly point-to-point AFSCN communications network to a distributed communications system that integrates government and commercial networks. Several standardization efforts are being implemented to improve and modernize the communications and ground segment elements of the AFSCN, including: Archival recording systems to replace obsolete, manpower-intensive analog equipment with automated, standardized digital COTS and COTS-based systems; Wide Area Network Interface Units (WANIU) which standardize hardware, enable future access to the Defense Information System Network (DISN) global grid, reduce O&amp;M costs for performing multiplexing functions in the AFSCN, and provide an Asynchronous Transfer Mode (ATM) interface; and Operational Switch Replacement (OSR) to provide increased capacity, reliability, data quality, and user access.</p> <p>RANGE UPGRADES: This effort will upgrade the current Automated Remote Tracking Station (ARTS) and other Range assets. Several integrated projects, which are now grouped into the Remote Tracking Station (RTS) block change effort, will standardize the remote tracking stations, upgrade and/or replace outdated equipment in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs.</p>		
(U) <b><u>FY 2000 (\$ in Thousands)</u></b>		
(U) \$27,985	Communications Upgrades: continued OSR, WANIU, and archival recorders development.	
(U) \$9,795	Range Upgrades: began Control and Status (C&S) Processor Upgrade development to continue the ARTS modernization effort; as a continuation of the modernization effort to standardize hardware and software; begin Standards Protocol requirements definition effort to address impact on AFSCN architecture of emerging space communications protocols being examined by DOD, NASA, and the International Standards Organization.	
(U) \$5,588	Network Integration and Systems Engineering: continued system engineering and integration of hardware/software to meet evolving satellite program requirements at OCNs and RTSs.	
(U) \$11,363	Provided program support for Systems Program Office.	
(U) \$54,731	Total	
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$384	Network Operations Upgrades: begin Orbit Analysis Subsystem follow-on development effort to continue upgrades to network operations	
(U) \$12,572	Communications Upgrades: continue upgrades to include OSR and WANIU development.	
(U) \$26,610	Range Upgrades: continue Standards Protocol development. Continue C&S Processor Upgrade development and begin effort to upgrade the Automated Remote Tracking Stations (ARTS) Space/Ground interface upgrade as a continuation of the ARTS modernization effort (these efforts are now grouped as the Remote Tracking Stations (RTS) Block Change effort).	
Project 3276	Page 2 of 7 Pages	Exhibit R-2 (PE 0305110F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
		June 2001		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0305110F Satellite Control Network</b>	<b>3276</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2001 (\$ in Thousands) Continued</u></b>				
(U) \$7,298	Network Integration and Systems Engineering: continue system engineering and integration of hardware/software to meet evolving satellite program requirements at OCNs and RTSs.			
(U) \$11,241	Provide program support for Systems Program Office.			
(U) \$58,105	Total			
The following net transactions are not reflected in the FY01 program total: BTR = -\$8179K, SBIR = -\$783K These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.				
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
(U) \$15,500	Communications Upgrades: continue communications upgrades to include completion of OSR and WANIU efforts.			
(U) \$25,849	Range Upgrades: continue standards protocol development effort. Continue RTS Block change development effort.			
(U) \$3,000	Network Integration and Systems Engineering: continue system engineering and integration of hardware/software to meet evolving satellite program requirements at OCNs and RTSs.			
(U) \$12,000	Provide program support for Systems Program Office.			
(U) \$56,349	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	60,977	56,643	97,504	TBD
(U) Appropriated Value	61,918	58,643		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-606	-411		
b. Small Business Innovative Research	-2,250			
c. Omnibus or Other Above Threshold Reprogram	-271			
d. Below Threshold Reprogram	-3,818			
e. Rescissions	-242	-127		
(U) Adjustments to Budget Years Since FY 2001 PBR			-41,155	
Project 3276	Page 3 of 7 Pages	Exhibit R-2 (PE 0305110F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305110F Satellite Control Network</b>					PROJECT <b>3276</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>														
					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>			<u>Total Cost</u>				
(U)	Current Budget Submit/FY 2002 PBR				54,731	58,105	56,349			TBD				
(U)	<u>Significant Program Changes:</u>													
	FY 2000: AF reduction supports higher priorities and delays Orbit Analysis Subsystem follow-on effort, a continuation of network operations upgrades, to FY01. WANIU installation delays due to operational mission considerations delayed completion of upgrade effort to FY02													
	FY 2002: AF net realignment of \$4,100K to OPAF implements COTS-based approach to Remote Tracking Station upgrades and re-phases funding to accommodate follow-on contract effort slip to FY02; reduction of \$33,555K results from user requirements refinement and increased emphasis on COTS-based replacement approach; reduction of \$3,500K for higher priorities delays external user connectivity to AFSCN from FY02 to FY03, with user concurrence.													
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>														
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>			
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U)	Other Procurement, AF; PE 0305110F, AFSCN; BA-03, P-59				26,578	36,736	29,678	51,940	46,730	47,884	35,849	34,069	Continuing	TBD
<b>(U) E. Acquisition Strategy</b>														
	The primary objective of the AFSCN I&M program is to reduce the cost of satellite control operations while maintaining or improving reliability, maintainability, operability, and capability of current systems. The AF implemented a new streamlined contracting strategy in FY 1996, resulting in the award of the Range & Communications Development Contract (RCDC), the Network Operations Upgrade Contract (NOUC), and the Network Integration Contract (NIC). In FY 2001, the AF will further streamline its acquisition strategy by competitive award of the Satellite Control Network Contract (SCNC), which will consolidate development upgrade, sustainment, and integration responsibilities in one contract.													
<b>(U) F. Schedule Profile</b>														
					<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>			
					1	2	3	4	1	2	3	4		
(U)	NETWORK OPERATIONS UPGRADES													
(U)	- ESD DD-250													
(U)	- Start OAS follow-on effort													
(U)	COMMUNICATIONS UPGRADES													
										X				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0305110F Satellite Control Network</b>					<b>3276</b>				
<b>(U) F. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) - RTS archival installation initiation	*													
(U) - Archival DD-250								X						
(U) - WANIU DD-250									X					
(U) - OSR Incremental Demonstration Review-2			*											
(U) - OSR Incremental Demonstration Review-3					*									
(U) - OSR FCA/PCA							*							
(U) - OSR DD-250												X		
(U) RANGE UPGRADES (RTS Block Change)														
(U) - Start Control and Status Upgrade		*												
(U) - Begin RTS Block Change (including ARTS upgrade)								X						
*=-completed; X=planned														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305110F Satellite Control Network			PROJECT 3276		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Network Ops Upgrades					0		384		0
(U)	Communications Upgrades					27,985		12,572		15,500
(U)	Range Upgrades					9,795		26,610		25,849
(U)	Network Integration and Systems Engineering					5,588		7,298		3,000
(U)	Program Support					11,363		11,241		12,000
(U)	Total					54,731		58,105		56,349
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin (Range & Comm Development Contract)	C/CPAF	Mar 96	139,887	139,887	74,925	36,890	12,572	15,500	0	139,887
TBD (Satellite Control Network Contract)	TBD	Sep 01	TBD	TBD	0	0	26,994	25,849	Continuing	TBD
Lockheed Martin (Network Integration Contract)	C/CPAF	May 96	48,957	48,957	33,071	5,588	7,298	3,000	0	48,957
<u>Support and Management Organizations</u>										
Program Support (FFRDC, SETA, SPO Ops)	various	various	N/A	N/A	45,452	12,253	11,241	12,000	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE	
							June 2001	
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development				0305110F Satellite Control Network			3276	
<b>(U) Government Furnished Property:</b>								
	<u>Contract</u>	<u>Award or</u>						
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Description</u>	<u>Vehicle</u>							<u>Program</u>
<u>Product Development Property</u>								
N/A								
<u>Support and Management Property</u>								
N/A								
<u>Test and Evaluation Property</u>								
N/A								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
								<u>Program</u>
Subtotal Product Development				107,996	42,478	46,864	44,349	TBD
Subtotal Support and Management				45,452	12,253	11,241	12,000	TBD
Subtotal Test and Evaluation								
Total Project				153,448	54,731	58,105	56,349	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305111F Weather Service</b>					PROJECT <b>2738</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2738	Weather Service	16,393	19,759	11,452	14,588	16,783	17,033	17,375	17,744	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 This budget activity funds operational development necessary to acquire, modify, and sustain segments of the Air Force Weather Weapon System (AFWWS). The AFWWS supports worldwide operations of Air Force and Army warfighters, as well as Special Operation Forces (SOF) and other government agencies, by providing observations and forecasts of terrestrial and space weather. The AFWWS provides fixed and transportable equipment supporting the Expeditionary Aerospace Force (EAF) concept with weather observing and forecasting capabilities at in-garrison and deployed locations. Efforts include: (a) Cloud Depiction and Forecast System II (CDFS II) upgrades satellite data processing, cloud depiction and forecasting weather support functions for operational commanders and classified national programs and replaces logistically unsupportable mainframe computers at the Air Force Weather (AFW) strategic center, Offutt AFB; (b) Global Theater Weather Analysis and Prediction System (GTWAPS) acquires theater weather models and associated hardware to improve AFW theater support capabilities; (c) Tactical Weather Radar (TWR) provides fixed and semi-fixed Doppler weather radar to support forward deployed combat operations worldwide; (d) Space Weather Analysis and Forecast System (SWAFS) builds space environmental support and modernizes software capabilities to meet warfighter requirements; (e) Product Tailoring/Warfighter Applications (PT/WA) [Previously named Meteorological Operations Capability (MOC) Forecast System 21st Century (FS-21)] provides user workstations capable of ingesting multiple sources of weather information to provide timely and precisely tailored weather products for the warfighter and supports the 'train as you fight' concept by assuring fixed and deployable systems are the same; (f) Weather Data Analysis (WDA) provides a fused infrastructure for the assimilation of advanced models, radar, lightning, and satellite data into a single user interface for the timely analysis and production of tailored weather products; (g) Observing System 21st Century (OS-21) provides a range of weather observing capabilities, including automated capabilities, at fixed and deployed locations worldwide; (h) Small Tactical Terminal (STT) provides worldwide tactical users with a survivable 'first-in' source of meteorological satellite data, processed by small portable terminals in forward areas of conflict [STT funding aligned to PE 35111F in FY01. Prior year funding in PE 35160F, Defense Meteorological Satellite Program.]; and (i) Forecasting integrates advanced scientific numerical weather prediction models into the AFW strategic center production capability for automated and mission-tailored weather forecast products.

(U) Air Force Weather (AFW) programs are aligned under the five core competency areas of Weather Data Collection, Weather Data Analysis, Forecasting, Product Tailoring/Warfighter Applications, and Dissemination described in the AFW Mission Support Plan. Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions. Weather Data Collection includes terrestrial and space environmental sensors including TWR, OS-21,

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> June 2001
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0305111F Weather Service</b>	<b>2738</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>                      and STT. Weather Data Analysis provides interoperability of AFW processing infrastructure with users and data sources. Weather Forecasting will enhance cloud forecasting capabilities and weather forecasting models and begin merging strategic and operational forecasting for greater efficiency. Product Tailoring/Warfighter Applications implements AFW Reengineering at the theater and tactical levels; at theater level provides timely, fine-scale weather products and services to operational commanders within a given Area of Responsibility; and at tactical level provides front-line weather information to warfighters in support of combat operations. These consolidations and realignments implement the CSAF-directed and approved AFW Strategic Plan.</p>		
<p>(U) <u>FY 2000 (\$ in Thousands)</u></p>		
(U) \$500	TWR: Continued development of system interfaces with forecasting and analysis systems (Weather Data Collection)	
(U) \$327	OS-21: Prepared Milestones I/II/III documentation and achieved Milestones I/II/III decision (Weather Data Collection)	
(U) \$1,184	WDA: SPO support and development of architecture for AFW Strategic Center (Analysis)	
(U) \$3,394	CDFS II: Continued development of cloud depiction and forecast software (Weather Forecasting)	
(U) \$1,910	GTWAPS: Continued operational software development for incremental IOCs (Weather Forecasting)	
(U) \$6,003	SWAFS: Achieved Milestones I/II/III and began software development for incremental deliveries (Weather Forecasting)	
(U) \$3,075	PT/WA: Achieved Milestones I/II/III and awarded contract for procurement and software integration (Product Tailoring/Warfighter Applications)	
(U) \$16,393	Total	
<p>(U) <u>FY 2001 (\$ in Thousands)</u></p>		
(U) \$400	TWR: Continue development of system interfaces with forecasting and analysis systems (Weather Data Collection)	
(U) \$2,072	OS-21: Develop and integrate interfaces of component sensor systems to meet IOC (Weather Data Collection)	
(U) \$2,342	WDA: Complete development of architecture for AFW Strategic Center, prepare Milestone B/C documentation, achieve Milestone B/C decision, and conduct risk mitigation assessments (Analysis)	
(U) \$5,281	CDFS II: Complete development of cloud depiction and forecast software and achieve FOC (Weather Forecasting)	
(U) \$900	GTWAPS: Complete operational software development and achieve FOC (Weather Forecasting)	
(U) \$4,441	SWAFS: Continue software development for incremental deliveries (Weather Forecasting)	
(U) \$3,842	PT/WA: Continue software development and integration with regional and tactical weather systems (Product Tailoring/Warfighter Applications)	
(U) \$481	STT: Continue support for integration of satellite weather data in tactical environment (Weather Data Collection)	
(U) \$19,759	Total	
<p>The following net transactions are not reflected in the FY01 program total: SBIR=-700K and CANX=-2K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>		
Project 2738	Page 2 of 6 Pages	Exhibit R-2 (PE 0305111F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0305111F Weather Service</b>		<b>2738</b>	
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2002 (\$ in Thousands)</b>					
(U)	\$3,000	WDA: Begin software development for enhanced analysis infrastructure (Analysis)			
(U)	\$1,303	Forecasting: Develop documentation for Milestone B/C decision for integration of scientific advances in weather prediction capabilities (Weather Forecasting)			
(U)	\$3,364	SWAFS: Continue software development for incremental deliveries (Weather Forecasting)			
(U)	\$3,785	PT/WA: Continue software development and integration with regional and tactical weather systems (Product Tailoring/Warfighter Applications)			
(U)	\$11,452	Total			
<b>(U) B. Budget Activity Justification</b>					
This effort is in Budget Activity 7, Operational System Development, because it supports operational software development and system tests associated with the upgrade and replacement of currently operational systems, systems already in production, and systems with approved production funds in the DoD budget.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	18,910	19,942	11,489	TBD
(U)	Appropriated Value	19,069	19,942		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,241			
	b. Small Business Innovative Research	-570			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-790			
	e. Rescissions	-75	-183		
(U)	Adjustments to Budget Years Since FY 2001 PBR			-37	TBD
(U)	Current Budget Submit/FY 2002 PBR	16,393	19,759	11,452	TBD
<b>(U) Significant Program Changes:</b>					

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>						
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305111F Weather Service</b>				PROJECT <b>2738</b>						
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>															
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>						
(U) Other Procurement, AF, Weather Service (PE35111F WSC 833070 & 838010)	48,875	38,990	51,485	47,132	45,480	46,693	47,592	48,648	Continuing	TBD					
<b>(U) E. Acquisition Strategy</b>															
All major contracts within this program used precompeted DoD contract vehicles or were awarded after full and open competition. Programs support DII COE compliance and use an evolutionary acquisition strategy with a series of incremental IOCs and software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to evolving commercial activities.															
<b>(U) F. Schedule Profile</b>															
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
				1	2	3	4	1	2	3	4	1	2	3	4
(U) CDFS II FOC												X			
(U) GTWAPS FOC												X			
(U) SWAFS Milestones I/II/ III						*									
(U) PT/WA Milestones I/II/III				*											
(U) OS-21 Milestones I/II/III						*									
(U) WDA Milestones B/C								*							
* - Denotes completed event X - Denotes planned event															

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305111F Weather Service			PROJECT 2738		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	1st Article Development					742		0		0
(U)	System Software Integration					1,217		2,984		1,950
(U)	System Engineering Support					2,145		5,435		1,032
(U)	Contractor Engineering Support					2,390		2,715		390
(U)	Software Development					8,264		6,720		6,973
(U)	Travel					243		301		183
(U)	Program Management Support					1,358		1,518		924
(U)	Laboratory Support					34		86		0
(U)	Total					16,393		19,759		11,452
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Sterling	CPAF	Jun 95	21,621	21,621	18,403	3,186	4,786	0	0	26,375
CCPL (TRW)	LOE	Dec 97	4,988	4,988	3,620	1,398	900	0	0	5,918
Raytheon	MIPR	Sep 98	1,184	1,184	482	453	338	0	0	1,273
CCPL (TRW/Raytheon)	LOE	Mar 00	TBD	TBD	0	2,813	3,637	2,809	Continuing	TBD
TBD [OS-21]	CFFP	Jun 01	327	327	0	327	2,072	0	Continuing	TBD
TBD [WDA]	TBD	TBD	TBD	TBD	0	202	1,100	2,126	Continuing	TBD
CCPL (TRW)	LOE	Dec 99	4,780	4,780	0	5,343	3,893	2,985	Continuing	TBD
AFRL	LOE	Sep 00	165	165	0	34	131	0	Continuing	TBD
TBD [Forecasting]	TBD	TBD	TBD	TBD	0	0	0	1,053	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305111F Weather Service		PROJECT 2738			
<b>(U) Performing Organizations Continued:</b>									
<u>Support and Management Organizations</u>									
Electronic Systems Center (ESC)				824	551	151	625	Continuing	TBD
Space and Missile Systems Center (SMC)				72	197	817	159	Continuing	TBD
MITRE/Aerospace/ITSP				2,151	1,889	1,934	1,695	Continuing	TBD
<u>Test and Evaluation Organizations</u>									
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Item</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Obligation</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				22,505	13,756	16,857	8,973	TBD	TBD
Subtotal Support and Management				3,047	2,637	2,902	2,479	TBD	TBD
Subtotal Test and Evaluation									
Total Project				25,552	16,393	19,759	11,452	TBD	TBD

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0305114F Air Traffic Control/Approach/Landing System (ATCALs)**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6,023	47,651	26,982	3,608	5,929	6,046	6,174	6,304	Continuing	TBD
2026 System Support	230	249	0	0	0	0	0	0	1,497	TBD
3587 Air Traffic Control Systems	5,793	47,402	26,982	3,608	5,929	6,046	6,174	6,304	Continuing	TBD
Quantity of RDT&E Articles	0	5	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

**(U) A. Mission Description**

The focus of RDT&E activities in this program is a comprehensive modernization of fixed and mobile Air Traffic Control and Landing Systems (ATCALs) that will bridge the gap between the current aging fleet of ground-based ATCALs and future space-based infrastructure. In particular, the program is focused on developing systems that increase commonality and interoperability, reduce manpower requirements, reduce logistics supportability problems, and posture the service to move to space-based aerospace navigation infrastructure when that becomes feasible and affordable (sometime after 2010). Additionally, this program investigates and exploits emerging technologies in critical ATCALs support areas such as air traffic controller training and terminal instrument procedures development. This program complements other safety of flight and airspace access programs such as Global Air Traffic Management and Global Access, Navigation, and Safety. Project 2026 funds ongoing liaison and interagency cooperative studies, between the USAF Air Traffic Control and Landing Systems program office and various organizations to include other Services, the Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO). Beginning in FY02, funding for Project 2026 will be contained in Project 3587. Project 3587 funds research and development of new air traffic control surveillance, positioning, and precision approach capabilities. This project funds the development of the Mobile Approach Control System (MACS) and Air Force Terminal Instrument Procedures-Replacement (AFTERPS-R).

**(U) B. Budget Activity Justification**

This program is in budget activity 7, Operational System Development, because it upgrades currently fielded weapon systems.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE	
				June 2001	
BUDGET ACTIVITY		PE NUMBER AND TITLE			
<b>07 - Operational System Development</b>		<b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>			
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	5,588	18,093	12,279	TBD
(U)	Appropriated Value	7,344	48,093		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-25			
	b. Small Business Innovative Research	-221			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-361			
	e. Rescissions	-714	-442		
(U)	Adjustments to Budget Years Since FY 2001 PBR			14,703	
(U)	Current Budget Submit/FY 2002 PBR	6,023	47,651	26,982	TBD
(U)	<u>Significant Program Changes:</u>				
	FY00: \$1.756M was transferred from PE 0305137F, National Airspace System, in an effort to reduce the number of small-dollar program elements.				
	FY01: FY01 Appropriations Bill added \$30M to accelerate procurement of three Mobile Approach Control System (MACS) test assets for Air National Guard locations.				
	FY02: Air Force added \$17.728M to accelerate the core MACS development program and to integrate the various components of the three additional MACS test assets from FY01. Tower Simulator System (TSS) RDT&E funds, in the amount of \$3M were reprogrammed to the procurement appropriation. The TSS components will be competitively procured from off-the-shelf sources and require no RDT&E funds.				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>					PROJECT <b>2026</b>		
COST (\$ in Thousands)			FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2026	System Support		230	249	0	0	0	0	0	0	0	1,497
<p>FY03-FY07 budget numbers do not reflect the DoD strategic review results. Beginning in FY02, funding for system support will be contained in Project 3587 vice Project 2026.</p> <p>(U) <b><u>A. Mission Description</u></b>          This continuing effort funds ongoing liaison and interagency cooperative studies and interoperability analyses between the USAF Air Traffic Control and Landing Systems (ATCALs) Program Office and various organizations which include the other services, the Federal Aviation Administration (FAA), and the International Civil Aviation Organization (ICAO). This project provides Air Force mission support for the ATCALs programs including several joint efforts with the FAA. RDT&amp;E funds are used to resolve or minimize technical interface problems associated with interoperability between existing or planned DoD/FAA ATCALs equipment and capabilities. This project ensures Air Force air traffic systems work collaboratively to provide safe and efficient Air Traffic Control services within the National Airspace System and in host nations overseas.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>          (U) \$88 Support for all ATCALs projects          (U) \$95 Continue national and international air traffic system interoperability and interface evaluations          (U) \$47 Complete precision landing studies for Joint Special Operations Command          (U) \$230 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>          (U) \$89 Support for all ATCALs projects          (U) \$111 Continue national and international air traffic system interoperability and interface evaluations          (U) \$49 Perform strategic planning for ATCALs deployment          (U) \$249 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>          (U) \$0 Activities consolidated in PE 0305114F, Project 3587          (U) \$0 Total</p>												
Project 2026			Page 3 of 12 Pages					Exhibit R-2A (PE 0305114F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>	<b>PROJECT</b> <b>2026</b>
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(U) **B. Project Change Summary**  
Beyond FY01, funding consolidated within PE 0305114F, Project 3587.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to Complete</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>								
(U) AF RDT&E										
(U) Other APPN										
N/A										

(U) **D. Acquisition Strategy**  
Engineering Manufacturing Development, Fixed Price Incentive Fee (FPIF), No Non-Developmental Items (NDI)

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Conduct Precision Landing Studies					*							

\* Denotes completed activity

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>			PROJECT <b>2026</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	System Engineering					85		89		0	
(U)	Interface evaluations and architecture definitions					96		111		0	
(U)	Program Management Support					39		39		0	
(U)	Travel					10		10		0	
(U)	Total					230		249		0	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	N/A										
	<u>Support and Management Organizations</u>										
	Various	Multiple	Multiple	N/A	N/A	1,018	230	249	0	0	1,497
	<u>Test and Evaluation Organizations</u>										
	N/A										
<b>(U) Government Furnished Property:</b>											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	N/A										
	<u>Support and Management Property</u>										
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>			<b>June 2001</b> <b>2026</b>	
<b>(U) Government Furnished Property Continued:</b>						
<u>Test and Evaluation Property</u>						
N/A						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development					
	Subtotal Support and Management	1,018	230	249	0	0
	Subtotal Test and Evaluation					
	Total Project	1,018	230	249	0	0
						1,497
						1,497

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>				PROJECT <b>3587</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3587    Air Traffic Control Systems	5,793	47,402	26,982	3,608	5,929	6,046	6,174	6,304	Continuing	TBD
<p>FY03-FY07 budget numbers do not reflect the DoD strategic review results. Beginning in FY02, funding for system support will be contained in Project 3587 vice Project 2026.</p> <p>(U) <b><u>A. Mission Description</u></b>          This project funds research and development of new air traffic control surveillance, positioning, and precision approach capabilities (including the Mobile Approach Control System (MACS) which replaces non-standard, unsupportable, large footprint mobile radar approach systems with a common, easily-transportable system for both the Air National Guard and USAF). This year, the project completed development of a multi-mode receiver (the Precision Landing System receiver) which will equip every C-17 with the capability to fly approaches using a variety of landing aids, including microwave landing systems and Instrument Landing Systems located close to sources of interference. This project conducts development and testing for the National Airspace System (NAS) to support fielding of NAS hardware and software for radar systems, digital voice switches, and specialized data automation systems (previously funded in PE0305137). Additionally, this project funds the development of a replacement system for automated development of terminal instrument procedures (the precisely-measured information that tell pilots how to fly during final approach to avoid obstacles). This project is also key to ensuring Air Force Air Traffic Systems work collaboratively to safely and efficiently provide ATC services within the NAS and in host nations overseas. For example, over the next 15 years, the FAA plans to implement new or improved capabilities into the NAS in an evolutionary manner. FY 2003-2007 will concentrate on deployment of the next generation of communications, navigation, and surveillance technologies and the automation upgrades necessary to accommodate new CNS capabilities. FY 2008-2015 will see additional capabilities being added to enable the concept of Free Flight throughout the NAS. Since the Air Force must provide the same level of air traffic service to the military and flying public, funds are required to conduct interoperability and architecture studies and analyses as necessary on a wide range of aviation concepts. This effort complements similar activities associated with other safety of flight and airspace access programs such as Global Air Traffic Management that predominately focus on aircraft issues.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$2,609            Begin Mobile Approach Control System Development</p> <p>(U) \$577             Support field to ensure USAF ATC interoperability with FAA and NATO</p> <p>(U) \$850             Begin development of Air Force Terminal Instrument Procedures System</p> <p>(U) \$85              Identify interface improvements for NAS systems</p> <p>(U) \$139             Complete NAS risk reduction studies/software interoperability analyses</p> <p>(U) \$731             Complete NAS radar/automation testing</p>										
Project 3587			Page 7 of 12 Pages				Exhibit R-2A (PE 0305114F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>June 2001</b>
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>	<b>PROJECT</b> <b>3587</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2000 (\$ in Thousands) Continued</u></p> <p>(U) \$802 Complete development of NAS Military Airspace Management System</p> <p>(U) \$5,793 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$45,183 Continue Mobile Approach Control System Development</p> <p>(U) \$664 Continue the support of field activities to ensure USAF ATC interoperability with FAA and NATO</p> <p>(U) \$1,555 Continue development of Air Force Terminal Instrument Procedures System</p> <p>(U) \$47,402 Total</p> <p>The following net transactions are reflected in the FY01 program total: BTR= -81K, and SBIR= -1,473K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$24,618 Continue Mobile Approach Control System Development</p> <p>(U) \$755 Complete development of Air Force Terminal Instrument Procedures System</p> <p>(U) \$599 Continue the support of field activities to ensure USAF ATC interoperability with FAA and NATO</p> <p>(U) \$572 Conduct technology insertion studies to determine USAF ATC applicability with coalition allies</p> <p>(U) \$93 Continue support for all ATCALs Projects</p> <p>(U) \$235 Conduct national/international Air Traffic System compatibility and interface evaluations</p> <p>(U) \$58 Conduct strategic planning analyses for future deployment of Air Traffic Systems</p> <p>(U) \$52 Conduct future system architecture analyses and definitions</p> <p>(U) \$26,982 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>FY00: \$1.756M was transferred from PE 0305137F, NAS, in an effort to reduce the number of small-dollar program elements. The funds will be used to complete testing and fielding of NAS systems.</p> <p>FY01: FY01 Appropriations Bill added \$30M to accelerate procurement of three MACS test assets for Air National Guard locations.</p> <p>FY02: Air Force added \$17.728M to accelerate the core MACS development program and to integrate the various components of the three additional MACS test assets from FY01. Tower Simulator System (TSS) funds in the amount of \$3M were reprogrammed to the ATCALs procurement appropriation. The TSS components will be</p>		
Project 3587	Page 8 of 12 Pages	Exhibit R-2A (PE 0305114F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>						
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>				PROJECT <b>3587</b>						
<b>(U) B. Project Change Summary Continued</b> competitively procured from off-the-shelf sources and require no RDT&E funds.															
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>															
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>						
(U) AF RDT&E															
(U) Other APPN															
(U) OPAF - BA 3 (PE 305114F) Weapon System Code 833010	0	5,958	1,488	49,693	80,239	81,286	25,973	24,648	Continuing	TBD					
(U) OPAF, BA 3, (PE 305137F) Weapon System Code 833020	44,897	58,252	71,512	62,242	50,430	47,467	48,267	49,245	Continuing	TBD					
(U) OPAF, BA 5, (PE 305137F) Weapon System Code 86190A Initial Spares	4,237	4,907	5,258	4,379	3,756	3,997	4,137	4,220	Continuing	TBD					
(U) MILCON, AF	4,000	0	0	0	0	0	0	0	0	4,000					
<b>(U) D. Acquisition Strategy</b> Engineering Manufacturing Development, Fixed Price Incentive Fee (FPIF), No Non-Developmental Items (NDI)															
<b>(U) E. Schedule Profile</b>															
				<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
				1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Milestones															
(U) MACS															
(U) PAR Contract Award						*									
(U) ASR/OPS Contract Award								*							
(U) Operational Testing													X		
(U) AFTERPS-R Contract Award										*					
Project 3587				Page 9 of 12 Pages				Exhibit R-2A (PE 0305114F)							

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>	PROJECT <b>3587</b>
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(U) **E. Schedule Profile Continued**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete Radar OT&E							*					
(U) Complete Automation OT&E							*					
(U) Radar and Automation Milestone III								*				
(U) NAS IOC							*					
* Denotes completed activity												
X Denotes scheduled activity												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)				PROJECT 3587		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					FY 2000		FY 2001			FY 2002
(U)	Primary Hardware Development for the MACS				2,774		45,183			24,618
(U)	Primary Hardware Test and Evaluation to support NAS Milestone III				1,533		0			0
(U)	Studies/field/integration activities to support on-going Air Traffic Control				352		499			1,434
(U)	NAS Interoperability/Software Analyses to support Milestone III				139		0			0
(U)	AFTERPS-R development				850		1,555			755
(U)	Government Program Management Support and Travel for ATCALs activities				145		165			175
(U)	Total				5,793		47,402			26,982
NOTE: Until FY00, NAS RDT&E costs were captured in PE 305137F. As of FY00, those costs are captured in this program element.										
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
AFTERPS-R - Canadian Commercial Corp	FPAF	Apr 01	N/A	N/A	0	850	1,555	755	Continuing	TBD
MACS PAR Development - Lockheed Martin	FPIF	Jun 00	N/A	N/A	0	1,519	11,766	5,822	Continuing	TBD
ASR Development - ITT Gilfillan	FPAF	Oct 00	N/A	N/A	0	0	30,519	17,053	Continuing	TBD
MITRE Corp	FFP	Oct 00	N/A	N/A	210	217	980	980	Continuing	TBD
Horizons Technology Inc.	FFP	Feb 99	N/A	N/A	343	1,084	1,818	1,513	Continuing	TBD
MCR Federal Inc.	FFP	Apr 99	N/A	N/A	350	200	200	200	Continuing	TBD
Raytheon Corp	FFP	Multiple	N/A	N/A	0	668	0	0	0	668
Various	Multiple	Multiple	Continuing	Continuing	1,303	638	249	334	Continuing	TBD
Project 3587										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>				<b>3587</b>	
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
Various	Multiple	Multiple	Continuing	Continuing	378	145	165	175	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test Wing, Eglin AFB	PO	Multiple	N/A	N/A	155	472	150	150	Continuing	TBD
FL										
<b>(U) Government Furnished Property:</b>										
<u>Contract Method/Type</u>										
<u>Award or</u>										
<u>Delivery</u>										
<u>Total Prior</u>										
<u>Budget</u>										
<u>Budget</u>										
<u>Budget</u>										
<u>Budget to</u>										
<u>Total</u>										
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					2,206	5,176	47,087	26,657	TBD	TBD
Subtotal Support and Management					378	145	165	175	TBD	TBD
Subtotal Test and Evaluation					155	472	150	150	TBD	TBD
Total Project					2,739	5,793	47,402	26,982	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305128F Security And Investigative Activities					PROJECT 1931	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
1931	TECH SURVEIL COUNTER MEAS EQPT	1,407	463	472	476	486	496	506	517	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**  
 Air Force Office of Special Investigations (AFOSI) conducts specialized investigative activities and force protection support for Air Force (AF) commanders worldwide. This assists AF commanders in protecting their people and resources. AFOSI's mission includes investigating criminal matters affecting AF personnel, contract fraud and economic crimes involving AF weapons systems and spare parts, the investigation of environmental crime, counterdrugs, computer intrusion detection and forensic media analysis of computer crimes. This element supports Technical Surveillance Countermeasures (TSCM), Computer Crime Investigations (CCI), and technical support to criminal and counterintelligence investigations and operations conducted by AFOSI. AFOSI's TSCM mission provides security assessments to both AF and DoD facilities and programs. The purpose of CCI research is to improve AF and DoD Information Operations capability by enhancing AFOSI's ability to deter or prevent spies, hackers, or saboteurs from manipulating, damaging, or stealing sensitive war fighting data or systems. Failing that, to investigate, identify, and prosecute those who do. While most research to meet operational requirements is Operational System Development, there is also research in the category of Engineering and Manufacturing Development due to a need for modifications to present technology.

The equipment required to provide technical support to investigations is unique and complex. This equipment must be continually updated to provide state-of-the-art capabilities to detect and neutralize criminal activities targeted against the AF and DoD. In an era of advancing technology, reduced manning, and increasingly high level fraud, environmental crime and computer crime investigations, technical investigative equipment must be continuously updated to enable AFOSI special agents to have the most cost effective and best possible means of thwarting criminal acts. The evolution of a new wave of computer crimes has made AFOSI responsible for the collection, investigative analysis, national level law enforcement coordination, and dissemination of hacker activity and intrusion incidents for the Air Force. AFOSI's computer crime equipment must stay on the leading edge of technology to collect criminal information as well as pursue and apprehend criminals through a global medium. AFOSI must continually update its existing high tech computer surveillance equipment to support ongoing and future investigative operations to identify hackers and hacker groups, as well as potential hostile government activities targeting Air Force communication and control systems.

Critical Infrastructure Protection identifies weaknesses in the Air Force Critical infrastructure, highlights critical countermeasures and acquires and deploys cost-effective solutions. The intent is: to provide an Air Force-wide review of current infrastructure vulnerabilities; prioritize AF protection planning and integrate with existing programs; identify gaps based on AF needs; direct studies to refine AF requirements.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
		June 2001		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0305128F Security And Investigative Activities</b>	<b>1931</b>		
<b>(U) A. Mission Description Continued</b>				
<b>(U) FY 2000 (\$ in Thousands)</b>				
(U) \$1,407	Computer Crimes Investigative (CCI) Equipment. RDT&E of CCI Software			
(U) \$1,407	Total			
<b>(U) FY 2001 (\$ in Thousands)</b>				
(U) \$108	Next generation Technical Surveillance Countermeasures (TSCM) receiver. Continuing development of TSCM receiver software			
(U) \$25	Language translation software. Continuing development of document translation software			
(U) \$30	Continuing development of Communications web portal			
(U) \$300	Computer Crimes Investigative (CCI) Equipment. RDT&E of CCI Software			
(U) \$463	Total			
<b>(U) FY 2002 (\$ in Thousands)</b>				
(U) \$372	Computer Crimes Investigative (CCI) Equipment. RDT&E of CCI Software			
(U) \$100	Next generation Technical Surveillance Countermeasures (TSCM) receiver. Continuing development of TSCM receiver Software			
(U) \$472	Total			
<b>(U) B. Budget Activity Justification</b>				
This program is in Budget Activity 7, Operational System Development, because its products are primarily for use in investigative activity of an operational nature.				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	441	467	472	TBD
(U) Appropriated Value	1,449	467		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-4		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions	-6			
(U) Adjustments to Budget Years Since FY 2001 PBR	-36			
(U) Current Budget Submit/FY 2002 PBR	1,407	463	472	TBD
Project 1931	Page 2 of 5 Pages	Exhibit R-2 (PE 0305128F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305128F Security And Investigative Activities</b>					PROJECT <b>1931</b>	
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
<b>(U) Significant Program Changes:</b> \$1.0M Congressional add in FY 00											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete		
(U) AF RDT&E											
(U) Other APPN											
(U) Automatic Data Processing Equipment	0	0	1,498	1,535	1,594	1,652	1,741	1,829	Continuing		
(U) Radio Equipment	413	408	412	412	413	412	413	413	Continuing		
(U) Base Communication Infrastructure	0	0	0	0	0	0	0	0	0		
(U) Base Procured Equipment	0	0	0	0	0	0	0	0	0		
(U) Technical Surveillance Countermeasures Equipment	3,743	2,948	4,236	4,057	4,142	4,232	4,265	4,212	Continuing		
(U) BA63/Security & Investigative Activities/PE0305128F											
<b>(U) E. Acquisition Strategy</b> All major contracts within this Program Element were awarded via sole source contract due to the sensitivity of technologies involved.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U) TSCM Receiver/Software Suite					X				X		
(U) Language Translation Software					X					X	
(U) CCI Equipment						X					X
(U) Information Technology									X		
Project 1931											
Page 3 of 5 Pages											
Exhibit R-2 (PE 0305128F)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305128F Security And Investigative Activities			PROJECT 1931		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Primary Hardware Development					0		0		0
(U)	Software Development					1,407		463		472
(U)	Total					1,407		463		472
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
AF Infrastructure Protection Studies					1,884	0	0		0	1,884
<u>Product Development Organizations</u>										
Matrix Engineering	SS/FFP	Jan 01	N/A	N/A	339	0	108	0	Continuing	TBD
Army Research Lab	MIPR	Aug 01	N/A	N/A	150	0	25	0	Continuing	TBD
Sandia Natl Lab	MIPR	Apr 01	N/A	N/A	1,249	126	0	200	Continuing	TBD
AFWIC	MIPR	Jul 01	N/A	N/A	0	400	300	0	0	700
Other Agency	MIPR	Aug 00	N/A	N/A	175	175	0	200	Continuing	TBD
Los Alamos Natl Lab	MIPR	Oct 00	N/A	N/A	0	669	0	0	0	669
Maxwell AFB, AL	MIPR	Dec 00	N/A	N/A	0	0	30	0	0	30
<u>Support and Management Organizations</u>										
TBA	N/A	N/A	N/A	N/A	0	37	0	72	Continuing	TBD
None										
<u>Test and Evaluation Organizations</u>										
None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305128F Security And Investigative Activities			PROJECT 1931		
<b>(U) Government Furnished Property:</b>									
<u>Item</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
Solutions Engineering	C/FFP	Jun 99		0	0	0	0	0	0
Fedsim	SS/FFP	Aug 99		69	0	0	0	0	69
Lucent Tech	SS/FFP	Mar 99		91	0	0	0	0	91
<u>Subtotals</u>				<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
AF Infrastructure Protection Studies				1,884	0	0		0	1,884
Subtotal Product Development				1,913	1,370	463	400	TBD	TBD
Subtotal Support and Management				0	37	0	72	TBD	TBD
Subtotal Test and Evaluation				160	0	0	0	0	160
Total Project				3,957	1,407	463	472	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	
										<b>June 2001</b>	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>					<b>0305144F Titan Space Launch Vehicles</b>					<b>4135</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4135	Titan II/IV	30,824	25,578	21,293	0	0	0	0	0	0	3,015,592
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b>A. Mission Description</b>            National security requirements dictate a continuing, highly reliable means of placing critical DoD satellites into required orbits. The Titan IV program provides the capability to launch the largest of these satellites into near-earth or geosynchronous orbits from either the east or west coast launch facilities. Titan IV is used to launch Air Force, National Reconnaissance Office, and NASA payloads. This program provides several different configurations of the Titan IV [No Upper Stage (NUS), Inertial Upper Stage (IUS), and Centaur]. In addition, the Titan IV program has developed a new vehicle configuration, the Titan IVB, with solid rocket motor upgrade (SRMU), new avionics and ground support equipment to meet reliability and increased performance requirements. This program provides continuing integration support to the payload community as well as continuing engineering support to maintain system characterization and reliability.</p> <p>Since FY94, this program element also included funding for sustaining engineering, payload integration, and government costs for the Titan II space launch vehicle. In FY96, program office support was moved to procurement funding. Major RDT&amp;E activities in FY00 were static test firing of the requalified Titan IV SRMU in 2QFY00, and non-recurring integration for Milstar satellites. Major RDT&amp;E activities in FY01 are completing Milstar 4 integration, beginning Milstar 5 integration, and integration for the Titan II/Coriolis Space Test Program mission.</p> <p>Beginning in FY00, the remaining Inertial Upper Stages Program (PE 35138F) funds transferred into the Titan program to provide consolidated acquisition of the IUS to support the launch of Defense Support Program (DSP) satellites. IUS is an upper stage on the Titan IV (can be modified for Shuttle) and delivers the DSP satellite to the required orbit. The RDT&amp;E program continuously evaluates and improves upper stage reliability, cost effectiveness, and responsiveness; supports redesign of aging equipment and spares which are no longer manufactured or available; investigates flight anomalies; and conducts small studies to assist in defining future upper stages.</p> <p>(U) <b>FY 2000 (\$ in Thousands)</b>            (U) \$4,888 Completed Solid Rocket Motor Upgrade (SRMU) requalification            (U) \$18,954 Continue Milstar 4 integration, begin Milstar 5 integration            (U) \$2,483 Supported Air Force Research Lab (Phillips) SRMU requalification project            (U) \$3,859 Titan Hardware Redesign and Obsolescence</p>											
Project 4135			Page 1 of 5 Pages				Exhibit R-2 (PE 0305144F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0305144F Titan Space Launch Vehicles</b>		<b>4135</b>	
<b>(U) A. Mission Description Continued</b>					
(U) <u>FY 2000 (\$ in Thousands) Continued</u>					
(U)	\$640	Titan II - Coriolis integration			
(U)	\$30,824	Total			
The following net transaction is not reflected in the FY00 program total: BTR = -\$3,104K. This transaction is not reflected in other sections of the R-Docs where the FY00 totals are shown.					
(U) <u>FY 2001 (\$ in Thousands)</u>					
(U)	\$23,967	Complete Milstar 4 integration; continue Milstar 5 integration			
(U)	\$1,611	Continue Titan II - Coriolis integration			
(U)	\$25,578	Total			
The following net transactions are not reflected in the FY01 program total: BTR = -\$3,951K and SBIR = -\$130K. These transactions are not reflected in other sections of the R-Docs where the FY01 totals are shown.					
(U) <u>FY 2002 (\$ in Thousands)</u>					
(U)	\$19,868	Complete Milstar 5/6 integration			
(U)	\$1,425	Complete Titan II - Coriolis integration			
(U)	\$21,293	Total			
<b>(U) B. Budget Activity Justification</b>					
This PE is in Budget Activity 7, Operational Systems Development, because Titan II, Titan IV and the Inertial Upper Stage are in production and are operational vehicles. The major Titan IV effort remaining is Milstar integration.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	45,379	25,815	27,065	3,036,156
(U)	Appropriated Value	45,379	25,815		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-356	-181		
	b. Small Business Innovative Research	-1,649			
	c. Omnibus or Other Above Threshold Reprogram	-10,172			
	d. Below Threshold Reprogram	-2,201			
Project 4135		Page 2 of 5 Pages	Exhibit R-2 (PE 0305144F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305144F Titan Space Launch Vehicles					PROJECT 4135		
(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b>												
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		<u>Total Cost</u>	
	e. Rescissions											
					-177		-56					
(U)	Adjustments to Budget Years Since FY 2001 PBR											
									-5,772			
(U)	Current Budget Submit/FY 2002 PBR											
					30,824		25,578		21,293		3,015,592	
(U)	<b><u>Significant Program Changes:</u></b>											
	FY00: \$10.172M FY00 reprogrammed during Omnibus due to successful SRMU requalification. Funding sourced from Phillips Lab (\$0.3M), SRMU requalification (\$5.877M), and Hardware Redesign (\$1.698M). Remaining Omnibus funding removed from Milstar integration due to launch delays (\$2.197M) and completed IUS studies (\$0.1M).											
(U)	<b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	Missile Procurement, AF PE 35144F, Budget Activity 5, P-27	399,434	406,047	385,298	237,121	7,988	6,856	0	0	0	6,911,166	
(U)	<b><u>E. Acquisition Strategy</u></b>											
	The program has implemented a revised acquisition strategy for the 39-vehicle program. During FY1996, Titan IV transitioned from the old '85-C-0019' development/production and payload integration contract to new contracts designed to improve cost accountability, correct contract discrepancies, and establish an overall programmatic view for the effort to complete the program. The new contracts combine Titan II and Titan IV production, storage, pad maintenance and deactivation, launch operations, anomaly resolution, development and hardware requalification, payload integration, and program studies to provide the greatest potential for cost savings by maximizing use of resources and eliminating duplicative processes.											
(U)	<b><u>F. Schedule Profile</u></b>											
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>			
					1	2	3	4	1	2	3	4
(U)	Complete Titan IV B-27 and B-32 Return to Flight Activities											
					*							
(U)	Test firing of SRMU for requalification											
						*						
(U)	Milstar launches (final launch FY03)											
										X		
	*completed event      X planned event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development						PE NUMBER AND TITLE 0305144F Titan Space Launch Vehicles				PROJECT 4135	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Titan IV Contract Costs R&D					4,888		0		0	
(U)	Contract Costs Unified Payload Integration					19,594		25,578		21,293	
(U)	Titan Hardware Redesign & Obsolescence					3,859		0		0	
(U)	Facility Support					2,483		0		0	
(U)	Total					30,824		25,578		21,293	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	LMC 85-C-0019*	SS/FPIF	1QFY85	11,203,100	11,203,100	2,042,016				0	2,042,016
	LMC 85-C-0085**	SS/FPIF	1QFY85	678,715	678,715	72,504				0	72,504
	LMC 92-C-0028**	SS/CPAF	3QFY92	515,251	515,251	93,428				0	93,428
	LMC 96-C-0035	SS/CPAF	3QFY96	232,923	229,304	220,870	4,888			0	225,758
	LMC 98-C-0005***	SS/CPAF	1QFY98	257,381	256,829	18,756	23,453	25,578	21,293	0	89,080
	Facilities	n/a	n/a			4,510	2,483	0	0	0	6,993
NOTE: EAC are total contract values while funding values are AF funds only											
* Contract closed											
** Contracts inactive											
*** Includes both RDT&E and Procurement funding											
<u>Support and Management Organizations</u>											
	Tecolote, SRS, TRW, Antioch			N/A	N/A	101,557				0	101,557
	Other Research & Dev.			N/A	N/A	33,068				0	33,068
	Aerospace			N/A	N/A	188,367				0	188,367
	Other Prgm Supprt			N/A	N/A	162,821				0	162,821

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
07 - Operational System Development				0305144F Titan Space Launch Vehicles			June 2001	PROJECT 4135	
<b>(U) Performing Organizations Continued:</b>									
<u>Test and Evaluation Organizations</u>									
None									
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>	<u>Award or</u>							
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>Vehicle</u>								
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				2,452,084	30,824	25,578	21,293	0	2,529,779
Subtotal Support and Management				485,813				0	485,813
Subtotal Test and Evaluation									
Total Project				2,937,897	30,824	25,578	21,293	0	3,015,592

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305160F Defense Meteorological Satellite Program					PROJECT 4758	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4758	DMSP Program	20,339	25,139	12,259	7,892	8,716	7,843	7,974	8,997	0	936,598
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) **A. Mission Description**  
 The Defense Meteorological Satellite Program (DMSP) is a fully operational program supporting all military services. Operational commanders require timely, quality weather information to effectively employ weapon systems and protect DoD resources. DMSP is the DoD's most important and often the only source of global weather data to support US military operations. It provides visible and infrared cloud cover imagery (1/3 nm constant resolution) and other meteorological, oceanographic, land surface, and space environmental data. At least two satellites are required in sun-synchronous, 450nm polar-orbit at all times (sun-synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day). Presidential Decision Directive PDD/NSTC-2 directed convergence of DMSP with the National Oceanic and Atmospheric Administration's (NOAA) POES polar-orbiting weather satellite system. A key step towards full program convergence was achieved in FY98 when DMSP satellite operations consolidated with NOAA satellite operations at NOAA's Suitland, MD, Satellite Operations Control Center (SOCC). DMSP F-15 was launched on a Titan-II booster in Dec 99. DMSP F-16 will be the last DMSP to launch on a Titan-II booster and is currently scheduled to launch in Nov of 2001. The remaining DMSPs, F-17 through F-20, are all manifested to launch on an Evolved Expendable Launch Vehicle (EELV) booster.

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$13,015 Continued system integration and test, and related support activities  
 (U) \$988 Continued Titan II integration effort  
 (U) \$3,916 Continued EELV interface design (transition to EELV)  
 (U) \$981 Continued Small Tactical Terminal (field portable weather terminal) Special Sensor Microwave Imager and Sounder (SSMIS) software upgrades  
 (U) \$1,439 Began SSMIS calibration and validation  
 (U) \$20,339 Total

The following net transactions are not reflected in the FY00 program total: BTR--\$137K. This transaction is not reflected in other sections of the R-Docs where an FY00 total is shown.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																		
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305160F Defense Meteorological Satellite Program</b>	PROJECT <b>4758</b>																																																		
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$15,520           Continued system integration and test, and related support activities</p> <p>(U) \$941               Completed Titan II integration effort</p> <p>(U) \$3,602           Continued EELV interface design (transition to EELV)</p> <p>(U) \$1,678           Completed integration studies and test analysis to retrofit DMSP satellites with solid state recorders (SSRs)</p> <p>(U) \$3,398           Continued SSMIS calibration and validation</p> <p>(U) \$25,139          Total</p> <p>    The following net transactions are not reflected in the FY01 program total: BTR = -\$2.2M and SBIR = -\$786K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$9,601           Continue system integration and test, and related support activities</p> <p>(U) \$1,550           Continue EELV interface design (transition to EELV)</p> <p>(U) \$1,108           Continue SSMIS calibration and validation</p> <p>(U) \$12,259          Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>    This program is in Budget Activity 7, Operational Systems Development, because it supports the current operational DMSP constellation.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right; width: 10%;"><u>FY 2000</u></th> <th style="text-align: right; width: 10%;"><u>FY 2001</u></th> <th style="text-align: right; width: 10%;"><u>FY 2002</u></th> <th style="text-align: right; width: 10%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">21,207</td> <td style="text-align: right;">25,372</td> <td style="text-align: right;">14,934</td> <td style="text-align: right;">955,279</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">21,535</td> <td style="text-align: right;">25,372</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: right;">-212</td> <td style="text-align: right;">-178</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: right;">-783</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">-117</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: right;">-84</td> <td style="text-align: right;">-55</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: right;">-2,675</td> <td></td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	21,207	25,372	14,934	955,279	(U) Appropriated Value	21,535	25,372			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-212	-178			b. Small Business Innovative Research	-783				c. Omnibus or Other Above Threshold Reprogram	-117				d. Below Threshold Reprogram					e. Rescissions	-84	-55			(U) Adjustments to Budget Years Since FY 2001 PBR			-2,675	
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Project 4758	Page 2 of 7 Pages	Exhibit R-2 (PE 0305160F)																																																		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0305160F Defense Meteorological Satellite Program			4758				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>						
(U)	Current Budget Submit/FY 2002 PBR	20,339	25,139	12,259	936,598						
<b>(U) Significant Program Changes:</b>											
Funding: FY02-07 adjusted downward due to a Zero Based Transfer of mission sensor support and services and calibration/validation funding from RDT&E to Missile Procurement to appropriately align funding with the work being performed.											
Schedule: Satellite Launch (F-16) rescheduled from 23 Jan 01 to not earlier than 14 Nov 01.											
Technical: None											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Missile Procurement/PE 0305160F (Budget Activity 5, Line Item P-27)	39,694	67,952	47,580	62,058	52,235	52,576	47,610	48,359	77,200	2,422,664
(U)	Other Procurement/PE 0305160F (Line Item P-63) FY01 and out funds transferred to PE 0305111F for DMSP tactical terminals. Related RDT&E: PE 0603434F, National Polar-orbiting Operational Environmental Satellite System (NPOESS) PE 0305160N, DMSP (provides funds for Navy unique studies)	1,991	0	0	0	0	0	0	0	0	264,657

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>										DATE <b>June 2001</b>																																																																												
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305160F Defense Meteorological Satellite Program</b>					PROJECT <b>4758</b>																																																																												
<p>(U) <b><u>E. Acquisition Strategy</u></b>                  Support and services contracts for the spacecraft, sensors, ground systems, and supporting software have been awarded to various contractors. No major milestone decisions remain. The program is focused on successful completion of current contracts, award of follow-on Spacecraft Integration &amp; Test and Independent Verification &amp; Validation contracts, plus contractor support for spacecraft, sensors, and ground systems already procured.</p> <p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="3" style="text-align: center;"><u>FY 2000</u></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Satellite Launch (F-15)</td> <td style="text-align: center;">*</td> <td></td> </tr> <tr> <td>(U) Satellite Launch (F-16)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Sensor Support/Services Contract Consolidation</td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Tactical Terminal Program funding transferred to AF Weather Agency</td> <td></td> <td style="text-align: center;">*</td> </tr> </tbody> </table> <p>* = Completed event                  X = Planned event</p>													<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Satellite Launch (F-15)	*												(U) Satellite Launch (F-16)									X				(U) Sensor Support/Services Contract Consolidation				*									(U) Tactical Terminal Program funding transferred to AF Weather Agency												*
	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>																																																																															
	1	2	3	4	1	2	3	4	1	2	3	4																																																																										
(U) Satellite Launch (F-15)	*																																																																																					
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Project 4758				Page 4 of 7 Pages				Exhibit R-2 (PE 0305160F)																																																																														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0305160F Defense Meteorological Satellite Program</b>			<b>4758</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Launch Vehicle Transition*				4,904		4,543			1,550
(U)	Spacecraft Integration and Test**				4,698		8,367			1,458
(U)	Calibration/Validation***				1,439		4,765			2,726
(U)	Algorithm Development				436		210			233
(U)	MARK IVB/STT Enhancements				1,421		0			0
(U)	Systems Engineering Support				4,701		3,777			3,350
(U)	Program Management Support				2,740		3,477			2,942
(U)	Total				20,339		25,139			12,259
<p>* A necessary portion of the Launch Vehicle Transition funding slipped into FY01 due to a change in the EELV booster contractor from Lockheed Martin Missiles &amp; Space to Boeing. This requirement must be accomplished by the end of FY02 to maintain the integration and launch schedule for DMSP F-17.</p> <p>** Spacecraft Integration and Test funding increases in FY01 due to Special Sensor Microwave Imager/Sounder (SSMIS) and Solid State Recorder (SSR) integration studies/analysis for DMSP F-17.</p> <p>*** Calibration/Validation funding increases in FY01 due to required Naval Research Laboratory and Aerojet Corporation calibration &amp; validation of the first on-orbit SSMIS. DMSP F-16, scheduled to launch in early FY02, will carry the first SSMIS. Critical calibration/validation work is required to enable the new sensor to provide operationally useful data.</p>										
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed -Martin	SS/CPAF	Apr 92	3,764	3,764	3,764				0	3,764
Lockheed-Martin (EELV Int Design)	SS/CPAF	May 97	17,867	17,867	1,871	3,368	4,070	3,008	5,550	17,867
Northrop-Grummn (SSR&OLS)	SS/CPAF	May 95	7,412	7,412	5,509	225	1,678		0	7,412
Project 4758					Page 5 of 7 Pages			Exhibit R-3 (PE 0305160F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>				<b>0305160F Defense Meteorological Satellite Program</b>				<b>4758</b>	
<b>(U) Performing Organizations Continued:</b>									
<u>Product Development Organizations</u>									
Northrop-Grummn (CSS&S)	SS/CPAF	May 00	13,901	13,901		5,547	1,618	6,736	13,901
Lockheed-Martin	C/CPAF	Oct 88	39,513	39,513	39,513			0	39,513
Harris (SSMIS/STT SW)	C/CPAF	Jun 94	8,617	8,617	7,196	1,421		0	8,617
Det 11/GSA (Mark IVB P3I)	MIPR	Jan 97	2,986	2,986	2,986			0	2,986
SMC/CL (Titan)	TII & EELV PO	Oct 94	5,018	5,018	3,089	988	941	0	5,018
Msn Unique)									
Boeing (EELV Msn Unique	SS/CPAF	May 00	472	472		472		0	472
Studies)									
Boeing (EELV Msn Unique	SS/CPAF	Jul 00	545	545		545			545
Studies & Services)									
Aerojet	SS/CPAF	May 92	2,530	2,530	2,530			0	2,530
Aerojet	C/CPAF/FFP	Mar 89	85,979	85,979	85,979			0	85,979
Aerojet (SSM/TW/IS S&S &	SS/CPAF	May 98	2,183	2,183	1,635	548		0	2,183
Model + SSMIS)									
Raytheon, formerly Hughes	SS/CPFF	May 96	236	236	227	9		0	236
(SSMI Spt & Svc)									
AFRL	MIPR/PD	Oct 95			4,625	589	75		5,289
NRL	MIPR/Var	Oct 95			6,537	3,023	3,850	1,321	400
APL	MIPR/Var	Oct 95			2,624	859	55		0
SMC (Det 3 SSSG/NPOESS)	FCA/MIPR	Dec 95			2,506				0
SMC/CC							1,000		1,000
Sandia	MIPR/Var	Oct 96			200	420	200		0
NOAA							34		34
Other	Various				2,587	431	435	20	
Historical Satellite Blocks	Various				583,786				583,786

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305160F Defense Meteorological Satellite Program			PROJECT 4758		
<b>(U) Performing Organizations Continued:</b>									
<u>Support and Management Organizations</u>									
FFRDC	MORD	Oct 95		17,019	3,481	2,647	2,051	4,560	29,758
PRC/BD Systems	C/CPAF	Aug 95		5,792	1,220	1,130	1,299	6,996	16,437
Program Mgmt				15,167	2,740	3,477	2,942	17,180	41,506
Litigation Support				1,809				0	1,809
Other	Various	Jul 91		1,958				0	1,958
Historical Satellite Blocks	Various			38,530				0	38,530
<u>Test and Evaluation Organizations</u>									
NONE									
<b>(U) Government Furnished Property:</b>									
<u>Contract</u>									
<u>Method/Type</u>									
<u>Award or</u>									
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
NONE									
<u>Support and Management Property</u>									
NONE									
<u>Test and Evaluation Property</u>									
NONE									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				757,164	12,898	17,885	5,967	12,686	806,600
Subtotal Support and Management				80,275	7,441	7,254	6,292	28,736	129,998
Subtotal Test and Evaluation									
Total Project				837,439	20,339	25,139	12,259	41,422	936,598

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)					PROJECT	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3028	Navstar GPS	39,004	66,360	53,093	57,035	50,629	50,814	54,982	59,552	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) **A. Mission Description**  
 The Global Positioning System (GPS) is a space-based radio positioning, navigation, and time distribution system. GPS User Equipment (UE) consists of standardized receivers, antennae, antenna electronics, etc., grouped together in sets to derive navigation and time information transmitted from GPS satellites. These receiver sets are used by all Services and DoD. RDT&E funds UE development and testing, studies and engineering to assist UE aircraft integration, software upgrades, product improvement studies, commercial GPS UE test and evaluation, and mission support. Due to increasing military GPS dependence and emerging Electronic Warfare (EW) threat, Navigation Warfare (Navwar) program was established to address EW solutions for GPS. Key elements of GPS Modernization include protecting U.S. military and allies' use of GPS, preventing hostile exploitation of GPS, and preserving civil use of GPS outside the area of operations (AOO).

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$6,090 Continued advanced UE technology effort  
 (U) \$17,627 Continued Selective Availability Anti-Spoofing Module (SAASM) /GPS Receiver Applications Module (GRAM)-SAASM development  
 (U) \$2,741 Continued integration, test and evaluation  
 (U) \$404 Continued ACTD (Protection) objectives under Joint GPS Combat Evaluation (JGPSCE) Demo  
 (U) \$5,659 System Engineering and Support  
 (U) \$6,483 Continued classified requirement  
 (U) \$39,004 Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$16,360 Continue advanced UE technology effort  
 (U) \$24,114 Continue SAASM/GRAM-SAASM development  
 (U) \$2,338 Continue Integration, Test and Evaluation  
 (U) \$375 Complete ACTD (Protection) objectives under Joint GPS Combat Evaluation (JGPSCE)  
 (U) \$7,320 Continue System Engineering and Support

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)</b>
	<b>PROJECT</b>

(U) **A. Mission Description Continued**

(U) FY 2001 (\$ in Thousands) Continued

- (U) \$7,553 Continue Modernization efforts (SAASM M-Code Development)
- (U) \$8,300 Continue classified requirement
- (U) \$66,360 Total

The following net transactions are not reflected in the FY01 program total: SBIR = -\$4,377K; BTR = -\$400K These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.

(U) FY 2002 (\$ in Thousands)

- (U) \$12,452 Continue Advanced UE Technology efforts
- (U) \$15,039 Continue SAASM/GRAM-SAASM development
- (U) \$3,492 Continue Integration, Test and Evaluation
- (U) \$5,799 Continue System Engineering and Support
- (U) \$14,311 Continue Modernization efforts (SAASM M-Code Development)
- (U) \$2,000 Continue classified requirement
- (U) \$53,093 Total

(U) **B. Budget Activity Justification**

This program element is in Budget Activity 7 - Operational System Development, because UE passed Milestone IIB in January 1992.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	49,244	66,975	50,425	TBD
(U) Appropriated Value	49,913	66,975		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-399	-469		
b. Small Business Innovative Research	-1,814			
c. Omnibus or Other Above Threshold Reprogram	-3,200			
d. Below Threshold Reprogram	-5,301			
e. Rescissions	-195	-146		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)				03028			
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Adjustments to Budget Years Since FY 2001 PBR					2,668					
(U)	Current Budget Submit/FY 2002 PBR			39,004	66,360	53,093		TBD			
(U)	<u>Significant Program Changes:</u>										
	The following net transactions are not reflected in the FY01 program total: SBIR = -\$4,377K; BTR = -\$400K. -\$6,289K FY02 adjustment to fund higher priority Air Force efforts; +\$9,000K added in FY02 for M-code development and SAASM. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Operations and Maintenance (PE 0305164F, BA 1 - Operating Forces, SAG 13D)	1,444	1,951	2,078	1,940	6,344	6,311	6,567	6,615		33,250
(U)	Aircraft Procurement (PE 0305164F, BA 7, Aircraft Support Equipment, BP19, P-74)	35,320	38,931	29,659	27,894	50,963	68,255	79,208	71,000		401,230
(U)	Other Procurement (PE 0305164F, BP 63 - Electronics & Telecommunications Equipment, WSC 6730, P-62)	2,335	1,637	4,384	4,393	4,758	4,380	4,771	1,061		27,719
(U)	Related RDT&E:										
(U)	PE 0305165F, NAVSTAR										
Project 3028		Page 3 of 8 Pages					Exhibit R-2 (PE 0305164F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)</b>
<b>PROJECT</b>	

**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
GPS (Space/Ground Segments)										
(U) PE 0603421, NAVSTAR GPS (GPS III)										
(U) PE 0305176F, Combat Survivor/Evader Locator										

**(U) E. Acquisition Strategy**

Several ongoing and planned concept definition and technology risk reduction programs will define and mature required GPS technologies needed for GPS Modernization. Our strategy will develop an open system architecture for a GPS receiver based on the GPS Receiver Application Module (GRAM) concept. The GRAM-SAASM program is a further risk reduction effort to integrate the GPS receiver operations internally between GRAM and SAASM. Also, several anti-jam technology risk reduction efforts will be pursued to mature technologies and prepare for technology insertion. Continue to work with platforms/users to identify requirements and upgrade paths to insert GPS enhancements. Additionally, conduct a study to develop a low end and high end handheld receivers as the first part of a two step acquisition approach (a PRDA followed by a production contract).

**(U) F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Defense Science Board	*											
(U) GRAM-SAASM ICD complete							*					
(U) GRAM-SAASM preproduction prototypes deliveries											X	
(U) Begin M-Code receiver development							*					
(U) DAE review for M-Code receiver								X				
(U) Adv UE Technology - GAS AE upgrade CDR												X
(U) Adv UE Tech - Small antenna prototype development completion											X	
(U) Adv UE Tech - Filter (AE-1 FF Applique Development Completion)								X				
(U) Adv UE Tech - Receiver (Draft ultralight Algorithm Evaluation at												

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)</b>	<b>PROJECT</b>
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(U) **F. Schedule Profile Continued**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
Eglin)												
(U) Begin Handheld study						*						
(U) Complete Handheld study											X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)</b>					
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						FY 2000		FY 2001		FY 2002
(U)	Advanced UE Technology effort					6,090		16,360		12,452
(U)	SAASM/GRAM-SAASM development					17,627		24,114		15,039
(U)	Integration, Test and Evaluation					2,741		2,338		3,492
(U)	ACTD (Protection) objectives under JGPSCE demo					404		375		0
(U)	System engineering and support					5,659		7,320		5,799
(U)	Modernization (SAASM M-Code Development)							7,553		14,311
(U)	Classified Requirement					6,483		8,300		2,000
(U)	Total					39,004		66,360		53,093
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Rockwell (MAGR)	C/FPIF/FFP/CPAF	Various	19,293	19,293	19,293	0	0	0	0	19,293
DOE Sandia (SAASM)	MIPR	Feb 94	N/A	N/A	10,584	6,338	6,700	2,500	Continuing	TBD
NAWC (SAASM)	MIPR	Oct 95	599	599	599	0	0	0	0	599
Various (SAASM)	Various	Various	N/A	N/A	5,728	5,471	2,655	2,043	Continuing	TBD
Various (SAASM M-Code)	Various	Dec 00	N/A	N/A	0	0	7,553	18,268	Continuing	TBD
Alliant Techsys Inc (SAASM)	C/CPFF	Oct 95	4,782	4,782	4,782	0	0	0	0	4,782
Multiple (NAVWAR PRDAs)	C/CPAF	Aug 96	13,440	13,440	13,440	0	0	0	0	13,440
Holloman AFB (Integration)	Project Order	N/A	N/A	N/A	3,280	580	659	626	Continuing	TBD
General Dynamics (Various)	Time and	Jan 96	1,810	1,810	1,810	0	0	0	0	1,810
Project 3028					Page 6 of 8 Pages			Exhibit R-3 (PE 0305164F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE		
								June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development				0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)						
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
	Materials									
ACTD	Various	Various	7,428	7,428	7,428	0	0	0	0	7,428
(Prevention/Protection)										
ACTD (Protection)	Various	Various	20,186	20,186	19,407	404	375	0	0	20,186
Adv UE Protection Dev	Various	Various	16,075	16,075	0	1,810	7,683	6,582	0	16,075
Various (NET)	Various	Various	10,334	10,334	10,334	0	0	0	0	10,334
Various (Classified Requirement)	Various	Various	N/A	24,535	7,752	6,483	8,300	2,000	Continuing	TBD
Various (GPS Modernization)	Various	Various	TBD	TBD	5,785	0	0	0	0	5,785
Various (Navwar M&S)	Various	Various	3,575	3,575	3,575	0	0	0	0	3,575
CeCom (DAGR study)	MIPR	Dec 97	273	273	273	0	0	0	0	273
Allan Osborne, Alliant Tech, Rockwell Collins, and Raytheon (Handheld PRDA)	PRDA	Jan 01	13,645	13,645	0	0	10,645	3,000	0	13,645
Various (GRAM-SAASM)	PRDA	Jul 98	27,469	27,469	21,159	4,010	2,300	0	0	27,469
Advanced UE Tech Invest	Various	Various	4,646	4,646	4,646	0	0	0	0	4,646
Receiver Technology	Various	Various	N/A	N/A	0	3,218	1,850	2,650	Continuing	TBD
Anti-jam Filter Technology	Various	Various	N/A	N/A	0	150	450	1,700	Continuing	TBD
Advanced Antenna Technology	Various	Various	N/A	N/A	0	2,722	3,415	5,102	Continuing	TBD
<u>Support and Management Organizations</u>										
Overlook Sys (OASD/C3I)	C/CPFF	Dec 95	N/A	N/A	17,028	1,934	2,780	2,309	Continuing	TBD
Aerospace Corp (Technical Supt)	CPFF	Various	N/A	N/A	928	2,112	2,112	2,112	Continuing	TBD
SMC/FMB (Shared Prg Cost)	Various	Various	N/A	N/A	5,158	674	667	628	Continuing	TBD
PRC (Technical Supt)	Time and	Dec 95	714	714	714	0	0	0	0	714

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305164F NAVSTAR Global Positioning System (User 3028 EQ) Space)				PROJECT	
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
Materials										
Miscellaneous (In-house support)	Various	Various	N/A	N/A	3,903	937	6,537	707	Continuing	TBD
Various (Other Navwar Studies)	Various	Various	2,375	2,375	2,375	0	0	0	0	2,375
<u>Test and Evaluation Organizations</u>										
46th TG (SAASM/Test)	Project Order	Various	31,987	31,987	31,987	0	0	0	0	31,987
46th TG (UE develop & product testing)	Project Order	Various	N/A	N/A	4,793	2,161	1,679	2,866	Continuing	TBD
<b>(U) Government Furnished Property:</b>										
<u>Contract</u>										
<u>Method/Type</u>										
<u>Award or</u>										
<u>Delivery</u>										
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Date</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					139,875	31,186	52,585	44,471	TBD	TBD
Subtotal Support and Management					30,106	5,657	12,096	5,756	TBD	TBD
Subtotal Test and Evaluation					36,780	2,161	1,679	2,866	TBD	TBD
Total Project					206,761	39,004	66,360	53,093	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)					PROJECT 3030	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3030	NAVSTAR GPS (Space & Control)	106,849	258,592	186,459	206,960	72,760	60,135	59,667	51,003	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) **A. Mission Description**  
 This program element funds Research and Development for the NAVSTAR Global Positioning System (GPS) Space and Control segments of the overall GPS program. This includes, but is not limited to: satellite development, training simulators, development of an Integrated Mission Operation Support Center (IMOSC), Integrated Logistics Support (ILS) products, and ground control segment development, procurement, and operation; sustaining engineering; space and ground segments upgrades; and R&D efforts to support the entire GPS system deployment.

GPS Block IIF satellites and up to as many as 12 Block IIR satellites will be modified to include a second civil signal and new military signal. Block IIF satellites will also include a third civil signal (L5). A new GPS Block III program was initiated after new start approval in August 2000 to incorporate a higher power military signal to provide enhanced anti-jam capability, the second and third civil signals, and the new military signal.

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$8,362 Continued system engineering and spectrum frequency management  
 (U) \$10,256 Continued IIF satellite development  
 (U) \$25,520 Continued GPS Modernization for Space (for all IIF, 12 IIR and future Block III satellites)  
 (U) \$59,737 Continued Operational Control Segment (OCS) development  
 (U) \$2,974 Begin GPS stewardship  
 (U) \$106,849 Total

The following net transaction is not reflected in the FY00 program total: BTR= -\$2,794K. This transaction is not reflected in other sections of the R-Docs where an FY00 total is shown.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE		
BUDGET ACTIVITY				PROJECT		
<b>07 - Operational System Development</b>				<b>June 2001</b>		
PE NUMBER AND TITLE				<b>3030</b>		
<b>0305165F NAVSTAR GPS (Space)</b>						
<b>(U) <u>A. Mission Description Continued</u></b>						
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>						
(U)	\$21,192	Continue system engineering and spectrum/frequency management				
(U)	\$6,529	Continue IIF satellite development				
(U)	\$121,050	Continue GPS Modernization for Space (for all IIF, 12 IIR, and future Block III satellites)				
(U)	\$85,404	Continue Operational Control Segment (OCS) development				
(U)	\$19,717	Continued OCS modernization				
(U)	\$4,700	Continue GPS stewardship				
(U)	\$258,592	Total				
The following net transactions are not reflected in the FY01 program total: SBIR = -\$11,627K, BTR = -\$3,101K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.						
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>						
(U)	\$8,000	Continue system engineering and spectrum/frequency management				
(U)	\$5,036	Continue IIF satellite development				
(U)	\$66,278	Continue GPS Modernization for Space (for IIF and IIR satellites; GPS III funds transferred to PE 0603421F)				
(U)	\$62,545	Continue OCS development				
(U)	\$44,600	Continue OCS modernization				
(U)	\$186,459	Total				
GPS Stewardship transferred to PE 0603421F						
<b>(U) <u>B. Budget Activity Justification</u></b>						
This program is in Budget Activity 7 - Operational Systems Development because it is a post-Milestone III program.						
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>						
			<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)		114,851	260,980	210,579	TBD
(U)	Appropriated Value		108,890	260,980		
(U)	Adjustments to Appropriated Value					
	a. Congressional/General Reductions		-849	-1,821		
	b. Small Business Innovative Research		-3,957			
Project 3030						
Page 2 of 7 Pages						
Exhibit R-2 (PE 0305165F)						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0305165F NAVSTAR GPS (Space)			3030				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>			
	c. Omnibus or Other Above Threshold Reprogram			7,400							
	d. Below Threshold Reprogram			-4,209							
	e. Rescissions			-426							
(U)	Adjustments to Budget Years Since FY 2001 PBR			0	-567	-24,120					
(U)	Current Budget Submit/FY 2002 PBR			106,849	258,592	186,459		TBD			
(U)	<u>Significant Program Changes:</u>										
	GPS III and stewardship funds were transferred to PE 0603421F, starting in FY02.										
	Due in part to Modernization New Start approval late in FY00 (Aug 00), execution rates were lower than expected. This resulted in funding being rephased from FY02 to FY03.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	RDT&E (PE 0603421F, BA-4/R-38, BPAC 644993 - GPS Block III)	0	0	78,358	100,575	185,119	188,838	227,900	224,516	Continuing	TBD
(U)	Other APPN										
(U)	Operations and Maintenance (PE 0305165F, BA 1 - Operating Forces, SAG 13D)	34,669	54,116	51,992	56,488	59,089	57,634	59,863	62,841	Continuing	TBD
(U)	Missile Procurement (PE 0305165F, BA 5 - Space and Other Support, P-20, 21)	107,498	173,434	201,479	236,103	223,445	261,769	161,877	425,158	Continuing	TBD
(U)	Other Procurement (PE 0305165F, BP 83 - Electronics and	13,511	7,812	7,989	7,125	8,811	9,918	14,231	26,326	Continuing	TBD
Project 3030		Page 3 of 7 Pages							Exhibit R-2 (PE 0305165F)		

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305165F NAVSTAR GPS (Space)</b>	<b>PROJECT</b> <b>3030</b>
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**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
Telecommunications Equipment, WSC 6790, P-68, and WSC 6730.) PE 0305164F, GPS User Equipment PE 0301357F and 0305913F, Nuclear Detonation Detection System (NDS) PE 0305119F Space Boosters (Delta II) PE 030953F Evolved Expendable Launch Vehicle (EELV)										

**(U) E. Acquisition Strategy**

GPS OCS upgrade was competitively awarded to a single contractor (Lockheed Martin) in July 1995. Block IIF satellite and IIF ground systems development contract was competitively awarded to a single contractor (Boeing) in April 1996. The Single Prime Initiative (SPI) consolidated these efforts and was added to the Boeing IIF contract (with Lockheed Martin as a subcontractor) on 1 Oct 99. GPS Modernization efforts for the Block IIR was awarded sole source to Lockheed Martin under a new contract in August 2000. Efforts for Block IIF are being added to the existing contract with Boeing as ECPs.

**(U) F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Continue OCS Architectural Implementation:												
(U) Phase 3/4 delivery							*					
(U) Phase 3/4 Installed in GPS Support Facility (GSF)										X		
(U) Version 5 Development Begins						*						
(U) IIA IMOSC system available		*										
(U) IIA IMOSC Initial Operational Capability					*							
(U) Enhanced IIA IMOSC Development begins						*						
(U) Enhanced IIA IMOSC Development complete									X			
(U) IIF IMOSC Development Begins										X		
(U) Launch/Early Orbit (L/EO) Consolidation Development begins							*					
(U) GPS Modernization Studies complete						*						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305165F NAVSTAR GPS (Space)					3030				
(U) <b><u>F. Schedule Profile Continued</u></b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U)	GPS Overarching Integrated Product Team (OIPT)						*							
(U)	GPS Defense Acquisition Executive Program Review							X						
(U)	GPS Modernization Space/Control development begins			*										
(U)	GPS Block IIR development complete								X					
(U)	GPS Block IIF CDR										X			
(U)	GPS Modernization Long Lead Production Block IIF begins							X						
(U)	GPS Modernization Long Lead Production Block IIR Begins						*							
(U)	GPS III Architecture Study Contracts Awarded						*							
(U)	GPS Block IIF PDR							X						
(U)	GPS Block IIR CDR						*							
(U)	GPS Block IIR Production Start							X						
	* = Completed, X = Scheduled													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)			PROJECT 3030			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	System Engineering and spectrum frequency management					8,362		21,192		8,000
(U)	GPS Block IIF satellite development					10,256		6,529		5,036
(U)	GPS Modernization for Space					25,520		121,050		66,278
(U)	OCS development					59,737		105,121		107,145
(U)	GPS Stewardship					2,974		4,700		0
(U)	Total					106,849		258,592		186,459
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Applied Research Labs	MIPR	Mar 97	Continuing	Continuing	2,366	683	300	300	Continuing	TBD
Boeing (C0025)	FPAF/CPAF/CPFF	Apr 96	Continuing	Continuing	198,463	75,900	153,748	176,659	Continuing	TBD
Lockheed-Martin Missiles and Space (C0006)		Aug 00	Continuing	Continuing	0	11,000	42,002	0	Continuing	TBD
GPS III Modernization Lockheed-Martin (C0008)	FFP	Dec 00	16,000	16,000	0	0	16,000	0	0	16,000
GPS III Modernization Boeing (C0010)	FFP	Dec 00	16,000	16,000	0	0	16,000	0	0	16,000
NRL	MIPR	Various	Continuing	Continuing	3,390	5,390	4,650	1,500	Continuing	TBD
GPS Modernization Stewardship	Various	Various	Continuing	Continuing	0	2,974	4,700	0	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										PROJECT
<b>07 - Operational System Development</b>										<b>3030</b>
PE NUMBER AND TITLE										
<b>0305165F NAVSTAR GPS (Space)</b>										
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
System Engineering/Support	Various	Various	N/A	N/A	27,513	1,087	901	935	Continuing	TBD
GPS Modernization Tech Spt	Various	Continuing	Continuing		8,658	7,735	20,291	7,065	Continuing	TBD
Miscellaneous	Various	Various	N/A	N/A	1,151	2,080	0	0	0	3,231
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					204,219	95,947	237,400	178,459	TBD	TBD
Subtotal Support and Management					37,322	10,902	21,192	8,000	TBD	TBD
Subtotal Test and Evaluation										
Total Project					241,541	106,849	258,592	186,459	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305182F Spacelift Range System</b>					PROJECT <b>4137</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4137	Range Standardization and Automation (RSA)	48,303	84,373	65,097	74,898	69,924	66,628	72,430	72,520	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>FY03-FY07: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b>A. Mission Description</b>                      The Eastern Range (ER) at Patrick AFB and Cape Canaveral AFS, FL, and the Western Range (WR) at Vandenberg AFB, CA, make up the Spacelift Range System. They provide tracking, telemetry, flight analysis, and other capabilities necessary to safely conduct Department of Defense, civil, and commercial spacelift operations; ballistic missile test launches; and aeronautical and guided weapons tests. Many range assets are outdated, unreliable, inefficient, and costly to operate and maintain.</p> <p>The Air Force is addressing range shortcomings through a phased modernization program. Two of the three phases will continue in FY02. First, the Range Standardization and Automation (RSA) Phase IIA contract will continue to modernize the control and display, and communication segments at both ranges. Second, the SLRS Contract (SLRSC) will continue to modernize the instrumentation segment at both ranges.</p> <p>(U) <b>FY 2000 (\$ in Thousands)</b></p> <p>(U) \$2,462 Completed RSA Phase I. Completed integration and testing of SATCOM and Cape Fiber Optic Network for operational use; supported transition of Centralized Telemetry Processing System (CTPS) to RSA II A to complete integration and testing.</p> <p>(U) \$34,171 Continued RSA Phase IIA. Continued development and testing of planning and scheduling and weather product items. Continued development and began testing of Differential Global Positioning System (DGPS) for metric tracking. Continued development and began testing of voice, video and data network modernization. Continued development and began testing of communication network including network core. Continued development and testing of interim flight safety product for the ER. Began development of final flight operations and analysis product for SLRS. Performed systems engineering, integration efforts, engineering studies, and related tasks to support the architecture.</p> <p>(U) \$1,000 Began SLRSC. Began systems requirement review and assessment of AFSPC's down-range instrumentation requirements and commercial off-the-shelf (COTS) products available to satisfy these requirements.</p> <p>(U) \$2,634 Provided program support for Systems Program Office.</p> <p>(U) \$8,036 Funded California Space Authority (CSA) study of required modernization, upgrades, and enhancements of space launch related facilities at Vandenberg AFB and Edwards AFB (congressional add).</p>											
Project 4137		Page 1 of 7 Pages					Exhibit R-2 (PE 0305182F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305182F Spacelift Range System</b>	<b>4137</b>
(U) <b><u>A. Mission Description Continued</u></b>		
(U) <b><u>FY 2000 (\$ in Thousands) Continued</u></b>		
(U) \$48,303	Total	
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$33,212	Continue RSA Phase IIA. Continue development, test, and evaluation of RSA IIA systems, including planning & scheduling, weather, comm network (voice, video, data, core, net manager), differential GPS for metric tracking, interim flight safety, final flight operations and analysis, and digital telemetry (CTPS). Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture.	
(U) \$17,632	Continue SLRSC. Fund SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Fund instrument modernization system designs (including development of SLRS specification, instrument segment specification, and interface specifications), completion of system analyses, and trade studies. Continue assessment of COTS solutions for applicability to down-range instrumentation requirements and related design efforts.	
(U) \$2,319	Provide program support for Systems Program Office.	
(U) \$31,210	Fund five follow-on California space infrastructure projects recommended by FY00-funded CSA study (congressional add).	
(U) \$84,373	Total	
	The following net transactions are not reflected in the FY01 program total: BTR = -\$2985K, SBIR = -\$495K. Additionally, -\$23,345K was reprogrammed to PE 0602203F, project 4847, to align funding with the appropriate PE to activate Rocket Test Stand 1D and upgrade Rocket Component Test Stand 2A, respectively, at Edwards Air Force Base, California. However, the funding was reprogrammed to PE These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.	
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$30,593	Continue RSA Phase IIA. Continue development, test, and evaluation of RSA IIA systems, including planning & scheduling, interim flight safety, weather, comm network (voice, video, data, core, net manager), differential GPS for metric tracking, final flight operations and analysis, digital telemetry (CTPS), command generation, simulation, and range operations. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture.	
(U) \$32,146	Continue SLRSC. Continue SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Conduct instrument modernization systems design review. Begin development, testing, and evaluation of instrumentation systems to include: fixed and mobile telemetry, fixed and mobile command destruct equipment, fixed and mobile optics instruments, radars, radio frequency monitoring equipment, weather equipment, and surveillance equipment. Develop, test, and evaluate changes to flight safety, command and control, and communications subsystems, as well as associated interfaces, required to establish the SLRS automated architecture and to enable centralized and local control of instrumentation.	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
		June 2001		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0305182F Spacelift Range System</b>	<b>4137</b>		
(U) <b><u>A. Mission Description Continued</u></b>				
(U) <u>FY 2002 (\$ in Thousands) Continued</u>				
(U) \$2,358	Provide program support for Systems Program Office.			
(U) \$65,097	Total			
(U) <b><u>B. Budget Activity Justification</u></b>				
These efforts are categorized as Budget Activity 7, Operational Systems Development, because they upgrade existing operational capabilities with new systems. Funding for modernization of both the ER and the WR is consolidated in this program element to support the integrated SLRS approach.				
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	50,989	53,654	52,306	TBD
(U) Appropriated Value	51,686	85,154		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-417	-596		
b. Small Business Innovative Research	-1,878			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-886			
e. Rescissions	-202	-185		
(U) Adjustments to Budget Years Since FY 2001 PBR			12,791	
(U) Current Budget Submit/FY 2002 PBR	48,303	84,373	65,097	TBD
(U) <b><u>Significant Program Changes:</u></b>				
FY 2000: AF reprogrammed \$886K to higher priority programs.				
FY 2001: Congress added \$31.5M for two studies, one design project, and two upgrades for California space infrastructure				
FY 2002: AF transferred \$12.7M from OPAF to RDT&E to appropriately reflect developmental effort.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System				PROJECT 4137			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) OPAF (PE 35182F, Spacelift Range System Space)(BA 03, P-60)	83,836	91,864	132,764	116,507	134,080	148,740	168,601	167,942	Continuing	TBD	
<b>(U) E. Acquisition Strategy</b>											
The AF is using a series of competitively awarded contracts to modernize the ranges. The RSA Phase I contract (FY 1993 to FY 2000) modernized downrange communications and telemetry systems at the ER. The RSA Phase IIA contract (FY 1996 to FY 2006) is providing an SLRS architecture and standardizing and automating the communications and control segments at both ranges. The SLRS Contract (FY 2001 to FY 2010) will modernize the instrumentation segment at both ranges and consolidate systems integration and sustainment efforts under one contract.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U) RSA Phase I											
(U) - Final Product Deliveries						*					
(U) - Contract Complete							*				
(U) RSA Phase IIA											
(U) - Complete Planning & Scheduling DT&E								*			
(U) - Complete Weather DT&E									X		
(U) - Complete Network Core DT&E										X	
(U) - Complete Network Manager DT&E											X
(U) - Complete Differential GPS for Metric Tracking DT&E										X	
(U) - Complete Flight Ops Version 1 System DT&E								*			
(U) - Complete Flight Ops & Analysis S/W Design Release									X		
(U) - Complete Flight Ops & Analysis Qual Testing											X
(U) SLRS Contract											
(U) - Contract Award							*				
(U) - Complete System Design Review										X	
Project 4137	Page 4 of 7 Pages						Exhibit R-2 (PE 0305182F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305182F Spacelift Range System</b>					PROJECT <b>4137</b>		
<b>(U) F. Schedule Profile Continued</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	California Space Authority Studies/Projects											
(U)	- California Space Infrastructure Program Study Contract Award											
(U)	- Flight Termination Study Contract Award											
(U)	- Extended Range Study Contract Award											
	* = completed event; X = planned event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305182F Spacelift Range System			PROJECT 4137		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	RSA Phase I Contract					2,462		0		0
(U)	RSA Phase IIA Contract					34,171		33,212		30,593
(U)	SLRS Contract					1,000		17,632		32,146
(U)	Program Support					2,634		2,319		2,358
(U)	California Space Authority Studies/Projects					8,036		31,210		
(U)	Total					48,303		84,373		65,097
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Harris Corp (RSA Phase I)	C/CPAF	Jun 93	93,781	96,781	94,319	2,462	0	0	0	96,781
Lockheed Martin (RSA Phase IIA)	C/CPAF	Nov 95	213,891	226,454	77,331	34,171	33,212	30,593	Continuing	TBD
ITT Industries (SLRSC)	C/CPAF	Nov 00	TBD	TBD	0	1,000	17,632	32,146	Continuing	TBD
<u>Support and Management Organizations</u>										
SPO Program Support (FFRDC, SETA, SPO Ops)	Various	Various	N/A	N/A	13,892	2,634	2,319	2,358	Continuing	TBD
California Space Authority Studies/Projects	Various	Various	N/A	39,246	0	8,036	31,210	0	0	39,246
<u>Test and Evaluation Organizations</u>										
N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE				
BUDGET ACTIVITY				PROJECT				
07 - Operational System Development				0305182F Spacelift Range System				
				4137				
(U) <u>Government Furnished Property:</u>								
	<u>Contract</u>	<u>Award or</u>						
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Description</u>	<u>Vehicle</u>							<u>Program</u>
<u>Product Development Property</u>								
GFP determination is ongoing as work progresses on each RSA Phase IIA delivery increment. The current 1000+ item GFP list is too large to be included with this document but is available upon request.								
<u>Support and Management Property</u>								
N/A								
<u>Test and Evaluation Property</u>								
N/A								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
Subtotal Product Development				171,650	37,633	50,844	62,739	TBD
Subtotal Support and Management				13,892	10,670	33,529	2,358	TBD
Subtotal Test and Evaluation								
Total Project				185,542	48,303	84,373	65,097	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	32,248	32,804	13,965	1,951	1,948	1,989	2,031	Continuing	TBD
4818 Imaging and Targeting Support	0	17,455	0	0	0	0	0	0	0	TBD
4820 Sensor Development	0	14,793	12,819	11,951	1,951	1,948	1,989	2,031	Continuing	TBD
4945 High Altitude Subsystems	0	0	19,985	2,014	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: High Altitude Subsystems is a new BPAC to administratively replace Imaging and Targeting Support which exists in two PEs. Imaging and Targeting Support was previously called Advanced Technology -- a portion of which was moved from PE 0305206F effective FY01. Sensor Development was previously called Manned Reconnaissance Systems U-2 and was moved from PE 0305207F effective FY01. These are merely reallignment and name changes of BPACs to more accurately describe efforts within the U-2 Program.

FY03-FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**  
 The RDT&E portion of this program element funds efforts required to enhance and sustain the U-2 Dragon reconnaissance aircraft. The RDT&E efforts in this PE focus on sensor and safety of flight projects. In addition to the RDT&E funding there are procurement funds associated with these developments.

(U) **B. Budget Activity Justification**  
 This program element is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development for the U-2 Aircraft.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		DATE			
<b>07 - Operational System Development</b>		<b>June 2001</b>			
PE NUMBER AND TITLE					
<b>0305202F Dragon U-2 (JMIP)</b>					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	0	27,546	24,118	
(U)	Appropriated Value		32,546		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions		-298		
(U)	Adjustments to Budget Years Since FY 2001 PBR			8,686	
(U)	Current Budget Submit/FY 2002 PBR		32,248	32,804	TBD
(U)	<u>Significant Program Changes:</u>				
	Funding for PE 0305202F project 674820 was reprogrammed from PE 0305207F project 674820 for FY01 and beyond (FY00 PBR - \$14.525M). See PE 0305207F for FY00 content.				
	Funding for PE 0305202F project 674818 was reprogrammed from a portion of PE 0305206F project 674818 for FY01 and beyond (FY00 PBR - \$17.616M). See PE 0305206F for FY00 content.				
	FY01 - Air Force reprogramed \$4.595M of Electronic Warfare System (EWS) RDT&E funding to procurement.				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>	PROJECT <b>4818</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4818 Imaging and Targeting Support	0	17,455	0	0	0	0	0	0	Continuing	TBD

Note: FY00 funding included in PE 0305206F (Only U-2 Defensive Systems portion relates to this program). FY02 and outyear funding in PE 0305202F/BPAC 674945 (High Altitude Sub-systems).

FY03-FY07 numbers do not reflect DoD's strategic review results.

**(U) A. Mission Description**

This project supports the U-2 Advanced Defensive System (ADS) development. ADS is designed to provide situational awareness and self-protection jamming to degrade and or detect the ability of surface-to-air weapon systems to engage the U-2 aircraft. A full ADS capability will be achieved through spiral upgrades. Spiral upgrades will address modern RF signals in the baseline system. Follow-on upgrades will include infrared warning and defense. Onboard and offboard data fusion will be provided as a growth provision to enhance situational awareness.

**(U) FY 2000 (\$ in Thousands)**

- (U)** \$0 Funding included in PE 0305206F
- (U)** \$0 Total

**(U) FY 2001 (\$ in Thousands)**

- (U)** \$9,493 Defensive System Hardware Development
- (U)** \$5,500 Software Development
- (U)** \$962 SPO Support
- (U)** \$1,500 System Test
- (U)** \$17,455 Total

**(U) FY 2002 (\$ in Thousands)**

- (U)** \$0 Funding moved to PE 0305202F/BPAC 674945
- (U)** \$0 Total

**(U) B. Project Change Summary**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>	PROJECT <b>4818</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E	8,600	0	0	0	0	0	0	0	0	8,600
(U) Other APPN		1,561	1,522	3,895	4,042	4,121	0	0	0	15,141

(U) **D. Acquisition Strategy**

Funds are for the engineering, manufacturing and development for the U-2 Advanced Defenesive System (ADS). A sole source contract was awarded to a prime contractor which will be responsible for delivering a total system. Efforts include the development of ADS, integration on the U-2 aircraft, testing and production planning.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) U-2 ADS Milestone II		*										
(U) ADS Phase II Contract Award		*										
(U) Begin ADS Flight Testing								X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)			PROJECT 4818			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	Hardware and Software Development						9,493				
(U)	Systems Engineering						3,000				
(U)	Contractor Engineering Support						2,500				
(U)	Government Engineering Support						962				
(U)	System Test						1,500				
(U)	Total						17,455				
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Adv Def Sys Cont	CPIF	Mar 00	27,800	27,800			15,116		Continuing	TBD
	<u>Support and Management Organizations</u>										
	ASC/RA										
								877		Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	Eglin AFB, Edwards AFB										
								1,462			1,462
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development							15,116		TBD	TBD
	Subtotal Support and Management							877		TBD	TBD
	Subtotal Test and Evaluation							1,462			1,462
	Total Project							17,455		TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>					PROJECT <b>4820</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4820    Sensor Development	0	14,793	12,819	11,951	1,951	1,948	1,989	2,031	0	TBD	
<p>Note: FY99-FY00 funding included in PE 0305207F and was formerly titled Manned Reconnaissance Systems U-2.</p> <p>FY03-FY07 budget numbers do not reflect DoD's strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>            This development project supports high payoff improvements to the U-2 sensors such as the Advanced Synthetic Aperture Radar System (ASARS-2A) and the SENIOR YEAR Electro-optical Reconnaissance System (SYERS) 2 Improvement Program.</p> <p>The ASARS-2A Program improves area search, precision geolocation, and image quality characteristics sufficiently to directly support the targeting of precision guided munitions (PGMs). Complex imagery will be produced by the ASARS-2A system and support significant exploitation products for the imagery analysts. ASARS-2A introduces Asynchronous Transfer Mode (ATM) datalink formats to the ISR community and supports National Imagery Transmission Format (NITF) standards. Several Line Replaceable Units (LRU) including the Process Control Unit (PCU), Receiver Exciter Controller (REC), and transmitter are approaching the end of their supportability life. Requirements include ASARS-2A reliability improvements/corrections and exploitation tools for the user (for example, system robustness, dual data link (DDL), beyond line of sight (BLOS), image quality, ground moving target indication (GMTI), Moving Target Exploitation (MTE) trackers, coherent change detection (CCD), electronic counter-countermeasures (ECCM), antenna replacements, super resolution, REC upgrades, intelligence bandwidth compression (IBC), interferometric SAR (IFSAR) and software upgrades. Developing new LRUs with next generation technology will make ASARS-2A supportable through the expected service life of the U-2 and provide capability enhancements necessary to support PGMs.</p> <p>The SYERS 2 Improvement Program includes upgrades such as multi-spectral collection and processing, polarization collection and processing, possible hyperspectral collection and processing, and the associated exploitation tools for the user. SYERS 2 also includes reliability and maintainability upgrades to incorporate next generation technology, maintaining and enhancing system supportability.</p> <p>Improvements to ASARS-2A and SYERS 2 are transferable to Global Hawk High Altitude Endurance Unmanned Aerial Vehicles (HAE UAV) should migration of this improvement become a requirement.</p>											
Project 4820			Page 6 of 13 Pages				Exhibit R-2A (PE 0305202F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305202F Dragon U-2 (JMIP)</b>	<b>4820</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2000 (\$ in Thousands)</u></b>		
(U) \$0	Funding included in PE 0305207F	
(U) \$0	Total	
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$894	Continue ASARS-2A development	
(U) \$2,585	Continue On-Board Processor (OBP) and Receiver Exciter Controller (REC) improvements	
(U) \$1,418	Continue Dual Data Link (DDL-II) interface to ASARS-2A/SYERS	
(U) \$1,200	Conduct image quality (IQI) enhancements	
(U) \$1,385	Implement software updates	
(U) \$530	Flight test	
(U) \$686	Mission support	
(U) \$1,141	Fuels conversion	
(U) \$4,954	SYERS polarimetric development (SYERS 2)	
(U) \$14,793	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$1,170	Continue Dual Data Link (DDL-II) interface	
(U) \$4,304	Continue ASARS-2A software/hardware development and image quality (IQI) tasks	
(U) \$2,650	Continue ASARS-2A system robustness improvements	
(U) \$1,000	Implement ECCM upgrades	
(U) \$500	Flight test	
(U) \$400	Image Chain Analysis	
(U) \$695	Mission Support	
(U) \$1,100	Fuels conversion	
(U) \$1,000	Advanced Defensive System (ADS)	
(U) \$12,819	Total	
<b>(U) <u>B. Project Change Summary</u></b>		
Congressional mark increased funding for SYERS polarimetric development in FY01.		
Project 4820	Page 7 of 13 Pages	Exhibit R-2A (PE 0305202F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE June 2001							
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>				PROJECT <b>4820</b>							
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>															
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>						
(U) RDT&E PE 0305207F - ASARS-2A	9,388	0	0	0	0	0	0	0	0	9,388					
(U) APAF, Manned Recce, 0305207F - ASARS-2A Production*	15,312	0	0	0	0	0	0	0	0	15,312					
(U) APAF, Manned Recce, 0305202F - ASARS-2A Production	0	12,777	18,659	4,000	4,100	4,500	4,500	5,700	0	54,236					
<b>(U) D. Acquisition Strategy</b>															
For airborne collection capability upgrades, modify existing platform and associated ground control equipment via Engineering Change Proposals (ECPs)/Task Orders to existing USAF contracts. For ASARS-2A and SYERS, develop and test new technology line replaceable units (LRUs). There is associated procurement funding tied to this development activity.															
<b>(U) E. Schedule Profile</b>															
				<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
				1	2	3	4	1	2	3	4	1	2	3	4
(U) ASARS-2A Program															
(U) - Begin DDL-II Phase 1 and DDL-II Phase 2									*						
(U) - Begin IQI Activities												X			
(U) - Continue DDL-II Interface													X		
(U) - Continue IQI Activities													X		
(U) - Continue ASARS-2A Development														X	
(U) SYERS 2 Improvement Program															
(U) - Begin SYERS Polarization Development									X						
(U) Begin Fuel Conversion Phase II														X	
Note: * denotes completed event, X denotes planned event.															
Project 4820				Page 8 of 13 Pages				Exhibit R-2A (PE 0305202F)							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)			PROJECT 4820		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	DDL-II Interface						1,418			1,170
(U)	Hardware/Software Development						6,064			7,354
(U)	ECCM Upgrades									1,000
(U)	System Testing						530			500
(U)	Mission Support						686			695
(U)	SYERS Polarimetric (SYERS 2)						4,954			
(U)	Fuels Conversion Payback						1,141			1,100
(U)	ADS Payback									1,000
(U)	Total						14,793			12,819
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon (ASARS-2Aand	CPIF/CPFF	3Q96	80,982	105,000	0	0	13,577	11,624		25,201
SYERS 2)										
<u>Support and Management Organizations</u>										
ASC/RA							686	695		1,381
<u>Test and Evaluation Organizations</u>										
Edwards AFB							30			30
Palmdale							500	500		1,000

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>		PROJECT <b>4820</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	13,577	11,624		25,201
Subtotal Support and Management			686	695		1,381
Subtotal Test and Evaluation			530	500		1,030
Total Project	0	0	14,793	12,819		27,612

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>					PROJECT <b>4945</b>
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4945    High Altitude Subsystems	0	0	19,985	2,014	0	0	0	0	0	0
<p>Note: FY00 funding included in PE 0305206F (Only U-2 Defensive Systems portion relates to this program). FY01 funding included in PE 0305202F/BPAC 674818. In FY02 this BPAC changed number and title to High Altitude Subsystems.</p> <p>FY03-07 budget numbers do not reflect DoD's strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>            This project supports development and integration of sub-systems on the U-2 [e.g. Advanced Defensive System (ADS) development, SIGINT, cockpit upgrades, navigator upgrades, datalinks], and U-2 specific interfaces required to other systems developed in other program elements (PE).</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$0                      No Activity            (U) \$0                      Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0                      Funding included in BPAC 674818/PE 0305202F            (U) \$0                      Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$10,535                Advanced Defensive System Block 30. Includes hardware/software development program and test program.            (U) \$7,000                 Dual Data Link NRE (for two EMD units), integration and test            (U) \$2,000                 SIGINT enhancements.            (U) \$450                    Mission Support            (U) \$19,985                Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p>										

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>	PROJECT <b>4945</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E	0	0	25,085	2,014	0	0	0	0	0	27,099
(U) Other APPN	0	0	19,200	24,200	22,500	16,500	11,200	10,600	0	104,200

(U) **D. Acquisition Strategy**

Funds are for the engineering, manufacturing and development for the U-2 Advanced Defensive System (ADS). A sole source contract has been awarded to a prime contractor which will be responsible for delivering a total system.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) U-2 ADS Milestone 2		*										
(U) ADS Phase 2 Contract Award		*										
(U) Begin ADS Testing										X		
(U) DDL-II Development & Int Contract										X		
(U) DDL-II DT Testing										X		
(U) DDL-II SIL Testing												X
(U) DDL-II Flight Testing												X
(U) DDL-II LRIP Award												
(U) SIGINT Development										X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)			PROJECT 4945			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Hardware and Software Development									19,535	
(U)	Government Engineering Support									450	
(U)	Total									19,985	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	ADS Ctr	CPIF	Mar 00	N/A	N/A				17,535	Continuing	TBD
	<u>Support and Management Organizations</u>										
	ASC/RA								450	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	Eglin AFB, Edwards AFB								2,000	Continuing	TBD
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development								17,535	TBD	TBD
	Subtotal Support and Management								450	TBD	TBD
	Subtotal Test and Evaluation								2,000	TBD	TBD
	Total Project								19,985	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	76,238	126,047	190,237	118,835	182,807	182,883	136,821	84,235	Continuing	TBD
4755 Predator	3,891	3,662	3,782	3,860	3,943	4,024	4,109	4,195	Continuing	TBD
4799 Global Hawk	72,347	120,106	184,155	112,975	176,864	176,859	130,712	78,040	Continuing	TBD
4883 JTC/SIL MUSE	0	2,279	2,300	2,000	2,000	2,000	2,000	2,000	0	53,783
Quantity of RDT&E Articles	0	2	0	0	0	0	0	0	0	47,548

Note: FY03-07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 Endurance Unmanned Aerial Vehicles (UAVs) are a family of unmanned vehicles developed to provide all-weather, day/night, reconnaissance and surveillance in direct support of theater collection requirements; and integrate with existing airborne reconnaissance architectures for mission planning, data processing, exploitation and dissemination. The RQ-1 Predator UAV was initiated as an Advanced Concept Technology Demonstration (ACTD) which completed in FY96. The RQ-4A Global Hawk is a high-altitude endurance (HAE) UAV that was also initiated as an ACTD, completing in FY00. The Global Hawk deployed to Australia April - June FY01 for a Combined Exercise with the Australians and USPACOM. The Global Hawk program transitioned to a 'normal' acquisition program with an Acquisition Decision Memorandum (ADM) on 6 Mar 01. In the near term, the Air Force has initiated engineering, manufacturing and development with Global Hawk to operationalize the system. Future spiral development will evolve the Global Hawk to carry U-2 parity imagery and SIGINT sensor capabilities. Both Predator and Global Hawk are 'Pathfinding' systems for future UAV operational concepts. Both systems will be integrated into Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architectures, national and international airspace systems, and Service Joint-component combat environments.

(U) **B. Budget Activity Justification**  
 This program is budget activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable and provide essential operational capabilities.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
				June 2001
BUDGET ACTIVITY		PE NUMBER AND TITLE		
<b>07 - Operational System Development</b>		<b>0305205F Endurance Unmanned Aerial Vehicles</b>		
(U)	<b><u>C. Program Change Summary (\$ in Thousands)</u></b>			
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
	<u>Total Cost</u>			
(U)	Previous President's Budget (FY 2001 PBR)	77,866	109,215	70,106
(U)	Appropriated Value	79,800	127,215	TBD
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-1,506		
	b. Small Business Innovative Research	-354		
	c. Omnibus or Other Above Threshold Reprogram			
	d. Below Threshold Reprogram	-1,390		
	e. Rescissions	-312	-1,168	
(U)	Adjustments to Budget Years Since FY 2001 PBR			120,131
(U)	Current Budget Submit/FY 2002 PBR	76,238	126,047	190,237
(U)	<b><u>Significant Program Changes:</u></b>			
	In FY02, OSD \$103M (\$81.8M RDT&E and \$21.2M Procurement) was added for the acceleration of development of the engine and electrical power supplies and sensors, and the advance procurement for FY2003 air vehicles.			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>					PROJECT <b>4755</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4755	Predator	3,891	3,662	3,782	3,860	3,943	4,024	4,109	4,195	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b>                      The Predator unmanned aerial vehicle (UAV) is capable of sustained (long dwell) surveillance of critical targets, under most weather conditions, at a range of 500 nm from the launch area. Twelve Predator systems are being procured (each system consists of four air vehicles, one ground control station, and one Predator primary satellite link). The Predator is equipped with Electro-Optical/Infrared (EO/IR) and Synthetic Aperture Radar (SAR) sensors. Predator also incorporates line-of-sight(LOS) and wide-band Ku-band SATCOM datalinks capable of providing near-real-time (NRT) transmission of high resolution imagery throughout the operational envelope. The system supports the theater commander and interfaces with the Command, Control, Communication, Computer and Intelligence (C4I) architecture. The first five Predator systems were procured either from an Advanced Concept Technology Demonstration or in an interim configuration. Beginning with the sixth system, Predators are in a Baseline configuration, with upgrades including de-icing, UHF/VHF voice relay, and IFF Mode IV. IR sensor improvements, growth payloads, work station upgrades and reliability and maintainability improvements are being considered. UAV Common Automatic Recovery System (UCARS) has been added by Congress. As a result of a combat mission need statement (C-MNS) generated during ALLIED FORCE operations in Kosovo, one Predator system was outfitted with a temporary laser designator for use with precision guided munitions. Congress added production funds in FY00 for laser/EO/IR capable turret. In addition, Air Force funded the procurement of a permanent laser designator for use with precision guided munitions in FY02. As the first operational UAV in the Air Force, Predator will be the test platform to examine advanced capabilities, to include weaponization. The Air Force will continue experiments with Predator and expand into other roles and missions where UAVs can be used to leverage their 'risk mitigating' potential.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$800 Conduct OT&amp;E/developmental testing of Block I improvements                      (U) \$2,750 Block I improvements ( IR sensor improvements, growth payloads, work station upgrades, reliability and maintainability improvements)                      (U) \$341 Field support (increased level of support to prepare for formal OT&amp;E)                      (U) \$3,891 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$200 OT&amp;E                      (U) \$200 Conduct developmental testing for TCDL                      (U) \$2,716 Complete TCDL integration                      (U) \$500 Rectify identified air vehicle and ground station deficiencies to improve reliability and maintainability                      (U) \$46 Field support</p>											
Project 4755		Page 3 of 19 Pages					Exhibit R-2A (PE 0305205F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																									
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>			PROJECT <b>4755</b>																																																								
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands) Continued</u></p> <p>(U) \$3,662 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$2,432 Pre-planned Product Improvement (To include: Advance capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation)</p> <p>(U) \$350 System concept studies</p> <p>(U) \$500 Rectify identified air vehicle and ground station deficiencies to improve reliability and maintainability</p> <p>(U) \$450 Development and Operational Test</p> <p>(U) \$50 Field support</p> <p>(U) \$3,782 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>Delay in OT&amp;E required realignment of funds allocated for testing. TCDL integration accelerated to enable operations in Korea as soon as possible, as directed by Congress in FY00.</p> <p>FY00 received \$900K BTR funds to support Predator Weaponization New Start.</p> <p>\$1M in FY01 funding approved for TCDL was redirected toward Predator weaponization test and demonstration. Congressional notification has been provided by correspondence and briefings to all applicable Congressional Intelligence and Defense committees.</p> <p>FY01 received \$1.6M BTR funds to support the completion of the Phase II weaponization demo of the Predator Demo Program.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> </tr> <tr> <td>(U) Aircraft Procurement, AF (PE 35205F), Predator</td> <td align="right">57,369</td> <td align="right">31,785</td> <td align="right">19,632</td> <td align="right">23,428</td> <td align="right">24,187</td> <td align="right">28,090</td> <td align="right">32,005</td> <td align="right">32,793</td> <td align="center">Continuing</td> <td align="center">Continuing</td> </tr> </tbody> </table>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN											(U) Aircraft Procurement, AF (PE 35205F), Predator	57,369	31,785	19,632	23,428	24,187	28,090	32,005	32,793	Continuing	Continuing						
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																						
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Project 4755			Page 4 of 19 Pages				Exhibit R-2A (PE 0305205F)																																																									

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305205F Endurance Unmanned Aerial Vehicles</b>	<b>PROJECT</b> <b>4755</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Aircraft Modification, AF (PE 35205F), Predator aircraft modification funds add a permanent laser designator			10,384	10,697	10,893	11,104	11,419	11,634	Continuing	TBD

(U) **D. Acquisition Strategy**

Predator is in full scale production. Twelve systems plus attrition air vehicles are being acquired with the prime contractor, General Atomics Aeronautical Systems Inc. They also are assigned total system performance responsibility (TSPR). With the exceptions of the Tactical Endurance Synthetic Aperture Radar and the Ku-band Predator primary satellite link, which are being procured as GFE, all procurement of Predator systems will be through General Atomics. Program transitioned from interim contractor logistics support (ICS) to contractor logistics support (CLS) in FY00. Normalization of logistics support to balance CLS and organic support is underway.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Delivery of first Baseline system			*									
(U) OT&E					*							
(U) Retrofit of ACTD Systems complete												X

\* denotes completed event  
X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles			PROJECT 4755			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Hardware/Software					1,342		2,041		2,432	
(U)	Demonstrations and test					950		500		500	
(U)	System integration and engineering support					1,179		696		350	
(U)	Other technical/engineering					420		425		500	
(U)	Total					3,891		3,662		3,782	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	General Atomics	SS/CPFF	Apr 98	N/A	N/A	9,692	2,865	3,037	2,982	Continuing	TBD
	PM TESAR			N/A	N/A	2,300				0	2,300
<u>Support and Management Organizations</u>											
	ASC					0	426	425	500	Continuing	TBD
	AD/NAVAIR					320				0	320
<u>Test and Evaluation Organizations</u>											
	AFOTEC					795	600	200	300	0	1,895
	Misc					330				0	330
<b>(U) Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
<u>Support and Management Property</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>			<b>0305205F Endurance Unmanned Aerial Vehicles</b>		<b>4755</b>	
<b>(U) Government Furnished Property Continued:</b>						
<u>Test and Evaluation Property</u>						
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
				<u>Budget to</u>		<u>Total</u>
				<u>Complete</u>		<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			11,992	2,865	3,037	2,982
Subtotal Support and Management			320	426	425	500
Subtotal Test and Evaluation			1,125	600	200	300
Total Project			13,437	3,891	3,662	3,782
						TBD
						TBD
						0
						TBD
						TBD
						2,225
						TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>					PROJECT <b>4799</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4799    Global Hawk	72,347	120,106	184,155	112,975	176,864	176,859	130,712	78,040	Continuing	TBD
<p>FY03-07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>The Global Hawk Program consists of the RQ-4A Unmanned Aerial Vehicle (UAV), the AN/MSQ-131 Ground Segment (GS), and the Support System. The Global Hawk System is designed to provide continuous, all-weather, day/night, wide area surveillance and reconnaissance and includes the communications and interfaces with other theater systems required to support joint tactical warfighters at various levels of command. The Global Hawk is a fully autonomous, high-altitude, long endurance unmanned aircraft that is directly responsive to theater tasking. Global Hawk will integrate with the existing tactical airborne reconnaissance architectures for tasking, mission planning, data processing, exploitation, and dissemination. The UAV is designed as a standoff imagery platform with the capability to operate within low-to-moderate air defense threat areas. In the near term, the Air Force has initiated engineering, manufacturing and development (EMD) will initiate upgrades to Global Hawk to operationalize the system. Future spiral development will evolve the system to parity with U-2 imagery and SIGINT sensor capabilities. The Air Force will integrate Global Hawk into Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture, national and international airspace systems, and service combat environments. To support this, Air Force will conduct experiments with Global Hawk that explore its use in other mission areas and activities.</p> <p>In FY00, Global Hawk finished user demonstrations in June 00, and completed the Military Utility Assessment (MUA) with a result of 'Significant Military Utility'. Congress added \$15M to the Global Hawk funding line in FY00 and authorized procurement of two more ACTD air vehicles, to preserve the Global Hawk industrial base.</p> <p>In FY01, Global Hawk acquisition was approved by a Defense Acquisition Board (DAB), 16 Feb 01, and an Acquisition Decision Memorandum (ADM) signed 6 Mar 01. The approved program included spiral development, EMD, Low-Rate Initial Production (LRIP), and associated advanced procurement and logistics support for the LRIP systems.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$30,279            Provide Contractor and Government Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment (Phase III)</p> <p>(U) \$2,200            Integrated Logistic Support</p> <p>(U) \$58                Complete Fabrication and Integration of air vehicles #3, #4, and #5 (Phase IIB)</p> <p>(U) \$15,000           Added \$15M to FY00 program per Congressional plus-up for the following:</p>										
Project 4799			Page 8 of 19 Pages				Exhibit R-2A (PE 0305205F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305205F Endurance Unmanned Aerial Vehicles</b>	<b>4799</b>
<b>(U) A. Mission Description Continued</b>		
<b>(U) FY 2000 (\$ in Thousands) Continued</b>		
	-- Begin ACTD air vehicle #6 & #7 fabrication	
	-- Preparation for transition to EMD in FY01 to address operability, supportability and safety deficiencies identified during the ACTD (ACTD Transition Activities).	
(U) \$9,491	Additional funds spent for Fabrication and Integration of air vehicles #6 and #7 (Phase IIC) and ACTD Transition Activities	
(U) \$12,228	Added to program per consolidation of the GS and Global Hawk into same BPAC:	
	-- Development and test of demonstration GS	
	-- Contractor participation in MUA	
	-- Government support, studies and related tasks for the GS	
(U) \$3,091	Government Support, Studies and Related Tasks for the Global Hawk Program	
(U) \$72,347	Total	
<b>(U) FY 2001 (\$ in Thousands)</b>		
(U) \$1,769	Provide Contractor and Government Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment (Phase III)	
(U) \$31,945	Fabrication and Integration of 2 additional air vehicles for EMD (#6 and #7) (Phase IIC)	
(U) \$43,156	Non-recurring Engineering (NRE) to evolve the Global Hawk to a Spiral 1 configuration	
	-- Includes spiral development of sensors and other capabilities	
	-- Spiral development (Spiral 1 to Spiral 2) of air vehicles which will satisfy needs identified in the MUA and ORD	
(U) \$9,000	Operational Demonstration in Australia (total cost of \$10M remains unchanged - NATO R&D funds and the CDL program provided the other \$1M in support of this effort)	
(U) \$6,160	Provide Government Test and Evaluation Support	
(U) \$10,076	Government Support, Studies and Related Tasks for the Global Hawk Program	
(U) \$18,000	Added \$18M to FY01 program per Congressional plus-up for the following:	
	-- additional EO/IR sensors	
	-- development of a dual-band capability and precision target location	
(U) \$120,106	Total	
	The following net transactions are not reflected in the FY01 program total: BTR \$-2M. These transactions are not reflected in the other sections of the R-Docs where an FY01 total is shown.	
Project 4799	Page 9 of 19 Pages	Exhibit R-2A (PE 0305205F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305205F Endurance Unmanned Aerial Vehicles</b>	<b>4799</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$21,133 Complete Fabrication and Integration of 2 additional ACTD air vehicles for EMD (#6 and #7) (Phase IIC)</p> <p>(U) \$136,322 Continue Spiral Development -- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA and ORD and emerging requirements</p> <p>(U) \$8,200 Provide Government Test and Evaluation Support</p> <p>(U) \$10,500 Government Support, Studies and Related Tasks for the Global Hawk Program</p> <p>(U) \$5,000 Operational Demonstration in Germany</p> <p>(U) \$3,000 Demonstrations/Exercises</p> <p>(U) \$184,155 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>Intelligence Program Decision Memorandum (IPDM) I, issued on 20 Aug 99, directed the Air Force to initiate an acquisition program with a MSII decision at the end of FY00, buy two EMD air vehicles in FY01, and begin production of air vehicles in FY02.</p> <p>September 00 IPDM directed an increase of \$3M in FY02 to increase flying hours for the Global Hawk residual assets in support of the commands, to approximately 300 hours per year (Demonstrations/Exercises).</p> <p>In response to concerns about preserving the Global Hawk industrial base, Congress added \$15M to the program in FY00 and added language authorizing the purchase of two additional air vehicles for EMD. The Congressional add was used to begin fabrication of these two air vehicles and to begin preparations for EMD (ACTD transition activities).</p> <p>The Defense Acquisition Board (DAB) met on 16 Feb 01 to consider a Milestone II decision to transition Global Hawk from an Advanced Concept Technology Demonstration to Engineering and Manufacturing Development (EMD) and Low-Rate Initial Production (LRIP). On 6 Mar 01, USD/AT&amp;L approved the Global Hawk Acquisition Decision Memorandum (ADM) and designated Global Hawk as an Acquisition Category ACAT ID Major Defense Acquisition Program. The ADM approved 1) Global Hawk to enter into EMD for Block 5 and for the spiral development of Block 10 Global Hawk; 2) the Acquisition Strategy and Acquisition Program Baseline (APB); 3) Low Rate Initial Production (LRIP) and 4) associated advanced procurement and logistics support for the LRIP systems</p> <p>The FY01 Appropriations Conference added \$18M in FY01 to purchase replacement EO/IR sensors for the ACTD air vehicles, develop a dual-band capability, and</p>		
Project 4799	Page 10 of 19 Pages	Exhibit R-2A (PE 0305205F)

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0305205F Endurance Unmanned Aerial Vehicles**

PROJECT  
**4799**

(U) **B. Project Change Summary Continued**  
precision target location.

The FY01 Authorizations Conference added \$18M in FY01 to support the Global Hawk SOUTHCOM Counter Drug Demonstration. Funds were reprogrammed from Drug Interdiction and Counter-Drug Activities to the Research, Development, Test, and Evaluation, Air Force Budget Activity 7, Operational System Development, and remain in PE 0208889F, BPAC 675002 for Global Hawk execution. (Reference OSD Reprogramming Action FY01-25IR in accordance with Form 440 01/02-25). As of Jun 01, the Program Office has received \$17M of the \$18M authorized by the Conference.

In FY02, OSD \$103M (\$81.8M RDT&E and \$21.2M Procurement) was added for the acceleration of development of the engine and electrical power supplies and sensors, and the advance procurement for FY2003 air vehicles.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E	72,297	120,106	184,155	112,975	176,864	176,859	130,712	78,040		TBD
(U) Other APPN										
(U) AF MILCON					10,000	10,000				
(U) AF O&M			3,985	28,887	42,134	47,343	46,766	60,654		
(U) AF MILPERS			1,053	5,246	12,833	20,557	26,370	32,109		
(U) Aircraft Procurement, APPN 10 AF (HAE UAV)*	0	22,183	118,927	106,710	99,315	112,227	105,816	158,733		
(U) Other Procurement, APPN 16 AF (HAE UAV)				700						

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>	PROJECT <b>4799</b>
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**(U) D. Acquisition Strategy**

The Global Hawk Program began as an ACTD under DARPA in 1994. Of the fourteen original contractor teams, five were selected to submit design proposals, with Northrop Grumman Ryan Aeronautical Center (NG-RAC), formerly Teledyne Ryan Aeronautical (TRA), competitively selected for the design/development effort. Under the development phase of the agreement, the contractor built and tested five Global Hawk air vehicles, and a developmental ground segment. Streamlined procurement, using Other Transaction Authority (OTA), is being used to avoid all non value-added tasks and documentation from the program, minimize cost and provide flexibility.

An acquisition decision in Mar 01, followed delivery of the Military Utility Assessment from JFCOM. ACTD transition activities, fabrication of air vehicles #6 and #7, support of the overseas demonstration in Australia and Congressionally directed demonstrations and tasks, will complete under the current ACTD OTA agreement.

Based on the ADM, dated 6 Mar 01, the DAB Milestone II decision transitions Global Hawk from an Advanced Concept Technology Demonstration to Engineering and Manufacturing Development (EMD) and Low-Rate Initial Production (LRIP). The EMD program consists of a total Global Hawk System which includes the GS. This will evolve Global Hawk to enter EMD for Block 5 and for spiral development to Block 10 capability to meet full ORD requirements, including improvements to sensors and subsystems. Contracts starting in FY01 will be under FAR-based rules. EMD will be a Cost-Plus Award Fee (CPAF) type contract, while LRIP will be a Fixed-Price Incentive (FPI).

In FY02, additional funding was budgeted to accelerate spiral development of the GH program.

In FY02, the program will also commence Low Rate Initial Production (LRIP) of Block 5 air vehicles. During this time period, the program may include on its Block 5 production vehicles any Spiral Development capabilities available for acceleration during EMD.

**(U) E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Military Utility Assessment Report				*								
(U) ACTD ends						*						
(U) Milestone II Decision						*						
(U) Start of EMD Program						*						
(U) Australian Demonstration							*					
(U) Delivery of air vehicle #6										X		
(U) Delivery of air vehicle #7												X

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>	PROJECT <b>4799</b>
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(U) **E. Schedule Profile Continued**

<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
1	2	3	4	1	2	3	4	1	2	3	4

\* denotes completed event  
 X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE June 2001		
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
<b>07 - Operational System Development</b>		<b>0305205F Endurance Unmanned Aerial Vehicles</b>		<b>4799</b>
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>				
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U)	Fabrication and Integration of air vehicles #3, #4, and #5 (Phase IIB)	58		
(U)	Provide Contractor Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment (Phase III)	17,758	1,769	
(U)	Provide Government Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment	12,521		
(U)	Fabrication and Integration of air vehicles #6 and #7 (Phase IIC)	12,650	31,945	21,133
(U)	Preparation for transition to EMD in FY01 to address operability, supportability and safety deficiencies identified during the ACTD (Spiral Development)	10,341		
(U)	Joint Technology Center system Integration Laboratory (JTC/SIL) MUSE (Multiple UAV Simulation Environment)	1,500		
(U)	Integrated Logistic Support	2,200		
(U)	Development of test of demonstration GS (part of the GS consolidation into the Global Hawk BPAC 674799)	1,675		
(U)	Contractor participation in MUA (part of the GS consolidation into the Global Hawk BPAC 674799)	5,962		
(U)	Government support, studies and related tasks for the GS (part of the GS consolidation into the Global Hawk BPAC 674799)	4,591		
(U)	Government Support, Studies and Related Tasks for the Global Hawk program	3,091	10,076	10,500
(U)	Operational Demonstration in Germany			5,000
(U)	Demonstrations/Exercises			3,000
(U)	Spiral Development - Non-recurring Engineering (NRE) to evolve the Global Hawk to Block 5 and Block 10 configurations:		43,156	136,322
(U)	-- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA, ORD, and emerging requirements			
(U)	Operational Demonstration in Australia		9,000	
(U)	Provide Government Test and Evaluation Support		6,160	8,200
(U)	EO/IR sensors, and development of dual-band capability and precision target location		18,000	
(U)	Total	72,347	120,106	184,155
Project 4799		Page 14 of 19 Pages	Exhibit R-3 (PE 0305205F)	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4799	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Ryan Aeronautical Center	SS/CPAF/IF		N/A	N/A	112,870	49,124	98,993	157,955	Continuing	TBD
Raytheon	SS/CPAF/IF					180				180
<u>Support and Management Organizations</u>										
Various			N/A	N/A	0	7,423	8,317	8,100	Continuing	TBD
Support ASC						1,599	1,934	1,900	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFFTC			N/A	N/A	0	6,720	6,846	7,400	Continuing	TBD
AFOTEC			N/A	N/A	0	1,500	780	800	Continuing	TBD
JTC/SIL (MUSE)						1,500				1,500
Various			N/A	N/A	0	4,301	3,236	8,000	Continuing	TBD
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					112,870	49,304	98,993	157,955	TBD	TBD
Subtotal Support and Management					0	9,022	10,251	10,000	TBD	TBD
Subtotal Test and Evaluation					0	14,021	10,862	16,200	TBD	TBD
Total Project					112,870	72,347	120,106	184,155	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE <b>June 2001</b>																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>					PROJECT <b>4883</b>																						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																						
4883 JTC/SIL MUSE	0	2,279	2,300	2,000	2,000	2,000	2,000	2,000	0	TBD																						
FY03-07 budget numbers do not reflect the DoD strategic review results.																																
<b>(U) A. Mission Description</b>																																
The Joint Technology Center/System Integration Laboratory Multiple UAV Simulation Environment (JTC/SIL MUSE) provides and develops simulations of UAVs, their tactical and strategic reconnaissance uses and how their imagery products are used in the DoD reconnaissance system. These simulations are applied for the development of the Army's tactical UAV (TUAV), the Navy's vertical takeoff UAV (VTUAV), Air Force's Predator medium altitude endurance UAV (EUAV) and the Air Force's Global Hawk high altitude EUAV.																																
<b>(U) FY 2000 (\$ in Thousands)</b>																																
<table style="width:100%; border: none;"> <tr> <td style="width:30%;">\$0</td> <td colspan="10"></td> </tr> <tr> <td>\$0</td> <td align="right" colspan="10">Total</td> </tr> </table>											\$0											\$0	Total									
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<b>(U) FY 2001 (\$ in Thousands)</b>																																
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\$2,279	JTC/SIL MUSE																															
\$2,279	Total																															
<b>(U) FY 2002 (\$ in Thousands)</b>																																
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\$2,300	JTC/SIL MUSE																															
\$2,300	Total																															
<b>(U) B. Project Change Summary</b>																																
A separate project code within PE 35205F provides visibility of the funds supporting the JTC/SIL MUSE. The level of future Air Force participation in this project beyond FY01 is the subject of on-going discussions between the Air Force and OSD.																																
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>																																
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																						
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																							
(U) AF RDT&E	0	2,279	2,300	2,000	2,000	2,000	2,000	2,000	2,000	16,579																						
(U) Other APPN	0	0	0	0	0	0	0	0	0	0																						
Project 4883																																

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001																																								
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																																								
<b>07 - Operational System Development</b>					<b>0305205F Endurance Unmanned Aerial Vehicles</b>					<b>4883</b>																																								
<p>(U) <b><u>D. Acquisition Strategy</u></b> N/A</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border: none;"> <thead> <tr> <th style="width: 10%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2000</u></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) Activity TBD</td> <td></td> </tr> </tbody> </table>													<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Activity TBD												
	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>																																									
	1	2	3	4	1	2	3	4	1	2	3	4																																						
(U) Activity TBD																																																		
Project 4883				Page 17 of 19 Pages				Exhibit R-2A (PE 0305205F)																																										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										June 2001
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0305205F Endurance Unmanned Aerial Vehicles					4883
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		
(U) No activity planned							2,279		2,300	
(U) Total							2,279		2,300	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
JTC/SIL MUSE						2,279	2,300		Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
(U) <b>Government Furnished Property:</b>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0305205F Endurance Unmanned Aerial Vehicles</b>			<b>4883</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development					2,279	2,300
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						
Total Project					2,279	2,300
						TBD
						TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY		PE NUMBER AND TITLE									
<b>07 - Operational System Development</b>		<b>0305206F Airborne Reconnaissance Systems</b>									
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
Total Program Element (PE) Cost	138,385	144,190	77,766	129,888	146,911	116,040	116,752	119,468	Continuing	TBD	
4817 Joint SIGINT Avionics Family (JSAF)	94,662	94,248	36,381	62,573	70,247	46,985	48,060	49,075	Continuing	TBD	
4818 Imaging and Targeting Support	14,015	2,106	1,091	18,313	29,522	25,789	26,330	26,886	Continuing	TBD	
4819 Common Data Link (CDL)	29,708	43,014	35,406	44,108	42,063	37,998	36,984	38,015	Continuing	TBD	
4882 Compass Bright	0	4,822	4,888	4,894	5,079	5,268	5,378	5,492	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	Continuing	TBD	

FY03-FY07 budget numbers do not reflect DoD's strategic review results.

**(U) A. Mission Description**

This program funds and coordinates the development of advanced defense airborne reconnaissance technologies to ensure systems satisfy strategies and architectures to assure U.S. ability to support warfighter intelligence needs in the face of rapidly developing threat technology, proliferation of advanced weaponry, and uncertain political alignments. This program funds the development of the technologies that respond to evolving threats by emphasizing multi-service utility, interoperability among existing and planned complementary systems (i.e., sensors, ground systems, data links, and manned and unmanned platforms), and timely dissemination of intelligence information to operational forces.

**(U) B. Budget Activity Justification**

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE	
			June 2001	
BUDGET ACTIVITY		PE NUMBER AND TITLE		
<b>07 - Operational System Development</b>		<b>0305206F Airborne Reconnaissance Systems</b>		
(U)	<b><u>C. Program Change Summary (\$ in Thousands)</u></b>			
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
	<u>Total Cost</u>			
(U)	Previous President's Budget (FY 2001 PBR)	136,221	136,913	105,398
(U)	Appropriated Value	139,608	157,913	
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-2,638		
	b. Small Business Innovative Research	-619		
	c. Omnibus or Other Above Threshold Reprogram	-210	-12,300	
	d. Below Threshold Reprogram	2,790		
	e. Rescissions	-546	-1,423	
(U)	Adjustments to Budget Years Since FY 2001 PBR			-27,632
(U)	Current Budget Submit/FY 2002 PBR	138,385	144,190	77,766
(U)	<b><u>Significant Program Changes:</u></b>			
	Funding for U-2 Advanced Defensive Systems in FY01-03 was transferred to PE 0305202F, Dragon U-2. Funding for Compass Bright in FY01-05 was transferred from PE 0305206G into PE 0305206F.			
	FY01 funding of \$12.3M was transferred from RDT&E appropriation to the O&M appropriation to provide funding for the leasing of Commercial Satellites Transponders.			
	FY02 \$9.0M added for Multi Platform Common Data Link (MP-CDL) funding.			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>																			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>					PROJECT <b>4817</b>																		
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																		
4817     Joint SIGINT Avionics Family (JSAF)	94,662	94,248	36,381	62,573	70,247	46,985	48,060	49,075	Continuing	TBD																		
FY03-FY07 budget numbers do not reflect DoD's strategic review results.																												
<p>(U) <b><u>A. Mission Description</u></b>            Provides funds for the development of sensor systems to modernize the SIGINT capability of the DoD airborne reconnaissance fleet, through a series of incremental upgrades, to meet the 2010 threat. Upgrades will embrace an open systems approach, with recognized standards, commonality, modularity, scalability, and reconfigurability. The open architecture will provide competitive opportunities to contractors who find innovative ways to use new technologies. It will also permit maximum use of commercial-off-the-shelf (COTS) and government-off-the-shelf (GOTS) capabilities developed for other applications. The goal is full compliance with all CRD requirements and all Joint Airborne SIGINT Architecture (JASA) by 2010. The development and modification of the lead integration aircraft (EP-3E) for the initial JSAF modules will provide a mechanism to begin development and operational assessment of the JSAF components. Producible JSAF components will be provided for the airborne fleet (manned and unmanned) for integration on the Air Force's RC-135V/W (Rivet Joint), the Army's Aerial Common Sensor (ACS) platform, the Air Force's Global Hawk, the Navy's EP-3E, and the future multi-mission aircraft. JSAF concept &amp; technology development and system development &amp; demonstration efforts support continuous improvements and implementation of C2ISR capabilities to enable a joint global strike task force.</p>																												
<p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <table style="width:100%; border: none;"> <tr> <td style="width: 15%;">(U) \$41,275</td> <td>Continue Low Band SubSystem (LBSS) development and integration</td> </tr> <tr> <td>(U) \$22,122</td> <td>Continue High Band Subsystem (HBSS) development</td> </tr> <tr> <td>(U) \$7,362</td> <td>Continue Rivet Joint platform development for JSAF integration and testing</td> </tr> <tr> <td>(U) \$13,000</td> <td>Continue EP-3 platform development for JSAF integration and testing</td> </tr> <tr> <td>(U) \$4,341</td> <td>Continue U-2 platform development for JSAF integration and testing</td> </tr> <tr> <td>(U) \$1,000</td> <td>Begin ACS platform development for JSAF integration and testing</td> </tr> <tr> <td>(U) \$2,191</td> <td>Begin Active Interference Cancellation (IC) and Modeling &amp; Simulation (M&amp;S) Efforts</td> </tr> <tr> <td>(U) \$3,371</td> <td>Continue SPO Operations, Systems Engineering, Program Management Activities</td> </tr> <tr> <td>(U) \$94,662</td> <td>Total</td> </tr> </table>											(U) \$41,275	Continue Low Band SubSystem (LBSS) development and integration	(U) \$22,122	Continue High Band Subsystem (HBSS) development	(U) \$7,362	Continue Rivet Joint platform development for JSAF integration and testing	(U) \$13,000	Continue EP-3 platform development for JSAF integration and testing	(U) \$4,341	Continue U-2 platform development for JSAF integration and testing	(U) \$1,000	Begin ACS platform development for JSAF integration and testing	(U) \$2,191	Begin Active Interference Cancellation (IC) and Modeling & Simulation (M&S) Efforts	(U) \$3,371	Continue SPO Operations, Systems Engineering, Program Management Activities	(U) \$94,662	Total
(U) \$41,275	Continue Low Band SubSystem (LBSS) development and integration																											
(U) \$22,122	Continue High Band Subsystem (HBSS) development																											
(U) \$7,362	Continue Rivet Joint platform development for JSAF integration and testing																											
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(U) \$94,662	Total																											

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>		PROJECT <b>4817</b>																																		
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$54,500 Terminate Low Band SubSystem (LBSS) development and integration</p> <p>(U) \$18,710 Continue High Band SubSystem (HBSS) development and integration</p> <p>(U) \$7,200 Continue EP-3 platform development for JSAF integration and testing</p> <p>(U) \$3,500 Continue ACS platform development for JSAF integration and testing</p> <p>(U) \$975 Continue Rivet Joint platform development</p> <p>(U) \$4,033 Complete Active Interference Cancellation (IC) and continue Modeling &amp; Simulation (M&amp;S) Efforts</p> <p>(U) \$5,330 Continue SPO Operations, Systems Engineering, Program Management Activities</p> <p>(U) \$94,248 Total</p> <p>The following net transactions are not reflected in the FY01 program total: BTR -\$3.141M. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$28,700 Continue High Band SubSystem (HBSS) development and integration</p> <p>(U) \$2,021 Continue Modeling and Simulation (M&amp;S) Efforts</p> <p>(U) \$5,560 Continue SPO Operations, Systems Engineering, Program Management Activities</p> <p>(U) \$100 Continue platform (RC-135, EP-3, ACS, Global Hawk) development for JSAF integration and testing</p> <p>(U) \$36,381 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>Low Band SubSystem development and integration will be terminated in FY01 due to poor cost and schedule performance. Integration and flight test of JSAF on the U-2 will be terminated in FY01 due to an AF corporate decision not to procure JSAF for the U-2. The start of the Evolutionary Upgrade efforts was delayed from FY00 to FY03 per AF corporate decision.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) None</td> <td></td> </tr> </tbody> </table>									<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) None																
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																														
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																															
(U) None																																								
Project 4817		Page 4 of 23 Pages			Exhibit R-2A (PE 0305206F)																																			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>	PROJECT <b>4817</b>
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(U) **D. Acquisition Strategy**

The JSAF acquisition approach emphasized full and open competition for the initial LBSS and HBSS development programs, as well as the Evolutionary Upgrades. Due to funding constraints in FY02, the current LBSS development program will be terminated. Planning will begin in FY02 to compete a follow-on effort titled JSAF Airborne Narrowband Subsystem (JANS), with a contract award in FY04. A competitive source selection will be conducted for this contract. The open architecture will provide competitive opportunities during each development effort to contractors who find innovative ways to use new technologies, while permitting maximum use of commercial-off-the-shelf (COTS) and government-off-the-shelf (GOTS) capabilities developed for other applications. With delivery of the core capability, the requirements community will agree on the next increment to be acquired - which will be competitively procured. The open systems architecture provides a vehicle for exploitation and integration of COTS and GOTS, allowing the government to refresh, upgrade, enhance and evolve its system capabilities.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) LBSS contract termination									X			
(U) JANS contract planning										X		
(U) HBSS Factory Acceptance Test (FAT)						*						
(U) HBSS PCU ( Production Unit) PDR												X
* - Denotes completed event												
X- Denotes planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems			PROJECT 4817		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Hardware Development					23,612		27,807		11,060
(U)	Software Development					20,988		24,718		9,831
(U)	Platform Integration					25,703		11,675		100
(U)	Integration and Test Support					8,068		9,269		3,686
(U)	Systems Engineering					13,118		15,449		6,144
(U)	Program Management					3,173		5,330		5,560
(U)	Total					94,662		94,248		36,381
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
BAE (LBSS)	CPAF	Feb 97	200,714	200,714	104,939	41,275	54,500			200,714
TRW (HBSS)	CPAF	Dec 97	110,100	110,100	30,965	22,122	18,710	28,700	9,603	110,100
Active IC; M&S	TBD	FY03	TBD	TBD	0	2,191	4,033	2,021	Continuing	TBD
Platform Integration (Includes AF, Army, Navy)	Various	Various			64,421	25,703	11,675	0	Continuing	TBD
<u>Support and Management Organizations</u>										
Various	Various	Various			19,181	3,173	5,330	5,660	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFFTC Edwards AFB	Project Order	Various				198	0	0	Continuing	TBD
Note: Funds prior to FY99 are in PE 0305206D, Airborne Reconnaissance Advanced Development.										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305206F Airborne Reconnaissance Systems</b>			<b>4817</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		200,325	91,291	88,918	30,721	TBD
Subtotal Support and Management		19,181	3,173	5,330	5,660	TBD
Subtotal Test and Evaluation			198	0	0	TBD
Total Project		219,506	94,662	94,248	36,381	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems					PROJECT 4818		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4818	Imaging and Targeting Support	14,015	2,106	1,091	18,313	29,522	25,789	26,330	26,886	Continuing	TBD

Note: This project was formerly called Advanced Technology. The name change does not constitute a new start, rather it more correctly describes ongoing activities. Funding for the U-2 Advanced Defense System transferred to PE 0305202F beginning in FY01. FY03-FY07 budget numbers do not reflect DoD's strategic review results.

(U) **A. Mission Description**

The purpose of Imaging and Targeting Support (I&TS) is to develop next generation, common imagery reconnaissance sensors (such as radar and electro-optical systems) for multiple airborne platforms and sensor products to aid in rapid targeting (such as geolocation models, sensor-based exploitation tools, sensor networking and dynamic retasking systems). Developmental efforts pursued are improved sensors (including hyperspectral imaging, MASINT sensors, polarimetric imaging, ground moving target indication, foliage penetration, and other radar and electro-optical modes), increased geolocation accuracy, advanced sensor data correlation, improved target identification probability, and other ISR technologies to reduce both target search and kill chain timelines, as well as, supporting traditional intelligence activities. I&TS will increase interoperability amongst developed systems (such as common standards and tools). I&TS focuses on the following thrust areas:

Common IMINT Sensor Development: Development of common radar and electro-optical sensors (e.g., Synthetic Aperture Radar (SAR), Electro Optical (EO), Infrared (IR), Foliage Penetration (FOPEN) and Hyperspectral Imaging (HSI)) and their operational modes (e.g., High Range Resolution and Moving Target Imaging) for multiple platforms.

Sensor Processing and Networking: Development of advanced sensor exploitation algorithms and tools (e.g. Coherent Change Detection). Development of multi-INT and multi-platform sensor networking, cross-cueing and dynamic retasking systems [e.g. Airborne Targeting and Cross Cueing System (ATACCS), Network Centric Collaborative Targeting (NCCT), Multi-Platform Target Exploitation (MPTE)]. These efforts focus on speeding up target detection, tracking and identification timelines and reducing operator and decision-maker workloads from within the sensor.

IMINT Systems Engineering: Development and implementation of imagery standards (e.g., Common GMTI, NITF for HSI). Incorporates systematic enhancement of product quality (e.g., imagery, GMTI data, and spectral accuracy) from sensor to user based on all components within the image chain to include the development and evaluation of IMINT sensor models.

This project also included funding for the U-2 Advanced Defensive System development and the High Data Rate Communications evaluation in FY00.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305206F Airborne Reconnaissance Systems</b>	<b>4818</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2000 (\$ in Thousands)</u></b>		
(U) \$100	Sensor Fusion: ATACCS risk reduction activities to integrate U-2 IMINT/MASINT collection systems	
(U) \$400	Geolocation: Continue development of coregistration of imagery in national data bases and application of advanced exploitation tools.	
(U) \$100	High Data Rate Communications: Continue evaluation of air-to-air lasercomm system	
(U) \$4,815	Continue MPTE development & evaluation	
(U) \$8,600	Advanced Defensive System: Initiate development of U-2 Defensive Systems and conduct risk reduction project	
(U) \$14,015	Total	
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$898	Sensor Processing and Networking: Continue analysis of ATACCS airborne processing, communication links and ground processing components and interfaces, conduct ATACCS demonstrations. Continue MPTE development and evaluation.	
(U) \$1,081	IMINT Systems Engineering: Continue development and fielding of geolocation sensor models. Continue development of enhanced geolocation capability to ground systems.	
(U) \$127	SPO Support	
(U) \$2,106	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$548	Sensor Processing and Networking: Continue analysis of ATACCS airborne processing, communication links and ground processing components and interfaces. Conduct additional ATACCS demonstrations in preparation for EMD. Study/demonstrate Auto Registration/MASINT Tracker technologies. Investigate dynamic sensor planning concepts.	
(U) \$389	IMINT Systems Engineering: Continue development and fielding of geolocation sensor models. Investigate collaborative targeting techniques. Begin development of Image Quality assessment program.	
(U) \$50	Common IMINT Sensor Development. Initiate studies to transition HSI technology and hardware into U-2 and UAVs.	
(U) \$104	SPO Support	
(U) \$1,091	Total	
<b>(U) <u>B. Project Change Summary</u></b>		
MTE (+\$4,815) in FY00, this effort continues activity identified in FY00 PB.		
Project 4818	Page 9 of 23 Pages	Exhibit R-2A (PE 0305206F)

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>	PROJECT <b>4818</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) PE 0305202F, Dragon U-2 (3600 RDT&E)	0	32,318	22,671	3,938	1,936	1,931	1,970	2,009	Continuing	TBD

(U) **D. Acquisition Strategy**

The program targets high payoff technologies ready to integrate into operational systems to satisfy critical unmet airborne imagery sensor and targeting system requirements. Funds are provided to develop these systems, and to reduce risk associated with their implementation in production systems. Emphasis is placed on maximizing commercial and national development efforts and investment. Multiple contracting methods are used including the use of Engineering Change Proposals (ECPs) to modify existing contracts and new contracts. Contracts have been awarded both competitively and on a sole source basis.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Sensor Processing and Networking												
(U) - ATACCS Phase I Contract Award			*									
(U) - ATACCS Risk Reduction Demos				*				X		X	X	X
(U) - ATACCS Risk Reduction Complete												X
(U) - Multi-Platform Target Exploitation (MPTE)												
(U) -- Phase I MPTE development						*						
(U) IMINT Systems Engineering												
(U) - Geolocation												
(U) - CDR		*										
(U) - Test Readiness Review					*							
(U) - Report Generation									X		X	
(U) Common IMINT Sensor Development												
(U) - SYERS P3I												
(U) -- Flight Test SYERS S/N 8			*									
(U) HDR Communications												
(U) - Laser Terminal Lab Test			*									

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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0305206F Airborne Reconnaissance Systems</b>					<b>4818</b>				
<b>(U) E. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
	1	2	3	4	1		2	3	4	1		2	3	4
(U)	U-2 Defensive Systems													
(U)	- U-2 Advanced Defensive System (ADS) milestone 2													
(U)	- ADS Phase 2 contract award													
	* - Denotes completed event													
	X - Denotes planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems			PROJECT 4818		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Hardware and Software Development					11,449		1,566		687
(U)	Systems Engineering					340		295		150
(U)	Contractor Engineering Support					1,300		150		50
(U)	Government Engineering Support					926		95		204
(U)	Total					14,015		2,106		1,091
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Raytheon	Various	ongoing	TBD	TBD	1,169	2,952			0	4,121
Lockheed Martin Skunkworks	Various	ongoing	TBD	TBD	1,217	6,166			0	7,383
Northrup Grumman	Various	ongoing	TBD	TBD	226	2,737	935	548	Continuing	TBD
Motorola	Various	ongoing	TBD	TBD	0	415			0	415
Trex Enterprises	CPFF	9 Aug 96	TBD	TBD	1,785				0	1,785
VEDA Inc	Various	ongoing	TBD	TBD	635				0	635
Alphatech	Various	ongoing	TBD	TBD	1,639	680			0	2,319
Def Syst Contr - Various	TBD	TBD	TBD	TBD	875		641		Continuing	TBD
Other	Various	Various	TBD	TBD	904	400		175	Continuing	TBD
<u>Support and Management Organizations</u>										
Other Gov't Orgs	Multiple	Multiple	TBD	TBD	1,019	665	530	368	Continuing	TBD
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0305206F Airborne Reconnaissance Systems</b>			<b>4818</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	8,450	13,350	1,576	723	TBD	TBD
Subtotal Support and Management	1,019	665	530	368	TBD	TBD
Subtotal Test and Evaluation						
Total Project	9,469	14,015	2,106	1,091	TBD	TBD

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BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>					PROJECT <b>4819</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4819	Common Data Link (CDL)	29,708	43,014	35,406	44,108	42,063	37,998	36,984	38,015	0	0
Note: FY03-FY07 budget numbers do not reflect DoD's strategic review results.											
(U) <b><u>A. Mission Description</u></b> The objective of the CDL effort within the Air Force is to define an interoperable command, control and communications capability for intelligence and reconnaissance assets to include both manned and unmanned platforms. CDL will achieve interoperable communications paths by employing an architecture based on developed hardware, software, and waveforms to promote commonality among the Services. The CDL program will maintain design configuration commonality resulting in lower life-cycle costs. The CDL design will permit existing and future reconnaissance assets to operate worldwide, providing sensor data directly to ground sites or via satellite or air-to-air relay when the asset and ground site are not within line-of-sight. This effort will integrate commercial satellite communications into the available satellite relay options to ensure sufficient wideband data relay capability. The system will have sufficient bandwidth to accommodate numerous sensors collecting SIGINT, IMINT (including video), Multi-spectral and other data. CDL concept & technology development and system development & demonstration efforts support continuous improvements and implementation of C2ISR capabilities to enable a joint global strike task force. Modular design allows for future technology insertion. The commonality of modular components reduces non-recurring engineering and life cycle costs to the DoD user. Interoperability provides for the exchange of data across service or agency boundaries. (Note: the term A-series refers to full rate/capability CDL systems and T-Series refers to TCDL systems)											
(U) <b><u>FY 2000 (\$ in Thousands)</u></b>											
(U)	\$10,980	Continue engineering/ integration of commercial satellite communication network to support airborne reconnaissance platform relay requirements and studies and analysis of alternative satellite communications to support airborne reconnaissance relay requirements.									
(U)	\$2,218	Continue development of Tactical CDL demonstration hardware and flight demonstration and continue to develop design for operational suitability on Intelligence, Surveillance & Reconnaissance (ISR) platforms including Predator.									
(U)	\$5,351	Continue integration engineering of ABIT technology into ISR platforms including RC-135, JSTARS, U-2, and Global Hawk.									
(U)	\$2,064	Continue to assess development of commercial network interface standards and incorporation of commercial technologies where practical to the CDL interface including Asynchronous Transfer Mode (ATM) on TCDL.									
(U)	\$2,081	Continue configuration control of CDL architecture, standards, specifications, and modules.									
(U)	\$710	Continue development of link modifications to incorporate and enhance wideband bulk encryption.									
(U)	\$2,645	Continue development of CDL and TCDL interface to additional platforms including Airborne Reconnaissance Low (ARL), and Light Airborne Multi-Purpose System (LAMPS).									
(U)	\$1,450	Continue SATCOM interoperability enhancements/Global Grid Development.									
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305206F Airborne Reconnaissance Systems</b>	<b>4819</b>
(U) <b><u>A. Mission Description Continued</u></b>		
(U) <b><u>FY 2000 (\$ in Thousands) Continued</u></b>		
(U) \$2,209	Continue development of Dual Data link upgrade for U-2 and Global Hawk.	
(U) \$29,708	Total	
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$2,600	Continue engineering and integration of commercial satellite communication network to support airborne reconnaissance platform relay requirements and lease a commercial transponder in support of Global Hawk and studies/analysis of alternative satellite communications to support airborne reconnaissance relay requirements.	
(U) \$5,500	Continue development of Tactical CDL demonstration hardware and flight demonstration, and continue to develop design for operational suitability on ISR platforms including potential flight demonstrations on ARL, GUARDRAIL Legacy Replacement, P-3, EP-3, F/A-18 SHARP, VTUAV and Light Airborne Multi-Purpose System (LAMPS) and ATM interface upgrade.	
(U) \$6,131	Continue ABIT technology integration engineering of ABIT in ISR platforms including RC-135 and Global Hawk.	
(U) \$6,163	Continue configuration control of CDL architecture, standards, specifications, and modules.	
(U) \$4,570	Continue SATCOM interoperability enhancements/Global Grid development.	
(U) \$3,050	Continue development of CDL interface to additional platform and surface terminal equipment (eg JSTARS, TARS, CHBDL) and advanced technology insertion activities, and CDL certification test equipment development.	
(U) \$4,000	Continue development of DDL-2.	
(U) \$4,000	Complete High Rate Laser Communications development. This funding is an FY01 Congressional Add. This effort was previously in the Imaging and Targeting Support program (PE 0305206F, BPAC 674818).	
(U) \$3,500	Begin development of NCCT wideband integrated common data link. This funding is an FY01 Congressional Add. Follow-on funding will be provided from multiple PEs/BPACs.	
(U) \$3,500	Fund development of wideband integrated common data link for application with NCCT. This funding is an FY01 Congressional Add.	
(U) \$43,014	Total	
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$2,800	Continue engineering/integration of commercial satellite communication network to support airborne reconnaissance platform relay requirements and lease a commercial transponder in support of Global Hawk and studies and analysis of alternative satellite communications to support airborne reconnaissance relay requirements.	
(U) \$5,400	Continue evolutionary development of TCDL (T-Series) for operational suitability on ISR platforms such as Guardrail Legacy Replacement, P-3, EP-3, F-16 TARS, F/A-18 SHARP, TUAV, and VTUAV.	
Project 4819	Page 15 of 23 Pages	Exhibit R-2A (PE 0305206F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>		PROJECT <b>4819</b>																																		
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b></p> <p>(U) \$5,900 Continue ABIT(A-Series) technology integration into Global Hawk and other ISR platforms and continue limited ABIT system cost reduction initiatives.</p> <p>(U) \$8,569 Continue configuration control of CDL architecture, standards, specification, and modules; provide for Joint-Service interoperability certification and spectrum management.</p> <p>(U) \$500 Continue development of KGV-135 replacement, initiate CDL migration to DoD network-based encryption architecture. This is continuing work effort that was identified in FY01 as development of link modifications to incorporate wide band encryption.</p> <p>(U) \$1,035 Continue development of interface to additional platform and surface terminal equipment (e.g. JSTARS, TARS, CHBDL), advanced technology insertion activities, and CDL certification test equipment development.</p> <p>(U) \$9,000 Start MP-CDL (A-Series) development of wideband integrated common data link to support MP-RTIP and NCCT. This is not a new start, but a continuation of an FY01 \$7M congressional plusup for wideband integrated CDL. These funds were added per the FY02 PDM.</p> <p>(U) \$1,995 Continue SATCOM interoperability enhancements/Global Grid development.</p> <p>(U) \$100 Continue development of DDL-2 (A-Series).</p> <p>(U) \$107 Continue NCCT wideband integrated common data link development</p> <p>(U) \$0 Completed High Rate Laser Communications development</p> <p>(U) \$35,406 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>  FY01 Congressional Add: \$4M High Data Rate Communications; \$7M Wideband Integrated CDL development  FY02 funding of \$9M added for MP- RTIP CDL development</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2000</u></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td><u>Actual</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) None</td> <td></td> </tr> </tbody> </table>									<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) None																
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																														
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																															
(U) None																																								
Project 4819		Page 16 of 23 Pages			Exhibit R-2A (PE 0305206F)																																			

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>	PROJECT <b>4819</b>
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**(U) D. Acquisition Strategy**

The CDL program involves a multitude of technology projects which will provide for a common, interoperable wideband data link standard as mandated by ASD/C3I policy. Program funds are leveraged with the Service program funds to satisfy program objectives. Funds are provided to various government laboratories and program offices to fund on-going technology efforts. The individual Services use Engineering Change Proposals (ECPs) and modify existing contracts that have been awarded both competitively and on a sole source basis to implement various technology efforts.

**(U) E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Continue Commercial Satellite Transponder Lease			*				*		X			
(U) Phase 2a Tactical CDL Dev Program Complete on Predator												X
(U) Proof of Installation Concept of TCDL on ARL			*									
(U) Complete Phase 2 TCDL			*									
(U) Initiate TCDL environmental hardening		*										
(U) Complete TCDL environmental hardening									X			
(U) Initiate TCDL CDL-compliant MDR/HDR upgrade						*						
(U) Complete ABIT RC-135 Design	*											
(U) Initial RC-135 ABIT unit delivery		*										
(U) Initiate/Complete ABIT RC-135 Flight Tests			*		*							
(U) Complete ABIT Global Hawk Collector Development												X
(U) Initiate ABIT Cost Reduction P3I				*								
(U) U-2 DDL (U-2 Flight Test)												X
(U) Initiate KGV-135 replacement development									X			
(U) Complete KGV-135 replacement design validation												X
(U) Release MP-CDL RFP									X			
(U) MP-CDL Contract Awards										X		

\*-Denotes completed event  
X-Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems			PROJECT 4819		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Hardware and Software Development					13,409		30,214		22,037
(U)	Systems Engineering					1,978		2,100		2,000
(U)	Satellite Communications					10,980		2,600		2,800
(U)	Configuration Management					290		2,080		3,405
(U)	Contractor Engineering Support					681		1,098		1,031
(U)	Government Management and Support					2,370		4,922		4,133
(U)	Total					29,708		43,014		35,406
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
L3Com	Multiple	Multiple			0	10,204	17,031	15,807	Continuing	TBD
California Microwave	CPFF	Mar 99	TBD	TBD	0	1,572			Continuing	TBD
Harris Corp	Other	23 Jul 97	TBD	TBD	0	1,043	5,330	5,300	Continuing	TBD
	Transaction									
Trex Corp	CPIF		TBD	TBD	0	0	2,900	0		2,900
Classified Contractor					0	1,450	3,570	1,980		7,000
Motorola	Multiple	Multiple	TBD	TBD	0	989	0	500	Continuing	TBD
Other	Multiple	Multiple			0	1,266	6,097	3,962	Continuing	TBD
<u>Support and Management Organizations</u>										
SATCOM	FFP	17 Jul 95			8,045	10,980	2,400	2,600	Continuing	TBD
Various	Multiple	Multiple			603	2,064	5,256	4,827	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
JITC	MIPR	FY99			530	140	430	430	Continuing	TBD

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0305206F Airborne Reconnaissance Systems</b>			<b>4819</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0	16,524	34,928	27,549	TBD	TBD
Subtotal Support and Management	8,648	13,044	7,656	7,427	TBD	TBD
Subtotal Test and Evaluation	530	140	430	430	TBD	TBD
Total Project	9,178	29,708	43,014	35,406	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>					PROJECT <b>4882</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4882    Compass Bright	0	4,822	4,888	4,894	5,079	5,268	5,378	5,492	Continuing	TBD	
<p>FY03-FY07 budget numbers do not reflect DoD's strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The COMPASS BRIGHT program develops advanced Air Force specific SIGINT capabilities to ensure that time-sensitive SIGINT collections against emerging and future target signals occur and reach the battle execution management centers fast enough to be of immediate value in the conduct of military operations.</p> <p>Note: Funding in FY99 and FY00 are in National Security Agency PE 0305206G. FY01-07 funding was transferred to Air Force (PE 0305206F) from PE 0305206G.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$0                      No Activity                      (U) \$0                      Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$4,492                Continue COMPASS BRIGHT (NexGen Receiver, Active Interference Cancellation, Advanced SIGINT modernization and other projects) development projects                      (U) \$330                    SPO operations, Program Management Activities                      (U) \$4,822                Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$4,518                Continue COMPASS BRIGHT (Advanced Signal ID, Advanced Satellite Comm, PCS, Advanced SIGINT Modernization and other projects) development projects                      (U) \$370                    SPO operations, program management activities                      (U) \$4,888                Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p>											
Project 4882			Page 20 of 23 Pages				Exhibit R-2A (PE 0305206F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE June 2001						
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>			PROJECT <b>4882</b>						
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>				
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
<b>(U) D. Acquisition Strategy</b>													
The COMPASS BRIGHT program objective is to develop technologies for application in SIGINT systems/subsystems. Acquisition and production of these developed technologies will occur within the appropriate platform programs. On-going COMPASS BRIGHT technology development and demonstration contracts will continue through existing laboratory relationships and other existing contractual vehicles. The acquisition approach for future development projects will emphasize full and open competition.													
<b>(U) E. Schedule Profile</b>													
		<u>FY 2000</u>				<u>FY 2001</u>			<u>FY 2002</u>				
		1	2	3	4	1	2	3	4	1	2	3	4
(U) NextGen Receiver													
(U) -Digital Receiver Dev Complete							X						
(U) -Receiver Delivery										X			
(U) AIC Complete Prototype Testing							X						
(U) Advanced Satellite Comm Project						X							
(U) Advanced Signal ID Project						X							
(U) PCS Project						X							
(U) AFS IMU I&T Project										X			
(U) Wideband Signal ID Project										X			
(U) Advanced Development Comm Exploitation										X			
(U) Classified Projects										X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems			PROJECT 4882			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	COMPASS BRIGHT projects					0		4,492		4,518	
(U)	SPO Operations/Program Management Activities					0		330		370	
(U)	Total					0		4,822		4,888	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Various	Various	Various	TBD	TBD	0	0	4,492	4,518	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Various	Various	Various	TBD	TBD	0	0	330	370	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	None										
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	Subtotal					0					0
	<u>Support and Management Property</u>										
	Subtotal					0					0
	<u>Test and Evaluation Property</u>										
	None					0					0

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0305206F Airborne Reconnaissance Systems</b>			<b>4882</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	4,492	4,518	TBD	TBD
Subtotal Support and Management	0	0	330	370	TBD	TBD
Subtotal Test and Evaluation	0					0
Total Project	0	0	4,822	4,888	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001																																									
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305207F Manned Reconnaissance System																																													
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																																								
Total Program Element (PE) Cost	24,333	15,357	0	0	0	8,768	8,952	10,613	Continuing	TBD																																								
4754 COBRA BALL	10,977	15,357	0	0	0	8,768	8,952	10,613	Continuing	TBD																																								
4820 Sensor Development	13,356	0	0	0	0	0	0	0	Continuing	TBD																																								
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0																																								
<p>Funding for FY99-05 transferred to Air Force PE 0305207F from DARO Divestiture PE 0305207D. Funding for project 674820 in FY01-05 transferred to PE 0305202F in FY01. The title for BPAC 674820 changed from Manned Reconnaissance Systems U-2 to Sensor Development.</p> <p>FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b> The RDT&amp;E portion of this PE supports development efforts required to enhance and sustain the RC-135 reconnaissance aircraft. The RDT&amp;E efforts in this PE focus on sensor and safety of flight projects.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b> The program is categorized as Budget Activity 7 because it provided for development of technologies and capabilities in support of operational system development</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td>23,798</td> <td>0</td> <td></td> <td>TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td>24,388</td> <td>15,500</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td>-460</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td>500</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>												<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	23,798	0		TBD	(U) Appropriated Value	24,388	15,500			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-460				b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	500			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																														
(U) Previous President's Budget (FY 2001 PBR)	23,798	0		TBD																																														
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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305207F Manned Reconnaissance System</b>					PROJECT <b>4754</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4754 COBRA BALL	10,977	15,357	0	0	0	8,768	8,952	10,613	Continuing	TBD	
FY03-FY07 budget numbers do not reflect the DoD strategic review results.											
<p>(U) <b><u>A. Mission Description</u></b></p> <p>Laser Ranging and Imaging System (LRIS) -- This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with modifications to the RC-135 or its mission systems. The results of these efforts provide the requisite engineering necessary to implement modifications or provide a preliminary assessment of the technical feasibility, operability, or general military utility of an application. FY99 funds (Congressional plus-up) continues the Laser Ranging and Imaging system for the COBRA Ball platform and includes system testing in Maui. This project has been called the Field Laser Demonstration (FLD) and the Advanced Airborne Sensor (AAS) in past budget documentation. FY05 funds air traffic control and navigational safety non-recurring engineering for the RC-135 fleet.</p> <p>Multi-Function Self-Aligned Gate Technology (MSAG) -- Congress supports the development of the multi-function self-aligned gate active aperture antenna (AAA) technology for use on Reconnaissance aircraft. This system will provide wide-band, duplex, communications links simultaneously to a ground unit, other aircraft, and a satellite surrogate. This electronically steered array is a cost-effective solution to numerous DoD requirements.</p> <p>On-Board Pre-Processing (OBPP) -- The prototype pre-processing effort will develop the capability to screen the data as close to the collection source as possible and advise analysts which data requires immediate expert human intervention. The effort involves the development of an electronic support system and software development.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$3,977            LRIS (Continuation of Congressionally directed and funded program)</p> <p>(U) \$0                - \$2,400 Field Testing (LRIS)</p> <p>(U) \$0                - \$1,000 Integration of Acquisition Systems (LRIS)</p> <p>(U) \$0                - \$577 System Modification (LRIS)</p> <p>(U) \$3,000           Evaluate the MSAG AAA for use on the RC-135 as directed by Congress</p> <p>(U) \$4,000           On Board Preprocessor Prototype (OBPP - Congressionally added program)</p> <p>(U) \$0                - \$2,000 Electronic Support System (Prototype Preprocessor - Congressionally added)</p> <p>(U) \$0                - \$2,000 Preprocessing Software Development (Prototype Preprocessor)</p> <p>(U) \$10,977           Total</p>											
Project 4754			Page 3 of 11 Pages				Exhibit R-2A (PE 0305207F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305207F Manned Reconnaissance System</b>	<b>PROJECT</b> <b>4754</b>
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(U) **A. Mission Description Continued**

(U) FY 2001 (\$ in Thousands)  
 (U) \$5,966 LRIS (Continuation of Congressionally directed and funded program)  
 (U) \$9,391 ECARs (Start of FY01 Congressional add)  
 (U) \$15,357 Total

(U) FY 2002 (\$ in Thousands)  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **B. Project Change Summary**

Added the Multi-Function Self-Aligned Gate Technology and On-Board Pre-Processing effort to FY00.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) APPN 10,APAF, Line 56	234,385	159,501	188,630	125,719	77,274	83,743	76,250	77,885	Continuing	TBD

(U) **D. Acquisition Strategy**

The RC-135 development and enhancement activities are managed by the Air Force through the BIG SAFARI program in the Reconnaissance System Program Office. These projects are managed by ASC/RA and provide technical oversight and management of all aircraft, ground and support system modifications, integration and flight test engineering responsibility, product assurance and acceptance testing, and logistics and training activities. Aircraft, aircraft sensor systems, and associated ground support system modifications planned for FY02-FY07 include the procurement, fielding and logistical support for three distinct RIVET JOINT baseline configurations [baseline 7, 8 ,9] and two distinct baselines [baselines 2 & 3] for COMBAT SENT. Additional information is available within the classified Congressional budget exhibits.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Prototype Delivery (LRIS)		*										
(U) Engineering Analysis Report (MSAG)						*						
(U) Electronic Support System (OBPP)					*							
(U) Software Prototype (OBPP)						*						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305207F Manned Reconnaissance System</b>					PROJECT <b>4754</b>				
<b>(U) E. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
* - Denotes completed event														
X - Denotes planned event														
Project 4754				Page 5 of 11 Pages				Exhibit R-2A (PE 0305207F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305207F Manned Reconnaissance System			PROJECT 4754			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	System Design and Analysis					3,000		7,207			
(U)	Fabrication and Test					5,977		3,000			
(U)	Integration and Support					2,000		5,150			
(U)	Total					10,977		15,357			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	ASC/RAB	Multiple	Aug 97	N/A	N/A	4,795	10,977	15,357		Continuing	TBD
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>					4,795	10,977	15,357		TBD	TBD
	Subtotal Product Development										
	Subtotal Support and Management										
	Subtotal Test and Evaluation										
	Total Project					4,795	10,977	15,357		TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305207F Manned Reconnaissance System</b>					PROJECT <b>4820</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4820    Sensor Development	13,356	0	0	0	0	0	0	0	Continuing	TBD	
<p>Note: FY01 and future year funds transferred to PE 0305202F. This project was formerly titled Manned Reconnaissance Systems U-2.</p> <p>FY03-07 budget numbers do not reflect DoD's strategic review results.</p> <p>(U) <b>A. Mission Description</b>            This development project supports high payoff improvements to the U-2 sensors such as the Advanced Synthetic Aperture Radar System (ASARS-2) and the SENIOR YEAR Electro-optical Reconnaissance System (SYERS).</p> <p>The ASARS-2 Improvement Program (AIP) improves area search, precision geolocation, and image quality characteristics sufficiently to directly support the targeting of precision guided munitions (PGMs). Complex imagery will be produced by the AIP system and support significant exploitation products for the imagery analysts. AIP champions the introduction of Asynchronous Transfer Mode (ATM) datalink formats to the ISR community and supports National Imagery Transmission Format (NITF) standards. Several Line Replaceable Units (LRU) including the Process Control Unit (PCU), Receiver Exciter Controller (REC), and transmitter are approaching the end of their supportability life. Requirements include ASARS-2 reliability improvements/corrections and exploitation tools for the user (for example, system robustness, dual data link (DDL), beyond line of sight (BLOS), image quality, ground moving target indication (GMTI), Moving Target Exploitation (MTE) trackers, coherent change detection (CCD), electronic counter countermeasures (ECCM), antenna replacements, super resolution, REC upgrades, intelligence bandwidth compression (IBC), and interferometric SAR (IFSAR)). Developing new LRUs with next generation technology will make ASARS-2 supportable through the expected service life of the U-2 and provide capability enhancements necessary to support PGMs.</p> <p>The SYERS Preplanned Product Improvement (SYERS P3I) program includes upgrades such as multi-spectral collection and processing, polarization collection and processing, possible hyperspectral collection and processing, and the associated exploitation tools for the user. SYERS P3I also includes reliability and maintainability upgrades to incorporate next generation technology, maintaining and enhancing system supportability.</p> <p>Improvements to ASARS-2 and SYERS are transferable to Global Hawk High Altitude Endurance Unmanned Aerial Vehicles (HAE UAV) should migration of this improvement become a requirement.</p> <p>Also, this project accomplishes the development of a quick reaction capability (QRC) to improve the U-2 electronic warfare system (EWS) capability for Southwest Asia. Lastly this project includes funds from FY99 congressional additions to develop cockpit display improvements, conduct risk reduction studies for aircraft fuel</p>											
Project 4820			Page 7 of 11 Pages				Exhibit R-2A (PE 0305207F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE June 2001																														
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																														
<b>07 - Operational System Development</b>	<b>0305207F Manned Reconnaissance System</b>	<b>4820</b>																														
<p>(U) <b><u>A. Mission Description Continued</u></b>  conversion and complete reliability and maintainability upgrades and initial spares procurement for the SENIOR GLASS system.</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$4,000</td> <td>Develop DDL II and interface to AIP (Congressionally added effort)</td> </tr> <tr> <td>(U) \$502</td> <td>Continued development of AIP on-board processor</td> </tr> <tr> <td>(U) \$1,000</td> <td>Continued development of AIP range migration software</td> </tr> <tr> <td>(U) \$1,172</td> <td>Common Exploitation Tools</td> </tr> <tr> <td>(U) \$475</td> <td>SPO Support (AIP)</td> </tr> <tr> <td>(U) \$636</td> <td>Begin beyond line of sight (BLOS) data link interface integration (AIP &amp; SYERS)</td> </tr> <tr> <td>(U) \$225</td> <td>Begin radar transmitter development (AIP)</td> </tr> <tr> <td>(U) \$75</td> <td>Develop AIP employment concept scenarios</td> </tr> <tr> <td>(U) \$421</td> <td>Onboard Processor Environmental testing &amp; improvement</td> </tr> <tr> <td>(U) \$4,850</td> <td>U-2 QRC defensive system development</td> </tr> <tr> <td>(U) \$13,356</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>Funding transferred to PE 0305202F</td> </tr> <tr> <td>(U) \$0</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>Funding transferred to PE 0305202F</td> </tr> <tr> <td>(U) \$0</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Project Change Summary</u></b>  FY00 Congressional adds: Dual Data Link upgrade (\$3.5M)</p> <p>FY01 - Air Force reprogramed \$4.595M of Electronic Warfare System (EWS) RDT&amp;E funding to procurement.</p>			(U) \$4,000	Develop DDL II and interface to AIP (Congressionally added effort)	(U) \$502	Continued development of AIP on-board processor	(U) \$1,000	Continued development of AIP range migration software	(U) \$1,172	Common Exploitation Tools	(U) \$475	SPO Support (AIP)	(U) \$636	Begin beyond line of sight (BLOS) data link interface integration (AIP & SYERS)	(U) \$225	Begin radar transmitter development (AIP)	(U) \$75	Develop AIP employment concept scenarios	(U) \$421	Onboard Processor Environmental testing & improvement	(U) \$4,850	U-2 QRC defensive system development	(U) \$13,356	Total	(U) \$0	Funding transferred to PE 0305202F	(U) \$0	Total	(U) \$0	Funding transferred to PE 0305202F	(U) \$0	Total
(U) \$4,000	Develop DDL II and interface to AIP (Congressionally added effort)																															
(U) \$502	Continued development of AIP on-board processor																															
(U) \$1,000	Continued development of AIP range migration software																															
(U) \$1,172	Common Exploitation Tools																															
(U) \$475	SPO Support (AIP)																															
(U) \$636	Begin beyond line of sight (BLOS) data link interface integration (AIP & SYERS)																															
(U) \$225	Begin radar transmitter development (AIP)																															
(U) \$75	Develop AIP employment concept scenarios																															
(U) \$421	Onboard Processor Environmental testing & improvement																															
(U) \$4,850	U-2 QRC defensive system development																															
(U) \$13,356	Total																															
(U) \$0	Funding transferred to PE 0305202F																															
(U) \$0	Total																															
(U) \$0	Funding transferred to PE 0305202F																															
(U) \$0	Total																															
Project 4820	Page 8 of 11 Pages	Exhibit R-2A (PE 0305207F)																														

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305207F Manned Reconnaissance System</b>	PROJECT <b>4820</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E PE 0305202 AIP	0	32,248	32,804	13,965	1,951	1,948	1,989	2,031		TBD
(U) AIP Production* (APAF**) PE 0305207	27,287	0	0	0	0	0	0	0	0	27,287
(U) AIP Production PE 0305202	0	18,173	9,001	9,049	9,320	1,605	0	0	0	TBD

\* First Upgraded Radar Transmitter/Antenna Deliveries in 3QFY03  
 \*\* APAF production funding shown in PE 0305202F FY01-07

(U) **D. Acquisition Strategy**  
 For airborne collection capability upgrades, modify existing platform and associated ground control equipment via Engineering Change Proposals (ECPs)/Task Orders to existing USAF contracts. Develop an electronic defensive system QRC capability, then deploy and sustain on U-2 aircraft in Southwest Asia. For ASARS-2, develop and test new technology line replaceable units (LRU's) for subsequent retrofit into the U-2's, this may be performed during normal operations, U-2 Programmed Depot Maintenance (PDM), or during other ongoing U-2 modifications.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) -AIP Prototype Flight Test completion		*										
(U) -AIP Production Flight Test completion				*								
(U) -QRC Ground Test												X
(U) -QRC Flight Test												X
(U) -QRC IOC												X
(U) -AIP interface to DDL-II										X		

\*- Denotes Completed Event  
 X-Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305207F Manned Reconnaissance System				PROJECT 4820			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Primary Hardware Development					6,918		0			
(U)	Software Development					5,223		0			
(U)	Government Engineering Support					400		0			
(U)	System Testing					815		0			
(U)	Total					13,356		0			
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon (AIP & SENIOR GLASS)	CPIF	3Q96	N/A		0	5,176	0		Continuing	TBD
	L3Comm (AIP interface to DLL-II)	CPIF	3Q96	N/A		0	2,250	0		0	2,250
	Lockheed Martin (Cockpit)			N/A		3,000	0	0		0	3,000
	AFRL (Fuel Conversion)			N/A		1,300	0	0		0	1,300
	LM Sander (QRC)			N/A		9,537	5,321	0			14,858
<u>Support and Management Organizations</u>											
	ASC/RAP/AFRL					0	330			0	330
<u>Test and Evaluation Organizations</u>											
	WR-ALC/LR - Site 2, Edwards AFB					0	279			0	279
* See PE 0305202F for completion data.											
Project 4820				Page 10 of 11 Pages				Exhibit R-3 (PE 0305207F)			

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0305207F Manned Reconnaissance System</b>		PROJECT <b>4820</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	13,837	12,747	0		TBD	TBD
Subtotal Support and Management	0	330			0	330
Subtotal Test and Evaluation	0	279			0	279
Total Project	13,837	13,356	0		TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	24,576	25,593	11,429	16,829	12,626	10,981	11,279	11,599	Continuing	TBD
4821 Distributed Common Ground System Interoperability	1,679	1,579	0	0	0	0	0	0	Continuing	TBD
4826 Common Imagery Ground / Surface Systems	22,897	24,014	11,429	16,829	12,626	10,981	11,279	11,599	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
FY 03-FY 07 budget numbers do not reflect the DoD strategic review results.										
<b>(U) A. Mission Description</b>										
The Distributed Common Ground System (DCGS) Program is a cooperative effort between the services and agencies to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms, and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable (using the Common Data Link) with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer and Intelligence (C4I) environment. The program integrates architectures and standards from Common Imagery Ground/Surface Systems (CIGSS) for Imagery Intelligence (IMINT); Joint Interoperable Operator Network (JION) for Signal Intelligence (SIGINT); and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT.										
<b>(U) B. Budget Activity Justification</b>										
Program is in Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.										
<b>(U) C. Program Change Summary (\$ in Thousands)</b>										
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>				<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)			24,205	21,330	15,146				TBD
(U)	Appropriated Value			24,820	25,830					
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions			-147	-53					
	b. Small Business Innovative Research									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
				June 2001
BUDGET ACTIVITY		PE NUMBER AND TITLE		
<b>07 - Operational System Development</b>		<b>0305208F Distributed Common Ground Systems</b>		
(U)	<b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b>			
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
				<u>Total Cost</u>
	c. Omnibus or Other Above Threshold Reprogram			
	d. Below Threshold Reprogram			
	e. Rescissions	-97	-184	
(U)	Adjustments to Budget Years Since FY 2001 PBR			-3,717
(U)	Current Budget Submit/FY 2002 PBR	24,576	25,593	11,429
				TBD
(U)	<b><u>Significant Program Changes:</u></b>			
	- Congress added \$12M in FY00 and \$4.5M in FY01 for Eagle Vision			
	- USAF added \$21.5M in the FY01-05 budget for Common Imagery Processor			
	- Adjustments in FY02: Eagle Vision funding transfers to PE 27277F (\$1.95M), Time Critical Targeting funding added (\$1.25M), and Joint Services Imagery Processing System funding removed (\$3.0M).			

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305208F Distributed Common Ground Systems</b>					<b>PROJECT</b> <b>4821</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4821	Distributed Common Ground System Interoperability	1,679	1,579	0	0	0	0	0	0	Continuing	TBD

FY 03-FY 07 budget numbers do not reflect the DoD strategic review results.

**(U) A. Mission Description**

The Distributed Common Ground System (DCGS) Program is a cooperative effort between the services and agencies to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms, and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable (using the Common Data Link) with reconnaissance platforms and sensors, and integrated into the Joint C4I environment. The interoperability program integrates architectures and standards from Common Imagery Ground/Surface Systems (CIGSS) for IMINT; Joint Interoperable Operator Network (JION) for SIGINT; and Joint Airborne MASINT Architecture (JAMA) for MASINT. In FY02 funds will move to DCGS/CIGSS BPAC 674826.

**(U) FY 2000 (\$ in Thousands)**

- (U)** \$1,085 Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines.
- (U)** \$344 Continue engineering development of NATO interoperability standards.
- (U)** \$250 Manage DCGS Infrastructure Integrated Product Team (IPT) for ASD/C3I.
- (U)** \$1,679 Total

**(U) FY 2001 (\$ in Thousands)**

- (U)** \$1,079 Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines.
- (U)** \$250 Continue engineering development of NATO interoperability standards.
- (U)** \$250 Manage DCGS Infrastructure IPT for ASD/C3I.
- (U)** \$1,579 Total

**(U) FY 2002 (\$ in Thousands)**

- (U)** \$0 Funding moved to DCGS/CIGSS BPAC 674826
- (U)** \$0 Total

**(U) B. Project Change Summary**

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305208F Distributed Common Ground Systems</b>	PROJECT <b>4821</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) Other APPN Procurement line is classified. See PEM for details.										

(U) **D. Acquisition Strategy**

DCGS interoperability program will use FFRDC, GSA contracts, and competitive processes where possible.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) DCGS commonality and Interoperability standards	*											
(U) NATO Interoperability Standards	*											
(U) DCGS Infrastructure IPT	*											
(U) DCGS commonality and Interoperability standards						*						
(U) NATO Interoperability Standards						*						
(U) DCGS Infrastructure IPT						*	*	*	X			

\*- Denotes Completed Event  
X-Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems				PROJECT 4821	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Program Management					200		200		
(U)	System Engineering - Architectures and Interoperability					1,479		1,379		
(U)	Total					1,679		1,579		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
	MITRE	SS,FFP	2Q99	N/A	N/A	550	250	250	Continuing	TBD
	SAIC	SS,IDIQ	2Q99	N/A	N/A	700	700	647	Continuing	TBD
	Veridian (formerly MRJ)	SS,FFP	2Q99	N/A	N/A	300	394	400	Continuing	TBD
	Other Non-Prime Gov't	Multiple	2Q99	N/A	N/A	0	135	82	Continuing	TBD
<u>Contracts</u>										
<u>Support and Management Organizations</u>										
	SAIC	SS,IDIQ	2Q99	N/A	N/A	200	200	200	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
						<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Total</u>
						<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
	<u>Subtotals</u>									
	Subtotal Product Development					1,550	1,479	1,379	TBD	TBD
	Subtotal Support and Management					200	200	200	TBD	TBD
	Subtotal Test and Evaluation									
	Total Project					1,750	1,679	1,579	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305208F Distributed Common Ground Systems</b>					PROJECT <b>4826</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4826    Common Imagery Ground / Surface Systems	22,897	24,014	11,429	16,829	12,626	10,981	11,279	11,599	Continuing	TBD	
<p>FY 03-FY 07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>DCGS provides systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms, as well as commercial sources. DCGS is a system of systems that does not need to be collocated but must be interconnected by a robust communications structure to provide data streams between intelligence collector, exploiters, producers, disseminators, and users. DCGS has four core locations: two CONUS based and two OCONUS. Other DCGS systems are distributed among Air Force operational units at numbered Air Force level, to support the Joint Task Force commander and the Air Operations Center (AOC). The CONUS based systems are deployable and capable of reachback operations via satellite.</p> <p>DCGS provides significant support to Time Critical Targeting (TCT). This support will be enhanced with integration of software tools and closer integration to AOC tools. Coupled with updated operational procedures, TCT functionality supports tighter integration of C2, ISR, and attack systems. ISR management requirements previously identified as a FY00 reprogramming request are included within the AOC (PE 27410F) and DCGS weapons systems.</p> <p>Eagle Vision is a deployable ground station for programming and collecting panchromatic, multispectral, and synthetic aperture radar broad-area imagery from commercial earth remote sensing satellites and processing/merging it with national imagery for mission planning, topographic analysis, and intelligence-gathering purposes. The AF has an operational Eagle Vision system at Ramstein AFB, GE. The Reno ANGB, NV National Eagle (commercial imagery post processing capability) is being upgraded with direct downlink capability along with direct downlink being procured for South Carolina ANG. Reno ANGB, NV also has a processing and exploitation system (networked with other DCGS sites) that supports the Theater Airborne Reconnaissance System (TARS) in addition to other DCGS missions. Eagle Vision will transfer from PE 35208F to PE 27277F in FY02. DCGS Interoperability funding will transfer to DCGS/CIGSS in FY02.</p> <p>A mobile CIGSS/DCGS testbed is used by multiple service and agency program offices to test interfaces with new sensors, applications, and other modifications, and to support the integration and test of DCGS components prior to introduction into the operational environment.</p> <p>The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within CIGSS architecture. The function of the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within CIGSS. Baseline capability includes F/A-18 and U-2 sensors. Efforts are underway to augment the CIP baseline to process data from upgraded/ new sensors and to migrate CIP to a multi-intelligence processor.</p>											
Project 4826			Page 6 of 11 Pages				Exhibit R-2A (PE 0305208F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305208F Distributed Common Ground Systems</b>	<b>4826</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2000 (\$ in Thousands)</u></b>		
(U) \$2,849	Continue CIGSS/DCGS sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces.	
(U) \$900	Continue CIGSS/DCGS testbed development.	
(U) \$720	Continue system engineering and technical support.	
(U) \$1,778	Continue to provide sustaining engineering for commercial satellite imagery to ensure operational usability. Continue integration of 5 m and architecture preparation for 1 meter commercial satellites.	
(U) \$4,650	Continue evolving CIP to keep pace with new sensors and projected sensor modification programs. Investigate multi-int processing.	
(U) \$12,000	Upgrade and procure Eagle Vision commercial imagery direct downlink capabilities. Integrate with National Eagle. (Congressional add to FY00)	
(U) \$22,897	Total	
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$2,400	Continue CIGSS/DCGS sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national/tactical interfaces and to increase interoperability with expanding ISR platform/sensor baseline.	
(U) \$1,500	Continue CIGSS/DCGS testbed development.	
(U) \$360	Continue ISR system engineering and technical support.	
(U) \$4,500	1 Meter Satellite Upgrade for EV III & IV	
(U) \$1,900	Continue to provide sustaining engineering for commercial satellite imagery to ensure operational usability. Continue integration of new/upgraded commercial imaging satellites.	
(U) \$13,354	Continue evolving CIP to keep pace with growing sensor baseline: new and upgraded sensors. Implement initial multi-int processing upgrades and continue to investigate additional multi-int capabilities.	
(U) \$24,014	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$1,609	Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS Infrastructure Integrated Process Team (IPT) for ASD/C3I	
(U) \$250	Continue CIGSS/DCGS sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national/tactical interfaces and to increase interoperability with expanding ISR platform/sensor baseline.	
(U) \$1,350	Continue CIGSS/DCGS testbed development.	
Project 4826	Page 7 of 11 Pages	Exhibit R-2A (PE 0305208F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE			
							June 2001			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development				0305208F Distributed Common Ground Systems			4826			
(U) <b><u>A. Mission Description Continued</u></b>										
(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b>										
(U)	\$1,317	Develop improved command and control of ISR platforms/sensors to enhance DCGS support to the commander, improve integration with the AOC, and to increase Time Critical Targeting (TCT) effectiveness.								
(U)	\$6,903	Continue evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continue investigation of and implementation of advanced processing tools and multi-INT processing upgrades.								
(U)	\$11,429	Total								
(U) <b><u>B. Project Change Summary</u></b>										
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Other APPN									TBD
Procurement line is classified. See PEM for details.										
(U) <b><u>D. Acquisition Strategy</u></b>										
DCGS will use a spiral development program to field and upgrade the common ground station architecture. Systems and technology will be contracted for under a competitive Request for Proposal (RFP) process where possible.										
(U) <b><u>E. Schedule Profile</u></b>										
		<u>FY 2000</u>				<u>FY 2001</u>			<u>FY 2002</u>	
		1	2	3	4	1	2	3	4	1
(U)	Complete JSIPS Block III Upgrade			*						
(U)	Integrate national and tactical interface changes to DCGS			*						
(U)	Integrate new sensors and sensor modifications into CIP	*								
(U)	Integrate/Test changes in testbed						*			
(U)	Update commercial imagery interface	*								
(U)	Assess/integrate national and tactical interface changes to DCGS						*			
(U)	Integrate new sensors and sensor modifications into CIP						*			
(U)	Integrate/Test changes in testbed							*		
(U)	Update commercial imagery interface						*			
Project 4826										

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>										DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305208F Distributed Common Ground Systems</b>					PROJECT <b>4826</b>				
<b>(U) E. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) DCGS technology/software upgrade			*											
(U) DCGS technology/software upgrade						*								
(U) Eagle Vision Direct Downlink Award (NV & SC ANG)			*											
(U) Eagle Vision Direct Downlink Delivery (NV & SC ANG)								X						
(U) EV III & IV 1 Meter Upgrade						*								
(U) DCGS commonality and Interoperability standards									X					
(U) NATO Interoperability Standards									X					
(U) DCGS Infrastructure IPT									X	X	X	X		
(U) Assess/integrate national and tactical interface changes to DCGS									X					
(U) DCGS technology/software upgrade										X				
(U) Integrate new sensors and sensor modifications into CIP									X					
(U) Integrate/Test changes in testbed											X			
*- Denotes Completed Event / X-Denotes planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems			PROJECT 4826		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Hardware/Software Development					3,898		8,515		4,803
(U)	System Engineering					6,239		7,652		3,767
(U)	System Integration					10,825		5,800		1,609
(U)	Ancillary Hardware Development					935		1,047		250
(U)	Program Management					1,000		1,000		1,000
(U)	Total					22,897		24,014		11,429
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Raytheon, Garland, TX	Multiple	2Q99	N/A	N/A	0	300	300	0	Continuing	TBD
Northrop Grumman, Baltimore, MD	C, CPFF	2Q99	N/A	N/A	0	4,896	13,294	6,903	Continuing	TBD
Lockheed Martin, San Jose, CA	Multiple	2Q99	N/A	N/A	0	300	300	476	Continuing	TBD
TBD for DCGS Upgrades and Migration		TBD	N/A	N/A	0	1,018	1,600	1,150	Continuing	TBD
Matra, Velizy, FR	Multiple	1Q00	N/A	N/A	0	1,384	1,384	0	Continuing	TBD
Matra	SS, TBD	3Q00	N/A	N/A	0	11,886	4,470	0	Continuing	TBD
Other Non-Prime Gov't Contracts	TBD	TBD	N/A	N/A	0	1,122	0	0	Continuing	TBD
MITRE	SS, IDIQ	2Q99	N/A	N/A	0	456	566	500	Continuing	TBD
SAIC	SS, IDIQ	2Q99	N/A	N/A	0	535	1,100	1,150	Continuing	TBD
Veridian (formerly MRJ)	SS, FFP	2Q99	N/A	N/A	0	0	0	250	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE June 2001	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>					<b>0305208F Distributed Common Ground Systems</b>					<b>4826</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>											
<b><u>Support and Management Organizations</u></b>											
Other Non-Prime Gov't	TBD	TBD	N/A	N/A	0	1,000	1,000	1,000	Continuing	TBD	
Contracts											
<b><u>Test and Evaluation Organizations</u></b>											
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
					to FY 2000	FY 2000	FY 2001	FY 2002	Complete	Program	
<u>Subtotals</u>											
Subtotal Product Development					0	21,897	23,014	10,429	TBD	TBD	
Subtotal Support and Management					0	1,000	1,000	1,000	TBD	TBD	
Subtotal Test and Evaluation											
Total Project					0	22,897	24,014	11,429	TBD	TBD	

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**June 2001**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0305906F NCMC - TW/AA System**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13,566	19,132	15,797	15,694	18,159	18,225	18,585	18,979	Continuing	TBD
3881 Integrated TW/AA	4,385	4,098	0	0	0	0	0	0	0	124,173
4806 N/UWSS NORAD/USSPACECOM Warfighting System	9,181	15,034	15,797	15,694	18,159	18,225	18,585	18,979	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY02: Project content and funding for Integrated TW/AA (BPAC 3881) transferred to N/UWSS (BPAC 4806).

FY03 - FY07:

This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

**(U) A. Mission Description**

This program element funds the evolution of the Commander-in-Chief (CINC) North American Aerospace Defense Command (NORAD)/CINC US Space Command (USSPACECOM) Battle Management/Command, Control, Communications, Computers and Intelligence (BM/C4I) system and its supporting infrastructure into an integrated, flexible, interoperable, and more cost effective architecture. This integrated BM/C4I system includes the Integrated Tactical Warning and Attack Assessment (ITW/AA) command and control systems delivered under the completed Cheyenne Mountain Upgrade (CMU) program. The RDT&E primarily funds integration of these and other existing mission areas to provide a foundation for a fused battlespace picture for the CINC, plus required additional mission capability for the command and control of space forces so that USCINCSpace can better support theater warfighting CINCs.

This program element has two related projects: The first project, Integrated TW/AA, has been the primary source for modernization planning, integration and architecture development of modifications, upgrades and new acquisitions into the larger BM/C4I system. It provides standardization and interoperability among the integrated N/UWSS systems (e.g., ITW/AA, Space Based Infrared Systems (SBIRS) integration, National Missile Defense (NMD), other Force Enhancements and Space Control programs). The second project, the NORAD/USSPACECOM Warfighting Support System (N/UWSS), provides the means by which the CINC's BM/C4I system of systems will evolve to meet CINC NORAD/USCINCSpace's evolving mission requirements and achieve Defense Information Infrastructure Common Operating Environment (DII COE) compliance. This project is consistent with the Air Force Long Range Plan, Joint Vision 2010, and the Defense Planning Guidance. The Joint Requirements Oversight Council (JROC) approved the N/UWSS Mission Needs Statement (MNS) on 18 May 1998. Command and Control (C2) of Space Forces Operational Requirements Document (ORD) was completed 2nd Qtr FY00.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>			DATE <b>June 2001</b>		
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0305906F NCMC - TW/AA System</b>			
<b>(U) B. Budget Activity Justification</b> This program element is in Budget Activity 7, Operational System Development, because the projects in this program element support development acquisition programs or upgrades in support of operational systems.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	13,230	19,309	15,815	TBD
(U)	Appropriated Value	13,408	19,309		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-105	-135		
	b. Small Business Innovative Research	-487			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	802			
	e. Rescissions	-52	-42		
(U)	Adjustments to Budget Years Since FY 2001 PBR			-18	
(U)	Current Budget Submit/FY 2002 PBR	13,566	19,132	15,797	TBD
(U)	<u>Significant Program Changes:</u> N/A				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305906F NCMC - TW/AA System</b>					PROJECT <b>3881</b>		
COST (\$ in Thousands)			FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3881	Integrated TW/AA		4,385	4,098	0	0	0	0	0	0	Continuing	124,173
<p>- FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>- Efforts and funding under this BPAC transfer to N/UWSS (BPAC 4806, this PE) effective in FY02</p> <p>(U) <b><u>A. Mission Description</u></b>            This project was established to integrate new acquisitions such as the Cheyenne Mountain Upgrade (CMU) program into the Integrated Tactical Warning and Attack Assessment ( ITW/AA) network when it became apparent that such efforts could only be achieved through rigorous system-of-systems design and engineering analysis of all interfaces and relationships among the twenty-six systems of the network. The project provides interface analysis and disconnect resolution among the ITW/AA systems and future program upgrades (e.g., Space Based Infrared System (SBIRS) integration, National Missile Defense (NMD), other Force Enhancement and Space Control programs). This project supports the high priority task of integrating modifications, upgrades and new acquisitions for the USCINCSpace fixed site Command and Control (C2) nodes (e.g., Cheyenne Mountain Operations Center &amp; Space Operations Center), component C2 nodes (14th AF Aerospace Operations Center, 20th AF Missile Operations Center) and the mobile C2 node. As USCINCSpace moves toward common infrastructures and open system platforms, this project will integrate those systems into the ITW/AA network through pre-planned vertical release upgrades. This project has been the primary source for modernization planning, integration, and architecture development of modifications, upgrades and new acquisitions into the ITW/AA network.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$2,456      Began developing requirements, architecture, as well as planning for new and upgraded fixed and mobile C2 nodes and sensors including vertical release planning, communications architecture, technology roadmap, and information operations into the ITW/AA network (e.g., SBIRS and NMD).</p> <p>(U) \$1,100      Began providing systems engineering for new and upgraded fixed and mobile C2 nodes and sensors including integrated scheduling, AUTODIN-R program, SBIRS, and NMD.</p> <p>(U) \$829        Began test planning, execution, and safety for new and upgraded fixed and mobile C2 nodes and sensors including vertical releases, AUTODIN-R program, SBIRS, and NMD.</p> <p>(U) \$4,385      Total</p>												
Project 3881			Page 3 of 13 Pages					Exhibit R-2A (PE 0305906F)				



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305906F NCMC - TW/AA System					PROJECT 3881			
<b>(U) E. Schedule Profile Continued</b>													
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U)	AUTODIN Transition completed				*								
(U)	Continue SBIRS - ITW/AA Increment 2 (1)												
(U)	Clear Radar Upgrade Integration completed				*								
(U)	ITW/AA MPDS-R Legacy Comm Transition completed						*						
(U)	Continue NMD-BMC3 ITW/AA Integration (2)							X					
(U)	Continue ITW/AA Air Initiatives (3)						*						
(U)	Pre-Planned ITW/AA Software Vertical Release Upgrades completed (4)				*		*						
(U)	HAVE STARE (FPS-129) Radar Integration completed							X					
	* indicates task completed/X indicates scheduled task												
	(1) - SBIRS-ITWAA Increment 2 slipping with the overall SBIRS program (funding reallocated within BPAC). SBIRS - ITW/AA Increment 2 evolving to SBIRS - ITW/AA Integration spiral development under N/UWSS.												
	(2) - NMD-BMC3 ITW/AA Integration evolving to NMD-BMC3 ITW/AA Integration spiral development under N/UWSS.												
	(3) - ITW/AA Air Initiatives evolving to ITW/AA Air Initiatives spiral development under N/UWSS.												
	(4) - Pre-Planned ITW/AA Software Vertical Release Upgrades process evolving to System Architecture spiral development under N/UWSS.												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0305906F NCMC - TW/AA System</b>			<b>3881</b>				
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	SPO Support					1,644		2,280		0	
(U)	MITRE					0		120		0	
(U)	Aerospace					2,524		991		0	
(U)	TEMS/ITSP Contracts					217		707		0	
(U)	Program Support					4,385		4,098		0	
(U)	Total										
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
DISA	MIPR	Apr 96	1,328	1,328	1,328				0	1,328	
Lockheed Martin Co Springs, CO	C/CPIF/AF	Jun 95	6,390	6,390	6,390				0	6,390	
Lockheed Martin Sunnyvale, CA	CPIF/AF	Nov 98	2,561	2,561	2,561				0	2,561	
SPAWAR/Navy	MIPR	Nov 98	1,132	1,132	1,132				0	1,132	
DTRA Dulles, VA	MIPR	Apr 99	1,300	1,300	1,300				0	1,300	
Prime Contractors (Various)	Various	Various	1,552	1,552	1,552				0	1,552	
<u>Support and Management Organizations</u>											
FFRDC	CPFF	Oct 95	N/A	N/A	57,307	1,644	2,400	0	0	61,351	
TEMS/Information Technology Services Program	C/R	Various	N/A	N/A	34,142	2,524	991	0	0	37,657	
Contracts											
Program Support	N/A	Nov 95	N/A	N/A	9,166	217	707	0	0	10,090	
Project 3881						Page 6 of 13 Pages			Exhibit R-3 (PE 0305906F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE		
							June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development				0305906F NCMC - TW/AA System			3881		
<b>(U) Performing Organizations Continued:</b>									
<u>Support and Management Organizations</u>									
Prime Contractors (Various)				812				812	
<u>Test and Evaluation Organizations</u>									
None									
<b>(U) Government Furnished Property:</b>									
<u>Contract Method/Type Award or</u>									
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				14,263				0	14,263
Subtotal Support and Management				101,427	4,385	4,098	0	0	109,910
Subtotal Test and Evaluation									
Total Project				115,690	4,385	4,098	0	0	124,173

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305906F NCMC - TW/AA System						PROJECT 4806	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4806	N/UWSS NORAD/USSPACECOM Warfighting System	9,181	15,034	15,797	15,694	18,159	18,225	18,585	18,979	Continuing	TBD
<p>- FY03-FY07 budget numbers do not reflect the DoD strategic review results.                      - Projects from Integrated TW/AA (BPAC 3881, this PE) transfer to this BPAC effective in FY02</p> <p>(U) <b><u>A. Mission Description</u></b>                      The NORAD/USSPACECOM Warfighting Support System (N/UWSS) provides the future architecture for a NORAD/USSPACECOM Battle Management/C4I system of systems that complies with the Defense Information Infrastructure Common Operating Environment (DII COE), Joint Technical Architecture (JTA) standards and provides for DoD/Joint Command and Control (C2) interoperability. New Space C2 capability will be integrated with this new architecture along with the evolving legacy mission capability to provide a fused battlespace picture. N/UWSS addresses all Commander-in-Chief (CINC) North American Aerospace Defense Command (NORAD)/CINC US Space Command (USSPACECOM) missions including the Integrated Tactical Warning/Attack Assessment (ITW/AA) of missile, space, and air threats and Space Battle Management. N/UWSS will provide NORAD/USSPACECOM a C2 system that is flexible in responding to evolving mission needs (e.g., Space Based Infrared System (SBIRS), National Missile Defense (NMD), Space Control, and Information Operations); is interoperable within the NORAD/USSPACECOM warfighting functions and supporting/supported CINCs; and achieves reductions in total cost of ownership.</p> <p>The initial scope of N/UWSS will put into place a standards-based, interoperable architecture to support evolution of fixed and endurable C2 nodes to DII COE compliance and develop and integrate new Space C2 capability.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$1,038            Began enterprise infrastructure database development</p> <p>(U) \$1,009            Began fused battlespace situation monitor and assessment development</p> <p>(U) \$2,228            Began Command and Control (C2) of space forces/threat warning development</p> <p>(U) \$4,458            Started C2 of space forces/space battle manager development to provide theater situational awareness</p> <p>(U) \$448              Started C2 of space forces/space operations planning and development of a Space Tasking Order (STO)</p> <p>(U) \$9,181            Total</p>											
Project 4806			Page 8 of 13 Pages				Exhibit R-2A (PE 0305906F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305906F NCMC - TW/AA System</b>	<b>4806</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$3,319 Continue enterprise infrastructure database development</p> <p>(U) \$3,766 Continue fused battlespace picture situation monitor and assessment development</p> <p>(U) \$2,442 Continue C2 of space forces/threat warning development</p> <p>(U) \$3,936 Complete C2 of space forces/space battle manager development to provide theater situational awareness</p> <p>(U) \$1,571 Complete C2 of space forces/space operations planning and development of a Space Tasking Order (STO)</p> <p>(U) \$15,034 Total</p> <p>The following net transactions are not reflected in the FY01 program total: BTR=-224K and SBIR=-85K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$6,980 Continue Enterprise database infrastructure development and evolve architecture to incorporate an integrated space, missile, and air mission Common Operating Picture (COP)</p> <p>(U) \$2,578 Continue C2 of space forces/threat warning development</p> <p>(U) \$2,571 Continue evolution of C2 space battle manager through spiral development</p> <p>(U) \$3,668 Continue preliminary N/UWSS system engineering to define the path for new and upgraded missions (e.g., SBIRS and NMD, TBMCS, IO, Intel and ITW/AA) impacting fixed and mobile C2 nodes. This will include spiral development release planning, communications architecture, new technology insertion, integrated scheduling, test planning and test safety into the N/UWSS network</p> <p>(U) \$15,797 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <ul style="list-style-type: none"> <li>- Project content and funding from Integrated TW/AA (BPAC 3881, this PE) transferred to this project effective in FY02.</li> <li>- As part of the Total System Performance Responsibility (TSPR) initiative some systems engineering effort formerly performed by FFRDC (MITRE) will be transitioned to the ISC2 contractor (Lockheed Martin).</li> <li>- C2 of Space Forces incremental delivery scheduled for 4th Qtr FY00 was completed in 2nd Qtr FY01 due to testing difficulties. This change moved the subsequent delivery to 2nd Qtr FY02 from 4th Qtr FY01.</li> </ul>		
Project 4806	Page 9 of 13 Pages	Exhibit R-2A (PE 0305906F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305906F NCMC - TW/AA System				PROJECT 4806	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) OPAF (PE 35906F, Comm Elect Mods, P-1 Line Item #72, BA 3)	9,814	16,226	27,055	13,901	14,208	14,486	14,761	15,090	Continuing	TBD
(U) OPAF (PE 35906F, Spares and Repair Parts, P-1 Line Item #101, BA 5)	2,389	921	679	668	677	685	711	727	Continuing	TBD
<b>(U) D. Acquisition Strategy</b>										
N/UWSS employs an evolutionary spiral development acquisition strategy which enables rapid development and fielding of capability increments in response to validated requirements. Using a spiral development acquisition strategy is critical in a hardware/software intensive C2 system where 12-24 month technology cycles are common.										
N/UWSS uses a performance-oriented contracting strategy with industry, evolving toward Total System Performance Responsibility (TSPR). Contract was awarded in FY00 after full and open competition.										
<b>(U) E. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	
				1	2	3	4	1	2	3
				1	2	3	4	1	2	3
(U) Interim Integrated Space Command and Control (ISC2) Contract Awarded				*						
(U) ISC2 Contract Awarded (1)				*		*				
(U) Continue C2 of Space Forces incremental deliveries				*			*		X	
(U) SBIRS-ITW/AA Integration spiral development										X
(U) NMD - BMC3 ITW/AA Integration spiral development										X
(U) ITW/AA Air Initiatives spiral development										X
(U) System Architecture spiral development (2)							X		X	X
* Indicates task completion/X indicates scheduled task.										
Project 4806				Page 10 of 13 Pages				Exhibit R-2A (PE 0305906F)		

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>										DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305906F NCMC - TW/AA System</b>					PROJECT <b>4806</b>				
<b>(U) E. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
<p>1 - ISC2 contract awarded in Feb 00 to two contractors followed by a rolling down select with final contract award in Sep 00 to Lockheed Martin.</p> <p>2 - ISC2 will provide 6-month spirals to the system architecture</p>														
Project 4806				Page 11 of 13 Pages				Exhibit R-2A (PE 0305906F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305906F NCMC - TW/AA System			PROJECT 4806		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Systems Engineering				6,560		14,194			12,868
(U)	FFRDC				1,542		840			2,205
(U)	A&AS				917		0			500
(U)	Program Support				162		0			224
(U)	Total				9,181		15,034			15,797
In FY2001, all previous N/UWSS A&AS and Program Support activities moved to Major Contract line (ISC2 contract awarded 19 Sep 00). In FY2002, the A&AS and Program Support for BPAC 3881 transferred to BPAC 4806.										
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin	CP/AF	Sep 00	N/A	N/A	0	929	14,194	12,868	Continuing	TBD
Systems Engineering Development & Integration (SEDI)	MIPR	Jan 00	N/A	N/A	0	5,631	0	0	0	5,631
<u>Support and Management Organizations</u>										
FFRDC	CP/FF	Jan 00	N/A	N/A	0	1,542	840	2,205	Continuing	TBD
A&AS	CP/FF	Jan 00	N/A	N/A	0	917	0	500	Continuing	TBD
Program Support	N/A	Jan 00	N/A	N/A	0	162	0	224	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE	
							June 2001	
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development				0305906F NCMC - TW/AA System			4806	
<b>(U) Government Furnished Property:</b>								
	<u>Contract</u>	<u>Award or</u>						
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Description</u>	<u>Vehicle</u>							<u>Program</u>
<u>Product Development Property</u>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
								<u>Program</u>
Subtotal Product Development				0	6,560	14,194	12,868	TBD
Subtotal Support and Management				0	2,621	840	2,929	TBD
Subtotal Test and Evaluation								
Total Project				0	9,181	15,034	15,797	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	58,170	2,529	32,591	6,494	9,321	18,410	21,457	107,406	Continuing	TBD
4241 Advanced Electro Optical System (AEOS)	19,438	0	0	0	0	0	0	0	0	191,189
4279 Have Stare Radar	33,005	1,374	6,000	0	0	0	0	0	0	120,503
4791 GEODSS Sustainment	5,727	1,155	5,678	0	0	0	0	0	0	12,560
4930 Space Based Space Surveillance	0	0	5,263	6,494	9,321	18,410	21,457	107,406	Continuing	TBD
5010 Space Situational Awareness Initiatives	0	0	15,650	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional and subject to change.

1. Have Stare total cost not available since it was transferred from Intelligence budget in FY93. Total cost begins with FY94.
2. Space Based Space Surveillance is a new start with this budget submission.
3. Space Situational Awareness Initiatives is a new start with this budget submission.

(U) **A. Mission Description**  
 The SPACETRACK program element represents a worldwide Space Surveillance Network (SSN) of dedicated, collateral, and contributing electro-optical, passive radio frequency (RF) and radar sensors. The SSN is tasked to provide space object identification and cataloging, satellite attack warning, timely notification to U.S. forces of satellite fly-over, space treaty monitoring, and scientific and technical intelligence gathering. The continued increase in satellite and orbital debris populations, as well as the increasing diversity in launch trajectories, non-standard orbits, and geosynchronous altitudes, necessitates continued modernization of the SSN to meet existing and future requirements and ensure their cost-effective supportability. The resources and responsibility for completing the HAVE STARE Radar System development were transferred to SPACETRACK from an intelligence program per Congressional direction in FY93.

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

**BUDGET ACTIVITY**  
**07 - Operational System Development**

**PE NUMBER AND TITLE**  
**0305910F SPACETRACK**

**(U) A. Mission Description Continued**

The GEODSS Sustainment project, a new effort in FY00, develops and fields ten Charge-Coupled Device (CCD) cameras for the Ground-Based Electro Optical Deep Space Surveillance (GEODSS) System, located at Socorro, NM; Diego Garcia, Indian Ocean; and Maui, Hawaii. In addition, this project funds the purchase and integration of ten Modular Precision Angular Control Systems (MPACS), as well as sensor controller hardware and associated software.

The Space Based Space Surveillance (SBSS) project is a new start effort in FY02 to acquire a constellation of satellites to conduct space surveillance. A constellation of space-based space surveillance satellites would provide timely space situational awareness to meet future space control operations. The SBSS is a follow-on to a successful Advanced Concept Technology Demonstration (MSX/SBV).

The Space Situational Awareness (SSA) Initiatives, a new start in FY02, are a collection of efforts to accelerate the evolution of the Space Surveillance Network (SSN) into a more capable Space Situational Awareness Network (SSAN). The SSAN is a critical element to maintaining Space Control.

**(U) B. Budget Activity Justification**

All of these projects are Budget Activity 7, Operational Systems Development, because they involve development of or modifications to operational sensor network sites.

**(U) C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	54,010	2,553	583	TBD
(U) Appropriated Value	54,806	2,553		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-499	-18		
b. Small Business Innovative Research	-1,992			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	6,069			
e. Rescissions	-214	-6		
(U) Adjustments to Budget Years Since FY 2001 PBR			32,008	
(U) Current Budget Submit/FY 2002 PBR	58,170	2,529	32,591	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

June 2001

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305910F SPACETRACK

(U) C. Program Change Summary (\$ in Thousands) Continued

(U) Significant Program Changes:

1. The following net transactions are not reflected in the FY00 program total: BTR=+\$350K
2. The following net transactions are not reflected in the FY01 program total: BTR=+\$4014K, SBIR=-\$14K
3. FY00/01: BTRs include reprogramming actions for the HAVE STARE radar program to fund restructured program activities after scheduled Initial Operational Capability (IOC) date moved from 4th Qtr FY00 to 2nd Qtr FY02 (See BPAC 4279, this PE)
4. FY02: Adjustment funds Space Based Space Surveillance Concept Exploration and Concept Development - a new start in FY02 (See BPAC 674930, this PE, FY02 funding is \$5.263M). Also, the adjustment funds a new start effort in FY02 to improve Space Situational Awareness (SSA) (See BPAC 675010, this PE, FY02 funding is \$15.65M)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>					PROJECT <b>4241</b>
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4241    Advanced Electro Optical System (AEOS)	19,438	0	0	0	0	0	0	0	0	191,189
NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional and subject to change.										
<b>(U)    <u>A. Mission Description</u></b>										
The Advanced Electro-Optical System (AEOS) is a 3.67 meter telescope addition to the Maui Space Surveillance System (MSSS). The AEOS program was initiated in FY91. The Air Force Research Laboratory (AFRL) assumed management of AEOS in FY01 and the project is now funded in PE 63444F, Advanced Technology Development.										
<b>(U)    <u>FY 2000 (\$ in Thousands)</u></b>										
(U)    \$9,379	Completed site testing, integration, and characterization of the adaptive optics system and sensors; completed procurement of spares, and transition of system from AFSPC to AFRL									
(U)    \$2,685	Completed integration and test upgrade to MSSS Observatory Control System									
(U)    \$7,374	Continued R&D and upgrades to MSSS (P3I items) such as AEOS/OCS enhancements to instrumentation and coude beam; continued advanced daylight imaging techniques and tool development									
(U)    \$19,438	Total									
<b>(U)    <u>FY 2001 (\$ in Thousands)</u></b>										
(U)    \$0	No Activity - RDT&E efforts complete in FY00, transferred to PE 63444F									
(U)    \$0	Total									
<b>(U)    <u>FY 2002 (\$ in Thousands)</u></b>										
(U)    \$0	No Activity - RDT&E efforts complete in FY00, transferred to PE 63444F									
(U)    \$0	Total									
<b>(U)    <u>B. Project Change Summary</u></b>										
Observatory Control System Acceptance and AEOS Developmental Test and Evaluation (DT&E) Completion slipped from 3rd Qtr FY00 to 4th Qtr FY00 due to minor technical problems and difficulty in scheduling testing. The technical problems were corrected and AEOS DT&E was completed by 30 Sep 00.										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE June 2001							
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>				PROJECT <b>4241</b>							
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>															
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>						
(U) AF RDT&E															
(U) (PE 63444F) Maui Space Surveillance Systems (BA-03, Line #29)		19,445	6,484	6,444	6,441	6,436	6,528	6,623	Continuing	TBD					
Note: In FY01, AFRL assumed management of AEOS and funding appears in PE 63444F, Budget Activity 3, Advanced Technology Development															
<b>(U) D. Acquisition Strategy</b>															
All major contracts were awarded after full and open competition.															
<b>(U) E. Schedule Profile</b>															
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
				1	2	3	4	1	2	3	4	1	2	3	4
(U) Observatory Control Sys Acceptance							*								
(U) Adaptive Optics System Acceptance				*											
(U) AEOS DT&E Complete							*								
(U)															
* = Complete event															
X = Planned event															

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4241		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	AEOS Maui facilities expansion					19,438		0		0
(U)	Total					19,438		0		0
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Kiewit Pacific Co	C/FFP/AF	Aug 94	21,000	22,979	22,979	0	0	0	0	22,979
Kapolei, HI										
Contraves USA	C/FFP/AF	Dec 91	23,000	23,413	23,413	0	0	0	0	23,413
Pittsburgh, PA										
ROSI	C/CPAF/AF	Aug 94	31,000	36,962	34,362	2,179	0	0	0	36,541
Danbury, CT										
COMSAT RSI, Inc	C/FFP/AF	Aug 95	7,000	7,289	7,289	0	0	0	0	7,289
Clarksburg, MD										
Mission Research Corp	C/CPIF/AF	Jul 95	4,600	5,760	5,460	300	0	0	0	5,760
Santa Barbara, CA										
Raytheon	C/CPIF/AF	Sep 95	5,800	9,023	8,648	225	0	0	0	8,873
El Segundo, CA										
RTS	C/CPAF/AF	Sep 95	N/A	41,006	26,581	12,843	0	0	0	39,424
Kihei, Maui, HI										
RPS	C/CPAF/AF	Oct 90	N/A	41,006	12,933	0	0	0	0	12,933
Kihei, Maui, HI										
UH*	C/CR/AF	Oct 96	3,400	3,665	3,040	629	0	0	0	3,669
Maui, HI										
Project 4241					Page 6 of 26 Pages	Exhibit R-3 (PE 0305910F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										June 2001
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0305910F SPACETRACK					4241
<b>(U) <u>Performing Organizations Continued:</u></b>										
*Congressionally directed Spectrograph Research/Atmospheric Characterization										
<u>Support and Management Organizations</u>										
Logicon RDA	C/CPAF/AF	Oct 95	N/A	N/A	2,856	288	0	0	0	3,144
Albuquerque, NM										
Logicon RDA	C/CPAF/AF	Oct 93	N/A	N/A	3,360	0	0	0	0	3,360
Albuquerque, NM										
MIT/LL	SS	Oct 93	N/A	N/A	2,816	350	0	0	0	3,166
Cambridge, MA										
S. Systems Corp	C/CPFF/AF	Jul 93	N/A	N/A	2,976	0	0	0	0	2,976
Albuquerque, NM										
ARMY COE	SS	Jan 95	N/A	N/A	1,617	0	0	0	0	1,617
Haleakala, Maui, HI										
WJS	SS	Oct 97	N/A	N/A	409	150	0	0	0	559
Albuquerque, NM										
Program Office	Various	N/A	N/A	N/A	13,012	2,474	0	0	0	15,486
<u>Test and Evaluation Organizations</u>										
None										
<b>(U) <u>Government Furnished Property:</u></b>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										
Project 4241					Page 7 of 26 Pages			Exhibit R-3 (PE 0305910F)		

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>				<b>DATE</b> <b>June 2001</b>		
<b>BUDGET ACTIVITY</b>		<b>PE NUMBER AND TITLE</b>				<b>PROJECT</b>
<b>07 - Operational System Development</b>		<b>0305910F SPACETRACK</b>				<b>4241</b>
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						
Subtotal Product Development		144,705	16,176	0	0	0
Subtotal Support and Management		27,046	3,262	0	0	0
Subtotal Test and Evaluation						
Total Project		171,751	19,438	0	0	0
						191,189

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>					PROJECT <b>4279</b>
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4279    Have Stare Radar	33,005	1,374	6,000	0	0	0	0	0	0	120,503
NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional and subject to change.										
1. Have Stare total cost not available since it was transferred from intel budget in FY93. Total cost begins with FY94.										
<b>(U)    <u>A. Mission Description</u></b>										
The HAVE STARE radar (FPS-129) was transferred from the intelligence budget in FY93 at the direction of Congress. The Air Force has identified a requirement for the HAVE STARE system and has programmed funding in this program element to complete development and to deploy the system. The radar is a high resolution X-band tracking and imaging radar with a 27 meter mechanical dish antenna. The system is being deployed to Vardø, Norway, as a dedicated space surveillance sensor to support the mission of space object catalog maintenance and mission payload assessment. FY00 planned activity was restructured because of failure and loss of the radome. By Sep 00, a new radome had been installed, the electronics re-installed, and initial tracking achieved. DT&E commenced Mar 01 and is currently in process. System integration and checkout will complete in FY01. Formal system testing and evaluation will complete in FY02 and the system will be turned over for operational use to the user in 2nd Qtr FY02. The radar will not be a fully integrated element of the Missile Warning Network. The radar will only be integrated with the Space Control Center (Cheyenne Mtn AS, CO) and the Alternate Space Control Center (Dalgren Naval Surface Warfare Center, VA).										
<b>(U)    <u>FY 2000 (\$ in Thousands)</u></b>										
(U)    \$9,350	Completed facility preparation									
(U)    \$21,495	Continued system integration and checkout/replaced radome									
(U)    \$1,860	Continued Logistics and training									
(U)    \$300	Removed test facility and cleanup test site									
(U)    \$33,005	Total									
<b>(U)    <u>FY 2001 (\$ in Thousands)</u></b>										
(U)    \$500	Continue system development									
(U)    \$574	Continue system integration and checkout									
(U)    \$300	Accomplish residual logistics and training									
(U)    \$1,374	Total									
The following net transactions are not reflected in the FY01 program total: BTR=+4014K. This transaction is not reflected in other sections of the R-docs where an FY01 total is shown.										
Project 4279			Page 9 of 26 Pages				Exhibit R-2A (PE 0305910F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																																																																																	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>			PROJECT <b>4279</b>																																																																																																																
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$5,500                      Complete formal test and evaluation</p> <p>(U) \$500                         Complete logistics tasks</p> <p>(U) \$6,000                      Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>FY00/01: Funds reprogrammed to continue restructured FY00/01 project activities. The radome incident and greater DT&amp;E activity than planned resulted in a change to Initial Operational Capability (IOC) from the 4th Qtr of FY00 to the 2nd Qtr of FY02. Full Operational Capability (FOC) is scheduled for the 4th Qtr of FY02. FY02: \$6M added to program in FY02 to complete formal testing and evaluation.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) None</td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b></p> <p>The existing contract with Raytheon was modified in the third quarter of FY98 for the dismantling, shipment, and installation of the radar, and will be extended until FY02.</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4" style="text-align: center;"><u>FY 2000</u></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Radome replaced</td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Begin Formal System Testing and Correct Deficiencies</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Formal System Testing Completed</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>(U) System Initial Operational Capability</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> </tbody> </table> <p>* = Complete event X = Planned event</p>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) None												<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Radome replaced			*										(U) Begin Formal System Testing and Correct Deficiencies									*				(U) Formal System Testing Completed											X		(U) System Initial Operational Capability											X							
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																														
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	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																												
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Project 4279			Page 10 of 26 Pages				Exhibit R-2A (PE 0305910F)																																																																																																																	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4279		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Radome replacement					2,576		0		0
(U)	Site preparation and support					8,500		0		1,700
(U)	Installation and checkout					17,468		0		0
(U)	Logistics and training					1,691		0		0
(U)	Formal system testing					0		400		3,370
(U)	Complete open development and testing items					0		574		0
(U)	SPO support					2,480		400		930
(U)	Take down test facility and cleanup test site					290		0		0
(U)	Total					33,005		1,374		6,000
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Raytheon Elec Sys Sudbury, MA	C/CPIF/AF	Mar 91	66,912	66,912	49,240	21,503	500	3,370	0	74,613
Site Preparation	Various	Various	N/A	N/A	15,950	8,500	387	1,700	0	26,537
Other PY Organizations			N/A	N/A	2,739	0	0	0	0	2,739
Misc	Various	Various	N/A	N/A	813	372	0	0	0	1,185
Prior years data reflects costs since FY94										
<u>Support and Management Organizations</u>										
MITRE	SS/PR	Oct 99	N/A	N/A	3,901	800	150	250	0	5,101
A&AS	C/PR	Various	N/A	N/A	6,555	953	237	500	0	8,245
Lincoln Lab	SS/PR	Oct 99	N/A	N/A	408	150	50	0	0	608
Program Office	Various	Various	N/A	N/A	518	627	50	180	0	1,375
Project 4279					Page 11 of 26 Pages	Exhibit R-3 (PE 0305910F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK				PROJECT 4279		
(U) <b>Performing Organizations Continued:</b>										
Prior years data reflects costs since FY94										
<u>Support and Management Organizations</u>										
Misc	Various	Various	N/A	N/A	0	100	0	0	100	
Prior years data reflects costs since FY94										
<u>Test and Evaluation Organizations</u>										
None										
(U) <b>Government Furnished Property:</b>										
<u>Contract</u>										
<u>Method/Type</u>										
<u>Award or</u>										
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					68,742	30,375	887	5,070	0	105,074
Subtotal Support and Management					11,382	2,630	487	930	0	15,429
Subtotal Test and Evaluation										
Total Project					80,124	33,005	1,374	6,000	0	120,503
Prior years data reflects costs since FY94										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>					PROJECT <b>4791</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4791    GEODSS Sustainment	5,727	1,155	5,678	0	0	0	0	0	0	12,560
<p>NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The GEODSS Sustainment project began in FY00 to develop and field ten Charge-Coupled Device (CCD) Cameras for the Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) System, located at Socorro, NM; Diego Garcia, Indian Ocean; and Maui, Hawaii. The project includes associated software changes to the Optical, Command, Control &amp; Communications (OC3F) at Edwards AFB, CA. In addition, this project purchases and integrates ten replacement Modular Precision Angular Control Systems (MPACS), and funds associated logistics requirements, technical data and training. The project develops the first components and installs them at the test unit at Yoder, CO. Follow-on CCD cameras and MPACS will be produced and installed using Space Track Modification funds (BP83). This project, with the recently completed GEODSS Modification Program, will result in more than double the throughput and search rate of the legacy system. Without CCD camera replacement, the entire GEODSS system will be unusable in the FY04 time-frame, as mission critical Ebsicon tubes are no longer manufactured or supported by any vendor and the current supply of spares will run out by the end of 2003. This would result in loss of geosynchronous space situational awareness and less ability to assess the space order of battle of a potential aggressor.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$2,000            Began CCD design                      (U) \$1,600            Began camera design                      (U) \$1,000            Designed MPACS                      (U) \$1,127            Relocate to and set-up Test bed at Yoder, Colorado from Socorro, NM                      (U) \$5,727            Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$155              Begin operational use of Test Bed at Yoder, Colorado                      (U) \$500              Complete camera design                      (U) \$500              Test prototype camera /MPACS                      (U) \$1,155            Total</p> <p>The following net transactions are not reflected in the FY01 program total: SBIR=-14K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>										
Project 4791			Page 13 of 26 Pages				Exhibit R-2A (PE 0305910F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																								
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>		PROJECT <b>4791</b>																																																								
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$578 Contingency &amp; closeout efforts on development contractor</p> <p>(U) \$1,500 Complete prototype camera and testing</p> <p>(U) \$3,600 Initial Spares (need these funds appropriated in OPAF vice RDT&amp;E)</p> <p>(U) \$5,678 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>1. To more cost effectively accomplish activities, the prime contractor has chosen to move the Test Bed from Socorro, NM to Yoder, CO. Test Bed was previously listed at Socorro, New Mexico prior to contract award. Some existing Government assets located at the White Sands Missile Range (WSMR) in New Mexico were made available to the GEODSS Sustainment offerors as Government Furnished Property with the flexibility to propose alternative Test Bed locations in order to accomplish project objectives.</p> <p>2. Production of Modification Kits 2 &amp; 3 has been postponed from FY01, planned for FY03.</p> <p>3. \$3.6M in FY02 3600 to purchase initial spares was inadvertently placed in the wrong appropriation due to a database error. These funds should be appropriated in PE 35910F in the OPAF appropriation.</p> <p>4. Prototype mod kit test slipped due to a delay in camera integration.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td align="right">0</td> <td align="right">0</td> </tr> <tr> <td>(U) OPAF (PE 35910F, Space Mods Space, P-1 Line Item #62, BA 3)*</td> <td></td> <td align="right">8,682</td> <td align="right">8,785</td> <td align="right">2,434</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td align="right">19,901</td> </tr> <tr> <td>(U) OPAF (PE 35910F, Spares and Repair Parts,P-1 Line Item #101, BA 5)*</td> <td></td> <td align="right">509</td> <td align="right">27</td> <td align="right">612</td> <td align="right">317</td> <td align="right">27</td> <td></td> <td></td> <td align="right">0</td> <td align="right">1,492</td> </tr> </tbody> </table> <p>* For the GEODSS Sustainment project only</p> <p>(U) <b><u>D. Acquisition Strategy</u></b></p> <p>The contract for the GEODSS Sustainment project was awarded after full and open competition</p>										<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) Other APPN									0	0	(U) OPAF (PE 35910F, Space Mods Space, P-1 Line Item #62, BA 3)*		8,682	8,785	2,434						19,901	(U) OPAF (PE 35910F, Spares and Repair Parts,P-1 Line Item #101, BA 5)*		509	27	612	317	27			0	1,492						
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																					
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(U) Other APPN									0	0																																																					
(U) OPAF (PE 35910F, Space Mods Space, P-1 Line Item #62, BA 3)*		8,682	8,785	2,434						19,901																																																					
(U) OPAF (PE 35910F, Spares and Repair Parts,P-1 Line Item #101, BA 5)*		509	27	612	317	27			0	1,492																																																					
Project 4791			Page 14 of 26 Pages			Exhibit R-2A (PE 0305910F)																																																									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>					PROJECT <b>4791</b>		
<b>(U) E. Schedule Profile</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Award		*										
(U) Joint Technical Review			*									
(U) Design Review				*								
(U) Test Bed Standup (Relocate/setup at Yoder, CO)				*								
(U) Prototype Mod Kit Test								X				
(U) Detail Design Technical Interchange Mtg								X				
(U) Site 1 Mod Kit (1st article) production completed											X	
(U) Mod Kit 4 through 9 Production Completed (1st Qtr FY03)												
(U) Operational acceptance at Site 1 (Socorro, NM) (1st Qtr FY03)												
* = Complete event												
X = Planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4791		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	System Engineering					1,800		250		80
(U)	Hardware Development					1,700		600		1,900
(U)	Software Development					600		300		0
(U)	Program Office Support					1,627		5		98
(U)	Need funds appropriated in OPAF for Initial Spares					0		0		3,600
(U)	Total					5,727		1,155		5,678
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
TRW, Inc.	SS/CPAF/PR	Mar 00	7,230	7,230	0	4,100	1,150	1,980	0	7,230
Need appropriated in OPAF	N/A	N/A	3,600	0	0	0	0	3,600	0	3,600
<u>Support and Management Organizations</u>										
MITRE	SS/PR	Jan 00	745	745	0	700	0	45	0	745
MIT/Lincoln Lab	SS/PR	Feb 00	365	365	0	365	0	0	0	365
A&AS	C/PR	Mar 00	445	445	0	400	0	45	0	445
SPO	Various	Jan 00	175	175	0	162	5	8	0	175
<u>Test and Evaluation Organizations</u>										
None										
(U) <b>Government Furnished Property:</b>										
<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
Project 4791										

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE		
BUDGET ACTIVITY				PROJECT		
07 - Operational System Development				0305910F SPACETRACK		
				4791		
<b>(U) Government Furnished Property Continued:</b>						
	<u>Contract</u>					
	<u>Method/Type</u>	<u>Award or</u>				
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>
						<u>Budget</u>
						<u>FY 2002</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Product Development Property</u>						
None						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>
						<u>Budget</u>
						<u>FY 2002</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development				0	4,100	1,150
Subtotal Support and Management				0	1,627	5
Subtotal Test and Evaluation						98
Total Project				0	5,727	1,155
						5,678
						0
						12,560



<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>	PROJECT <b>4930</b>
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(U) **D. Acquisition Strategy**  
 The project will begin with Concept Exploration in FY02 and transition to System Development & Demonstration in FY04. Production is scheduled for FY09 with first launch planned in FY11. Contract vehicle is TBD.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Milestone A									X			
(U) Begin Concept Exploration & Technology Development									X			

\* = Complete event  
 X = Planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4930			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Analysis of Alternatives (AoA)					0		0		2,243	
(U)	Concept Exploration & Technology Development					0		0		2,870	
(U)	Program Office Support					0		0		150	
(U)	Total					0		0		5,263	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Multiple contractors	TBD	TBD	TBD	5,113	0	0	0	5,113	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Program Office	N/A	N/A	N/A	150	0	0	0	150	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	None										
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	None										
	<u>Support and Management Property</u>										
	None										
	<u>Test and Evaluation Property</u>										
	None										
Project 4930					Page 20 of 26 Pages			Exhibit R-3 (PE 0305910F)			

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>		PROJECT <b>4930</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	5,113	TBD	TBD
Subtotal Support and Management	0	0	0	150	TBD	TBD
Subtotal Test and Evaluation						
Total Project	0	0	0	5,263	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>					PROJECT <b>5010</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5010	Space Situational Awareness Initiatives	0	0	15,650	0	0	0	0	0	Continuing	TBD
<p>NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>            Space Situational Awareness (SSA) Initiatives are a collection of efforts to accelerate the evolution of the Space Surveillance Network (SSN) into a more capable Space Situational Awareness Network (SSAN). The SSAN is a critical element to maintaining space control. The Space Control Broad Area Review (BAR), Space Surveillance Task Force (SSTF) commissioned by the DepSecDef, and the Space Commission have all recommended improved space situational awareness capabilities. The three efforts described below are FY02 new starts and address several of the recommendations from the BAR, SSTF and the Commission.</p> <p>The first effort focuses on establishing an innovative office, the Space Situational Awareness Integration Office (SSAIO), to facilitate architecture development, investment planning, requirements allocation, and systems integration of SSA across DoD and other USG organizations/agencies. This is a FY02 new start effort.</p> <p>The second effort, SSA Command &amp; Control (C2), will fund a FY02 new start for spiral development of improved C2 and data fusion capabilities (leveraging the spiral development efforts of the Integrated Space C2 architecture) and is a FY02 new start effort.</p> <p>The third effort involves augmenting deep space surveillance capability by deploying remotely operated small aperture (commercially available or government-owned) telescopes and is also a FY02 new start effort. The telescopes would be geographically separated from Ground Based Electro-Optical Deep Space Surveillance (GEODSS) units to increase coverage and throughput of deep space surveillance. This program would provide a near-term gap filler capability until a Space Based Space Surveillance (SBSS) capability is achieved.</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u>            (U) \$0 0            (U) \$0 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u>            (U) \$0 0            (U) \$0 Total</p>											
Project 5010			Page 22 of 26 Pages				Exhibit R-2A (PE 0305910F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>	PROJECT <b>5010</b>
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

- (U) \$8,750 SSAIO stand-up and initial operations in Colorado Springs
- (U) \$3,900 SSA C2 Concept & Technology Development
- (U) \$3,000 Deep space surveillance augmentation - System Development
- (U) \$15,650 Total

(U) **B. Project Change Summary**

FY02 new start effort.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										
None										

(U) **D. Acquisition Strategy**

In FY02, the SSAIO project will begin standing up the office in Colorado Springs, CO, developing a SSA architecture, reviewing/updating FY00 SSTF results, and integrating modernization plans/investment strategies across the Services and USG agencies.

SSA C2 FY02 funding will begin to develop capabilities for improved processing, analysis and dissemination of space surveillance data evolving to an integrated space surveillance C2 architecture.

The effort to augment deep space surveillance capability will begin in FY02 to develop visible wavelength sensors on small aperture telescopes using sensor technology similar to the upgraded GEODSS telescopes. Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) technology will be used. The telescopes will be geographically dispersed and operate remotely with no on-site operators. Planned Final Operational Capability (FOC) is FY05.

(U) **E. Schedule Profile**

FY 2000 FY 2001 FY 2002



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 5010			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
					<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	
(U)	SSAIO Stand-up and initial operations in Colorado Springs									8,312	
(U)	SSA C2 Concept & Technology Development									3,705	
(U)	Deep space surveillance augmentation - System Development									2,850	
(U)	Program Office Support									783	
(U)	Total									15,650	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Multiple Contractors	TBD	TBD	TBD		0	0	0	14,867	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Program Office	N/A	N/A	N/A		0	0	0	783	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
(U) <b><u>Government Furnished Property:</u></b>											
	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Item Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	None										
	<u>Support and Management Property</u>										
	None										
	<u>Test and Evaluation Property</u>										
	None										
Project 5010					Page 25 of 26 Pages			Exhibit R-3 (PE 0305910F)			

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>		PROJECT <b>5010</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	14,867	TBD	TBD
Subtotal Support and Management	0	0	0	783	TBD	TBD
Subtotal Test and Evaluation						
Total Project	0	0	0	15,650	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305911F Defense Support Program						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	7,708	9,374	6,363	6,639	0	0	0	0	0	1,929,651
3615 Shield/Alert	6,608	7,312	4,269	4,544	0	0	0	0	0	76,018
3624 Defense Support Program	1,100	2,062	2,094	2,095	0	0	0	0	0	1,853,633
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

(U) **A. Mission Description**  
 The Defense Support Program (DSP) is a system of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network. DSP's primary mission is to provide strategic and tactical warning and limited attack assessment of a ballistic missile attack. Shield/ALERT (Attack and Launch Early Reporting to Theater) is a ground station mission processing capability which exploits inherent satellite capability to provide theater missile warning and cueing.

(U) **B. Budget Activity Justification**  
 DSP is an operational system and is funded in Budget Activity 7, Operational Systems Support

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	7,361	11,426	6,418	1,923,990
(U) Appropriated Value	7,459	9,462		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-58	-67		
b. Small Business Innovative Research	-271			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	607			
e. Rescissions	-29	-21		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
BUDGET ACTIVITY				June 2001
07 - Operational System Development		PE NUMBER AND TITLE		
		0305911F Defense Support Program		
(U)	<u>C. Program Change Summary (\$ in Thousands) Continued</u>			
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U)	Adjustments to Budget Years Since FY 2001 PBR			-55
(U)	Current Budget Submit/FY 2002 PBR	7,708	9,374	6,363
(U)	<u>Significant Program Changes:</u>			
(U)	FY00:			
	(1) \$1.1M in RDT&E funds reprogrammed to Defense Support Program, BPAC 673624 to start DSP EELV integration.			
	(2) DSP Flight 20 launched May 20, 2000			
(U)	FY01:			
	(1) \$2 million congressionally directed to support the High Accuracy Network Determination System (HANDS).			
				<u>Total Cost</u>
				1,929,651

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305911F Defense Support Program					PROJECT 3615	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3615	Shield/Alert	6,608	7,312	4,269	4,544	0	0	0	0	0	76,018
<p>This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>            Beginning in 1993, the Talon Shield project developed changes to preexisting DSP processing techniques to provide a Theater Missile Defense capability. These changes provided for the timely and accurate detection, description, and tracking of Tactical Ballistic Missiles and other theater threats, and served as the basis for the activation, on 10 March 1995, of full-time ALERT System operations by the newly constituted 11th Space Warning Squadron. ALERT-generated messages are distributed to theater warfighters; they enhance attack operations/counterforce operations by providing accurate, timely launch point estimates and support active and passive defense by providing cueing data to shooters and warning data to theater assets in the form of impact point predictions. Shield has continued to serve as a key resource in the evolution of operational improvements to the ALERT System, demonstrating the value of candidate enhancements on a prototype basis in the live, real-time environment. The FY02 Program supports the ground consolidation under SBIRS increment 1 and transition of ALERT operational capabilities to the SBIRS mission control station.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$2,960 Continued engineering task development to prototype and implement ALERT capabilities leading up to DSP Ground consolidation. (Space-Based Infrared System (SBIRS) Increment I).            (U) \$2,438 Continued SBIRS ground consolidation developmental test and evaluation.            (U) \$1,210 Performed Technical analysis and independent verification and validation of contractor.            (U) \$6,608 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$4,799 Continued engineering prototypes and feasibility analysis.            (U) \$1,243 Continued SBIRS ground consolidation developmental test and evaluation.            (U) \$1,270 Perform technical analysis and independent verification and validation of contractor.            (U) \$7,312 Total</p>											
Project 3615		Page 3 of 12 Pages					Exhibit R-2A (PE 0305911F)				

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305911F Defense Support Program</b>	<b>PROJECT</b> <b>3615</b>
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

(U) \$2,935	Continue engineering prototypes and feasibility analysis. Continue SBIRS ground consolidation developmental test and evaluation.
(U) \$1,334	Perform technical analysis and independent verification and validation of contractor.
(U) \$4,269	Total

(U) **B. Project Change Summary**

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										
(U) Missile Procurement (PE 305911F, BA-05, P-25)	100,469	105,380	112,456	99,309	30,338	35,725	34,009	34,867	0	4,993,653
(U) Other Procurement (PE 305911F, BA-03, P-62)	14	6	0	0	0	0			0	1,201,700
(U) Related RDT&E:										
(U) PE 604442F - SBIRS Low EMD (RDT&E, BA-05, R-68)	218,088	238,810	0	0	0	0	0	0	0	493,499
(U) PE 604441F- SBIRS High EMD (RDT&E, BA-05, R-67) SBIRS Low transferred to BMDO	400,348	563,967	405,229	334,753	270,531	197,390	246,625	228,855	292,419	4,249,767

(U) **D. Acquisition Strategy**

The Shield/ALERT Development effort is contracted with Aerojet Electronic Systems Division, Azusa, CA. Initially awarded as part of the Centralized Tactical Processing Program (CTPP) contract in FY95, the effort was moved to the DSP Sensor Post Production Contract in late FY99. The original award was a five-year contract ending in FY00. Authorization to extend the existing effort through FY03 was granted by SAF/AQ and a contract modification at the end of FY00 added the FY01 effort ( with provision to add FY02 and FY03 at a later date).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305911F Defense Support Program</b>					PROJECT <b>3615</b>		
<b>(U) E. Schedule Profile</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ALERT Version 14.1.5			*									
(U) ALERT Version 14.1.6					*							
(U) ALERT Version 14.1.7							*					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305911F Defense Support Program			PROJECT 3615			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Contractor Engineering Support					0					
(U)	Software Development					2,743		3,035		1,200	
(U)	Program Management Support					573		642		384	
(U)	Training Development					0					
(U)	Developmental Test and Evaluation					2,082		2,365		1,351	
(U)	Federally Funded Research and Development Contractor (FFRDC)					1,210		1,270		1,334	
(U)	Total					6,608		7,312		4,269	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Aerojet	CPAF	Aug 92	7,898	7,898	7,898				0	7,898
	SPARTA	CPAF	Aug 94	487	487	487				0	487
	Lincoln Lab	PO	Mar 95	288	288	288				0	288
	Aerojet (FO)	CPAF	Oct 96	43,624	43,624	26,031	5,398	6,042	2,939	3,214	43,624
	Nichols Research Corporation			2,378	2,378	2,378				0	2,378
<u>Support and Management Organizations</u>											
	Program Office Support			N/A	N/A	67				0	67
	FFRDC			N/A	N/A	9,147	1,210	1,270	1,330	1,330	14,287
	Dept Air Force			N/A	N/A	6,989				0	6,989
<u>Test and Evaluation Organizations</u>											

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0305911F Defense Support Program</b>		PROJECT <b>3615</b>	
	<u>Total Prior</u> <u>to FY 2000</u>	<u>Budget</u> <u>FY 2000</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	37,082	5,398	6,042	2,939	3,214	54,675
Subtotal Support and Management	16,203	1,210	1,270	1,330	1,330	21,343
Subtotal Test and Evaluation						
Total Project	53,285	6,608	7,312	4,269	4,544	76,018

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305911F Defense Support Program</b>					PROJECT <b>3624</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3624 Defense Support Program	1,100	2,062	2,094	2,095	0	0	0	0	0	1,853,633
<p>This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Defense Support Program (DSP) system provides a space-based surveillance system to detect and report missile and space launches and nuclear detonations in near real time during pre-, trans-, and post-attack periods. The DSP system consists of a constellation of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network. DSP's primary mission is to provide strategic and tactical warning and limited attack assessment of a ballistic missile attack. DSP also detects and reports nuclear detonation events and provides information for theater warning and exploitation. This project funds changes associated with Year 2000 roll-over, Advanced Concept Technology Demonstration (ACTD), and DSP-to-SBIRS transition activities and EELV mission unique engineering integration. The FY02 program funds mission unique engineering efforts to integrate DSP-23 on EELV.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$1,100 Started integration effort for DSP 23 on Evolved Expendable Launch Vehicle (EELV).                      (U) \$1,100 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$2,062 Continued integration efforts for DSP 23 on Evolved Expendable Launch Vehicle (EELV).                      (U) \$2,062 Total</p> <p>The following net transaction is not reflected in the FY01 program total: BTR: = +3405K. This transaction is not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$2,094 Continue integration efforts for DSP 23 on Evolved Expendable Launch Vehicle (EELV).                      (U) \$2,094 Total</p>										
Project 3624	Page 8 of 12 Pages					Exhibit R-2A (PE 0305911F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>June 2001</b>																																																																																																				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305911F Defense Support Program</b>			PROJECT <b>3624</b>																																																																																																				
<p>(U) <b><u>B. Project Change Summary</u></b>                  \$1.1M FY00 RDT&amp;E funds reprogrammed to this BPAC to start DSP EELV integration.</p> <p>The following net transaction is not reflected in the FY01 program total: BTR: = +3405K. The Space-Based Space Surveillance Operations ACTD was funded through this transaction.</p>																																																																																																												
<p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Missile Procurement (PE 305911F, BA-05, P-28)</td> <td style="text-align: right;">100,469</td> <td style="text-align: right;">105,380</td> <td style="text-align: right;">112,456</td> <td style="text-align: right;">99,309</td> <td style="text-align: right;">30,338</td> <td style="text-align: right;">35,725</td> <td style="text-align: right;">34,009</td> <td style="text-align: right;">34,867</td> <td style="text-align: right;">0</td> <td style="text-align: right;">4,993,653</td> </tr> <tr> <td>(U) Other Procurement (PE 305911F, BA-65, P-N/A)</td> <td style="text-align: right;">14</td> <td style="text-align: right;">6</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td></td> <td></td> <td style="text-align: right;">0</td> <td style="text-align: right;">1,201,700</td> </tr> <tr> <td>(U) Related RDT&amp;E:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) PE 604442F - SBIRS Low EMD</td> <td></td><td style="text-align: right;">218,088</td> <td style="text-align: right;">238,810</td> <td></td><td></td><td></td><td></td><td></td> <td style="text-align: right;">0</td> <td style="text-align: right;">493,499</td> </tr> <tr> <td>(U) PE 604441F - SBIRS High EMD SBIRS Low transferred to BMDO.</td> <td style="text-align: right;">400,348</td> <td style="text-align: right;">563,967</td> <td style="text-align: right;">405,229</td> <td style="text-align: right;">334,753</td> <td style="text-align: right;">270,531</td> <td style="text-align: right;">197,390</td> <td style="text-align: right;">246,625</td> <td style="text-align: right;">228,855</td> <td style="text-align: right;">292,419</td> <td style="text-align: right;">4,249,767</td> </tr> </tbody> </table>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN											(U) Missile Procurement (PE 305911F, BA-05, P-28)	100,469	105,380	112,456	99,309	30,338	35,725	34,009	34,867	0	4,993,653	(U) Other Procurement (PE 305911F, BA-65, P-N/A)	14	6	0	0	0	0			0	1,201,700	(U) Related RDT&E:											(U) PE 604442F - SBIRS Low EMD		218,088	238,810						0	493,499	(U) PE 604441F - SBIRS High EMD SBIRS Low transferred to BMDO.	400,348	563,967	405,229	334,753	270,531	197,390	246,625	228,855	292,419	4,249,767						
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																		
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<p>(U) <b><u>D. Acquisition Strategy</u></b>                  DSP has finished the production of satellites through DSP 23. Current contract efforts include support for Flight 21 launch and sustainment for post production storage testing, launch preparation, and on orbit testing. These efforts were added to the existing DSP Spacecraft and Sensor Post Production Support contracts. The Space Based Infrared Systems (SBIRS) satellites will be the follow-on system to DSP.</p>																																																																																																												
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																																																																																															
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Project 3624			Page 9 of 12 Pages				Exhibit R-2A (PE 0305911F)																																																																																																					



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305911F Defense Support Program			PROJECT 3624		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Space-Based Space Surveillance Operations ACTD*					0		0		0
(U)	DSP 23 Integration on EELV-Heavy					1,100		2,062		2,094
(U)	Total					1,100		2,062		2,094
*Funding of effort shared with BMDO. See Project Change Summary for funding details.										
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Previous DSP Contracts (1960's-1980's)	Various	Various	N/A	N/A	1,536,317	0	0		0	1,536,317
Boeing	FFP	Jul 00	7,351	7,351	0	1,100	2,062	2,094	2,095	7,351
Aerojet*	C/CPAF	Oct 93	25,719	25,719	25,719	0	0		0	25,719
Aerojet	C/CPAF	Sep 93	9,025	9,025	9,025	0	0		0	9,025
Aerojet	C/CPFF		25,743	25,743	25,743	0	0		0	25,743
Aerojet	C/CPAF	Oct 96	2,578	2,578	2,578	0	0		0	2,578
Loral	C/FPI/AF/CPF		37,732	37,732	37,732	0	0		0	37,732
DOE	P.O.		10,724	10,724	10,724	0	0		0	10,724
Loral	C/CPAF		22,975	22,975	22,975	0	0		0	22,975
* EAC is also funded by other appropriations.										
<u>Support and Management Organizations</u>										
Various	MIPRs	As needed			6,301	0	0		0	6,301
Aerojet	C/ CPFF		1,305	1,305	1,305	0	0		0	1,305
Aerojet/						0	0		0	0
Consolidated	C/ FFP	Oct 96	4,724	4,724	4,724	0	0		0	4,724

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305911F Defense Support Program</b>				<b>3624</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>										
* EAC is also funded by other appropriations.										
<u>Support and Management Organizations</u>										
FFRDC	MORD		N/A	N/A	42,109	0	0	0	42,109	
Other Gov't Cost			N/A	N/A	35,036	0	0	0	35,036	
TRW	C/CPFF		9,872	9,872	9,872	0	0	0	9,872	
TRW Consolidated	C/CPAF	Oct 96	292	292	292	0	0	0	292	
PRC	C/FPIF	Apr 94	7,579	7,579	7,579	0	0	0	7,579	
SPARTA	C/CPAF	Aug 94	150	150	150	0	0	0	150	
<u>Test and Evaluation Organizations</u>										
Program Office Support	Various	As needed	N/A	N/A	68,101	0	0	0	68,101	
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					1,670,813	1,100	2,062	2,094	2,095	1,678,164
Subtotal Support and Management					107,368	0	0		0	107,368
Subtotal Test and Evaluation					68,101	0	0		0	68,101
Total Project					1,846,282	1,100	2,062	2,094	2,095	1,853,633

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305913F NUDET Detection System (Space)</b>					<b>PROJECT</b> <b>2808</b>	
<b>COST (\$ in Thousands)</b>	<b>FY 2000 Actual</b>	<b>FY 2001 Estimate</b>	<b>FY 2002 Estimate</b>	<b>FY 2003 Estimate</b>	<b>FY 2004 Estimate</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>
2808 Nuc Detonation Det Sys (sensors)	13,497	11,977	18,823	20,002	24,878	23,406	24,413	25,166	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

**(U) A. Mission Description**

The Nuclear Detonation (NUDET) Detection System (NDS) provides a worldwide, highly survivable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space in near-real time. The NDS supports NUDET detection requirements for USSPACECOM (Integrated Tactical Warning and Attack Assessment (ITW/AA)), USSTRATCOM (Nuclear Force Management), and AFTAC (Treaty Monitoring). NDS consists of space and ground segments. The space segment consists of NUDET detection sensors (optical, x-ray, dosimeters and EMP) on Global Positioning System (GPS) satellites. The ground segment includes the Integrated Correlation and Display System (ICADS) and the Ground NDS Terminals (GNT).

This NDS program element funds Research and Development of ICADS, GNT, and NDS analysis payload (NAP). ICADS provides a fixed ground receiving station. GNT provides a survivable ground receiving station. NAP improves existing NDS capability and will be integrated onto GPS Block IIR satellites 13-21. The EMP sensor for GPS Block IIF is funded in the National Foreign Intelligence Program (NFIP).

**(U) FY 2000 (\$ in Thousands)**

- (U) \$12,074 Continued ICADS and GNT development
- (U) \$1,052 Continued NDS sensor on-orbit qualification
- (U) \$109 Continued Space Long Range Planning
- (U) \$262 Continued Mission Support requirements
- (U) \$13,497 Total

**(U) FY 2001 (\$ in Thousands)**

- (U) \$10,374 Continue ICADS and GNT development
- (U) \$1,026 Continue NDS sensor on-orbit qualification
- (U) \$200 Continue Space Long Range Planning
- (U) \$377 Continue Mission Support requirements
- (U) \$11,977 Total

Project 2808

Page 1 of 6 Pages

Exhibit R-2 (PE 0305913F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																																	
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305913F NUDET Detection System (Space)</b>	PROJECT <b>2808</b>																																																																	
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2001 (\$ in Thousands) Continued</u></b>          The following net transactions are not reflected in the FY01 program total: BTR = +\$3,999K, SBIR = -\$791K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">(U) \$15,607</td> <td>Continue ICADS and GNT development</td> </tr> <tr> <td>(U) \$1,163</td> <td>Continue NDS sensor on-orbit qualification</td> </tr> <tr> <td>(U) \$589</td> <td>Continue Mission Support Requirements</td> </tr> <tr> <td>(U) \$1,464</td> <td>Technical support</td> </tr> <tr> <td>(U) \$18,823</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Budget Activity Justification</u></b>          This program is in Budget Activity 7 - Operational System Development because it is a post-Milestone III program.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 55%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">14,430</td> <td style="text-align: center;">17,088</td> <td style="text-align: center;">17,322</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">14,430</td> <td style="text-align: center;">12,088</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: center;">-128</td> <td style="text-align: center;">-85</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-524</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: center;">-225</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-56</td> <td style="text-align: center;">-26</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: center;">1,501</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">13,497</td> <td style="text-align: center;">11,977</td> <td style="text-align: center;">18,823</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table>			(U) \$15,607	Continue ICADS and GNT development	(U) \$1,163	Continue NDS sensor on-orbit qualification	(U) \$589	Continue Mission Support Requirements	(U) \$1,464	Technical support	(U) \$18,823	Total		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	14,430	17,088	17,322	TBD	(U) Appropriated Value	14,430	12,088			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-128	-85			b. Small Business Innovative Research	-524				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-225				e. Rescissions	-56	-26			(U) Adjustments to Budget Years Since FY 2001 PBR			1,501		(U) Current Budget Submit/FY 2002 PBR	13,497	11,977	18,823	TBD
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Project 2808	Page 2 of 6 Pages	Exhibit R-2 (PE 0305913F)																																																																	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305913F NUDET Detection System (Space)</b>				PROJECT <b>2808</b>	
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
<b>(U) Significant Program Changes:</b>										
\$5,000K Congressional reduction in FY01										
Transferred technical support funding from MPAF to the RDT&E appropriation to align funding with NDS RDT&E efforts being performed: +\$1,464K in FY02. \$5,000K Congressional reduction in FY01.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Operations & Maintenance, (PE 0305913F, BA 1, Operating Forces	6,694	7,880	9,437	8,238	8,078	8,958	9,317	9,455	Continuing	Continuing
(U) Missile Procurement, (PE 0305913F, BA 5 - Space and Other Support, P-23)	1,470	1,465	0	0	0	0	0	0	0	2,935
(U) Other Procurement, (PE 0305913F, BA 3 - Electronics and Telecom Equipment, P-58)	3,454	2,649	8,470	7,990	12,735	11,946	12,412	12,748	Continuing	Continuing
(U) Related RDT&E:										
(U) PE 0305165F, NAVSTAR GPS (Space/Ground Segment)										
(U) PE 0305911F, Defense Support Program										
Project 2808										
Page 3 of 6 Pages										
Exhibit R-2 (PE 0305913F)										

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305913F NUDET Detection System (Space)</b>	<b>PROJECT</b> <b>2808</b>
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**(U) E. Acquisition Strategy**

The NDS Acquisition Strategy is to develop and procure components to sustain the U. S. NDS capability for the GPS Block IIR and IIF satellites. Funding is sent by Military Interdepartmental Purchase Request (MIPR) from DoD and Department of Energy (DoE) to Sandia and Los Alamos National Laboratories on existing DOE contracts.

**(U) F. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) GPS IIF Use Case Model Overview	*		*		*		*		X			X
(U) GPS IIF System Specification Review		*										
(U) GPS IIF System specification Configuration Control Board (CCB)		*										
(U) GPS IIF Phase Review	*		*		*		*		X			X
(U) GPS IIF System Specification Doc Delivery				*								
(U) GPS IIR O&M (S/W Modifications)	*	*	*	*	*	*	*	X				
(U) ICADS Operational Strings move to SBIRS Facility									X			

\* Completed Event  
X Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305913F NUDET Detection System (Space)			PROJECT 2808			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	ICADS and GNT development					12,074		10,374		15,607	
(U)	NDS sensor on-orbit qualification					1,052		1,123		1,163	
(U)	Mission support requirements and system studies					371		480		635	
(U)	Technical support					0		0		1,418	
(U)	Total					13,497		11,977		18,823	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Sandia National Labs	MIPR	Oct 94	Continuing	Continuing	44,790	10,928	9,202	14,411	Continuing	TBD
	GNT: Intermetrics	CPFF	Dec 93	1,262	1,262	1,262	0	0	0	0	1,262
	SAIC (Intg/Grd Supt)	Time/Matls	Dec 95	Continuing	Continuing	4,344	1,146	1,172	1,196	Continuing	TBD
	Combined GOSC/NAP:	FFP	Oct 97	3,633	3,633	6,166	0	0	0	0	6,166
	Lockheed Martin										
	SAIC	Time/Matl	Dec 97	432	432	432	0	0	0	0	432
	W-Sensor: SRI (Stanford Rsch Inst.)	CPFF	Aug 94	415	415	415	0	0	0	0	415
	Los Alamos Natl Lab	MIPR	Jan 96	Continuing	Continuing	4,077	1,052	1,026	1,163	Continuing	TBD
<u>Support and Management Organizations</u>											
	Mission Support	Multiple	N/A	Continuing	Continuing	3,602	371	577	589	Continuing	TBD
	Prog Contractual Spt.	Multiple	Various	1,534	1,534	1,534	0	0	0	0	1,534
	Technical Support	Multiple	Various	N/A	N/A	0	0	0	1,464	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	Hill AFB Utah			9	9	9	0	0	0	0	9

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
07 - Operational System Development				0305913F NUDET Detection System (Space)					
				2808					
<p>(U) <b>Government Furnished Property:</b></p> <p><u>Contract</u></p> <p><u>Method/Type</u>   <u>Award or</u></p> <p><u>or Funding</u>   <u>Obligation</u>   <u>Delivery</u></p> <p><u>Description</u>   <u>Vehicle</u>   <u>Date</u>   <u>Date</u></p> <p><u>Product Development Property</u></p> <p>N/A</p> <p><u>Support and Management Property</u></p> <p>N/A</p> <p><u>Test and Evaluation Property</u></p> <p>N/A</p>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<b>Subtotals</b>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				61,486	13,126	11,400	16,770	TBD	TBD
Subtotal Support and Management				5,136	371	577	2,053	TBD	TBD
Subtotal Test and Evaluation				9	0	0	0	0	9
Total Project				66,631	13,497	11,977	18,823	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305917F Space Architect</b>					PROJECT <b>4746</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4746	AF/National Program Cooperation	10,696	0	0	0	0	0	0	0	0	0
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

NOTE: This administration has not addressed FY 2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional and subject to change.

No RDT&E funding is being requested for this PE, and none will be requested in the future. All further funding for continuing the three efforts in this PE in FY 2000 will be requested under different Program Elements from FY 2001 forward, as follows:

- 1) PE 0603856F, 'Air Force/National Program Cooperation (AFNPC)', requests funding for A) the Air Force/NRO Integration Planning Group, or ANIPG and B) the Space-Based Infrared System Technical Intelligence project, or SBIRS TI
- 2) PE 0305190D, 'C3I Intelligence Programs', requests funding for the National Security Space Architect (NSSA)

(U) **A. Mission Description**  
Detailed descriptions for the ANIPG and SBIRS TI efforts in AFNPC are in PE 0603856F, where FY 2001 funds for them were requested. Those efforts are detailed in depth there; the National Security Space Architect, part of AFNPC for FY 2000 only, is detailed in this exhibit.

The Under Secretary of Defense for Acquisition and Technology established the Department of Defense (DoD) Office of the Space Architect (OSA) to consolidate DoD space system architecture development responsibilities into a single organization. The OSA was one of DoD's responses to congressional concerns regarding DoD space management. In July 1998, a Memorandum of Understanding was signed by the Secretary of Defense and Director of Central Intelligence to incorporate the architectural activities of the National Reconnaissance Office (NRO). The name was changed to National Security Space Architect (NSSA). This organization works to integrate space system architectures, eliminate unnecessary vertical stovepiping of space programs, and achieve efficiencies in acquisition and future operations through space program integration, thereby improving space support to a variety of customers. The NSSA obtains direct support from various space planning and development organizations across the federal government and industry for space architecture planning and development. Funding in this document incorporates DoD requirements only. NRO requirements and funding to support the NSSA efforts are not included in this program element.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0305917F Space Architect</b>		<b>4746</b>	
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2000 (\$ in Thousands)</b>					
(U)	\$2,192	Mission Information Management (MIM) ADT			
(U)	\$456	Space Weather (SWx), Space Control and MILSATCOM Architecture Tracking			
(U)	\$2,711	Core Capabilities (Space Architecture Engineering, Analytic Methods and Tools, Collaboration Technologies, Process Support, and Information Management)			
(U)	\$1,554	Architectural ADTs/Studies Directed by Stakeholders (including Hyperspectral Strategy Study) and Architecture Study Planning			
(U)	\$355	Satellite Operations Architecture Transition Planning and Tracking			
(U)	\$1,115	National Security Space Master Plan and National Security Space Roadmap Development and Update			
(U)	\$1,590	Technical support to the AF/NRO Integration Planning Group (ANIPG)			
(U)	\$723	Developing processing capabilities to exploit SBIRS sensor data for technical intelligence			
(U)	\$10,696	Total			
<b>(U) FY 2001 (\$ in Thousands)</b>					
(U)	\$0	No Activity			
(U)	\$0	Total			
<b>(U) FY 2002 (\$ in Thousands)</b>					
(U)	\$0	No Activity			
(U)	\$0	Total			
<b>(U) B. Budget Activity Justification</b>					
This program is in Budget Activity 7 because the architecture studies affect the design and acquisition of systems to be developed.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	10,882	0	0	TBD
(U)	Appropriated Value	10,882			
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research	-396			
	c. Omnibus or Other Above Threshold Reprogram				
Project 4746		Page 2 of 6 Pages	Exhibit R-2 (PE 0305917F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE			
							June 2001			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development				0305917F Space Architect			4746			
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>		
	d. Below Threshold Reprogram			210						
	e. Rescissions									
(U)	Adjustments to Budget Years Since FY 2001 PBR									
(U)	Current Budget Submit/FY 2002 PBR			10,696		0		TBD		
(U)	<u>Significant Program Changes:</u>									
	FY 2000: \$210K reprogramming supports ANIPG-related studies									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Cost to Complete</u>
(U)	Intelligence Community*									
	*Not available									
<b>(U) E. Acquisition Strategy</b>										
The acquisition strategy for the National Security Space Architect is detailed below; strategies for other AFNPC efforts are detailed in the budget justification for PE 0603856F.										
RDT&E funds will be used to obtain infrastructure support and direct support from various space planning and development organizations across the DoD and industry, including Federally Funded Research & Development Centers (FFRDCs) and contracted System Engineering and Technical Assistance in direct support of DoD space architecture planning and development. Funds will be applied to existing contract vehicles.										
-- As primary support, the Space Architect plans to use two existing Space & Missile Center (SMC) contracts for technical support:										
-- Engineering, Analysis, Design and Development Contract; Science Applications International Corporation (SAIC)										
-- Engineering, Analysis and Design Contract; Nichols Research Corporation										
-- These contracts currently provide support to the Air Force SMC long-range planning, conceptual development, and engineering analysis and assessment efforts.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>											DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305917F Space Architect</b>					PROJECT <b>4746</b>			
<b>(U) <u>F. Schedule Profile Continued</u></b>													
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	MIM 99 Report	*											
(U)	Hyperspectral Strategy Study Completion				*								
<p>* = completed event X = planned event</p> <p>*FY 2000 schedule events for the NSSA are above; FY 2000 schedule events for AFNPC efforts that moved to PE 0603856F in FY 2001 (ANIPG and SBIRS TI) are noted in the budget justification document for that PE. All schedule events beyond FY 2000 for NSSA are noted in PE 0305190D and for AFNPC are noted in PE 0603856F.</p>													
Project 4746				Page 4 of 6 Pages				Exhibit R-2 (PE 0305917F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305917F Space Architect			PROJECT 4746		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Architecture Tracking and Transition Planning					811				
(U)	National Security Space Master Plan and Roadmap					1,115				
(U)	Mission Information Management					2,192				
(U)	Studies/ADTs Directed by Stakeholders and Study Planning					1,554				
(U)	Core Capabilities & Analysis					2,711				
(U)	Technical support to the AF/NRO Integration Planning Group					723				
(U)	Develop processing capability to exploit SBIRS data for the technical intelligence (TI) mission					1,590				
(U)	Total					10,696				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
SMC	MIPR	12/98	Continuing	Continuing		723			Continuing	TBD
<u>Support and Management Organizations</u>										
Aerospace	C/CPAF	1993	N/A	N/A	2,200	876			Continuing	TBD
MITRE	C/CPAF	1993	N/A	N/A	1,653	590			Continuing	TBD
Misc Contracts	Various	Various	N/A	N/A	4,249	38			Continuing	TBD
Misc In-House	Various	Various	N/A	N/A	1,531	2,634			Continuing	TBD
NRC	C/CPAF	1997	N/A	N/A	7,398	2,211			Continuing	TBD
SAIC	C/CPAF	1997	N/A	N/A	8,912	2,034			Continuing	TBD
ANIPG	MIPR	10/98	Continuing	Continuing		1,590			Continuing	TBD
<u>Test and Evaluation Organizations</u>										
None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305917F Space Architect			PROJECT 4746		
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					723			TBD	TBD
Subtotal Support and Management				25,943	9,973			TBD	TBD
Subtotal Test and Evaluation									
Total Project				25,943	10,696			TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0308601F Modeling and Simulation Support					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	1,165	0	0	0	0	0	0	Continuing	TBD
1011 Legacy Model Transition (LMT)	0	382	0	0	0	0	0	0	Continuing	TBD
4566 Executive Agent for Air/Space Natural Environment	0	783	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	Continuing	TBD

Congress eliminated FY00 funding. The Air Force is in the process of consolidating small dollar Modeling, Simulation, and Analysis (MS&A) R&D programs (PE 38601F - 'Modeling & Simulation Support' Budget Activity 07 RDT&E (3600 appn.)) under PE 27601F - 'USAF Modeling and Simulation'. This will meet the intent of the House action to eliminate smaller PEs and provide a more cohesive, manageable USAF Modeling and Simulation development effort.

(U) **A. Mission Description**  
 This PE includes funding to support an organized growth and management of modeling and simulation (M&S) systems as the Air Force transitions from numerous legacy models and simulations to emerging DoD standard models and architecture. Numerous models currently exist and are being modified or developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as the Legacy Model Transition) funds the upgrades to selected R&D models through a board process. The selection process allows the board to influence the direction of legacy model development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance. The Executive Agent for Air & Space Natural Environment (ASNE) serves the M&S community as subject matter experts for ASNE M&S databases (including relevant standards), dynamic processes, and other applications. This enables the major Joint simulation systems (i.e., Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and Joint and Service component programs (i.e., Joint Strike Fighter (JSF), Ballistic Missile Defense Organization (BMDO), etc.) to represent the air and space natural environment rapidly, thoroughly, and consistently in a manner that promotes cost-effectiveness, ready access, interoperability, re-use, and confidence. Primary users will be unified commanders and service components for use in joint or service-specific exercises involving air, ground, sea, and space campaigns.

All FY02-07 RDT&E funding in PE: 38601F - 'Modeling and Simulation Support' will be transferred to PE: 27601F - 'USAF Modeling and Simulation'. In the interim, FY01 RDT&E funding in PE: 38601F is needed to continue integrating and developing numerous AF models and simulations into emerging DoD standard models and

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0308601F Modeling and Simulation Support</b>
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(U) **A. Mission Description Continued**  
 architecture. Added, FY01 PE: 38601 RDT&E funding provides modeling and simulation development efforts to digitally represent air and space natural environments integrated into the major Joint simulation systems (ie. Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS)).

(U) **B. Budget Activity Justification**  
 This program is in budget activity 7 - Operational System Development, because these funds support development activity for the AF as executive agent for air/space natural environment and continued development and integration of AF models in the Joint Model Transition (JMT) program.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	1,069	1,177	0	
(U) Appropriated Value	0	1,177		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions		-12		
(U) Adjustments to Budget Years Since FY 2001 PBR				
(U) Current Budget Submit/FY 2002 PBR	0	1,165	0	TBD
(U) <b><u>Significant Program Changes:</u></b> FY00 funding eliminated.				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0308601F Modeling and Simulation Support</b>					PROJECT <b>1011</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
1011 Legacy Model Transition (LMT)	0	382	0	0	0	0	0	0	Continuing	TBD	
<p>(U) <b><u>A. Mission Description</u></b>            Numerous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as Legacy Model Transition) supports the development and upgrade of R&amp;D models selected through a board process. The selection process allows the board to influence the direction of model development and integration for the modeling and simulation community. Emphasis is placed on joint applicability and acceptance. All FY02-07 RDT&amp;E funding in PE: 38601F will be transferred to PE: 27601F, titled 'USAF Modeling and Simulation'.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$151 Develop and integrate service analysis models into next generation joint models.            (U) \$151 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).            (U) \$80 Develop comprehensive Digital System Models (DSMs) to support Analysis of Alternatives (AoAs) for potential development programs. DSMs digitally represent weapon system platforms and are used to evaluate existing platform capabilities against new threats, ability to upgrade weapon systems to satisfy new requirements, etc. Results of AoAs using DSMs are used as a decision tool to determine future weapon system developments and/or upgrades.            (U) \$382 Total            The following net transactions are not reflected in the FY01 program total: SBIR= \$-36K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>            Project transferred to PE27601F for FY02</p>											
Project 1011			Page 3 of 8 Pages				Exhibit R-2A (PE 0308601F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0308601F Modeling and Simulation Support</b>				PROJECT <b>1011</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
N/A											
<b>(U) D. Acquisition Strategy</b>											
The funds are provided to the Office of Aerospace Studies (OAS), GSA-Heartland Contract, and the Sherikon Corp for the development of the Next Generation Mission Model (NGMM), Joint Model Transition Plan, and Analysis of Alternatives (AoA) studies for analysis models and digital system models. AF/XOCA will oversee a prioritization process for contract selection and development effort.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U) Fund Next Generation Mission Model project (Phase I completed 1QFY99)								X			
(U) Develop AoA studies for standard toolkit (Phase I completed 1QFY99)								X			
(U) Integrate models (P1 completed 4QFY99)									X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0308601F Modeling and Simulation Support			PROJECT 1011			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Contractor Support					0		306			
(U)	Program Management Support					0		30			
(U)	Travel					0		46			
(U)	Total					0		382			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Various	Various	Various			0	0	382		Continuing	TBD
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development					0	0	382		TBD	TBD
	Subtotal Support and Management										
	Subtotal Test and Evaluation										
	Total Project					0	0	382		TBD	TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0308601F Modeling and Simulation Support</b>					<b>PROJECT</b> <b>4566</b>		
<b>COST (\$ in Thousands)</b>		<b>FY 2000 Actual</b>	<b>FY 2001 Estimate</b>	<b>FY 2002 Estimate</b>	<b>FY 2003 Estimate</b>	<b>FY 2004 Estimate</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>
4566	Executive Agent for Air/Space Natural Environment	0	783	0	0	0	0	0	0	Continuing	TBD

**(U) A. Mission Description**

Air Force Director of Weather (AF/XOW) is designated as the DoD Modeling and Simulation Executive Agent (MSEA) for Air and Space Natural Environment (ASNE). This program provides funds for MSEA joint wargaming architecture, data base, model development support for Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and other joint M&S program offices. Primary users will be unified commanders and service components for use in joint exercises involving air, ground, sea, and space campaigns. All FY02-07 RDT&E funding in PE: 38601F will be reprogrammed in the FY02-07 POM cycle to PE: 27601F, titled 'USAF Modeling and Simulation'.

**(U) FY 2000 (\$ in Thousands)**

(U) \$0 No Activity  
(U) \$0 Total

**(U) FY 2001 (\$ in Thousands)**

(U) \$128 Space weather prototyping and integration  
(U) \$505 Production center model development  
(U) \$150 Air/Space/Land battlefield weather effects integration  
(U) \$783 Total

The following net transactions are not reflected in the FY01 program total: SBIR= \$-36K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

**(U) FY 2002 (\$ in Thousands)**

(U) \$0 No Activity  
(U) \$0 Total

**(U) B. Project Change Summary**

Project transferred to PE27601F for FY02

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE June 2001				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0308601F Modeling and Simulation Support</b>				PROJECT <b>4566</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
<b>(U) D. Acquisition Strategy</b>											
The Executive Agent for Air & Space Natural Environment will develop, prototype, and integrate the current suite of production and research grade models for Service and Joint distributed simulation models. The majority of efforts are executed and managed through the DoD laboratory system.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U) Architecture - ESG IOC (Completed 3QFY99)											
(U) Architecture - ESG FOC									X		
(U) Models - CSSMS FOC									X		
(U) Models - ISM IOC									X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0308601F Modeling and Simulation Support			PROJECT 4566			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Software Development					0		258			
(U)	Lab Overhead/Management					0		80			
(U)	Prototyping					0		420			
(U)	Travel					0		25			
(U)	Total					0		783			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Various	Various	Various			0	783			Continuing	TBD
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development						0	783			TBD
	Subtotal Support and Management										
	Subtotal Test and Evaluation										
	Total Project						0	783			TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0308699F Shared Early Warning System</b>						<b>PROJECT</b> <b>4838</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4838	Shared Early Warning System	11,113	4,180	3,697	4,041	3,343	3,450	3,521	3,581	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

This administration has not addressed FY2003-2007 requirements. All FY2003-2007 budget estimates included in this book are notional and subject to change.

**(U) A. Mission Description**

The Shared Early Warning System (SEWS) developed out of Presidential foreign policy initiatives beginning in 1996. Arrangements are negotiated with individual countries on a bilateral basis to provide selected region-specific missile warning information. These efforts were initially handled on an ad hoc basis through the Office of the Secretary of Defense, the Joint Staff, and the National Reconnaissance Office (NRO). Regional U.S. CINCs and other policy makers strongly support these efforts based on political and operational benefits. In December 1998, SEWS was established as a formal DoD program with the Air Force as the lead service and is centrally managed to eliminate the previous ad hoc approach. SEWS is comprised of: program management by the System Program Office (including the use of Federally Funded Research & Development Centers (FFRDC) and Systems Engineering and Technical Assistance contractors); design, development, and acquisition of a common SEWS architecture; coordination, maintenance, and sustainment of the existing systems hardware and software; design, development, test, and installation of a Joint Data Exchange Center (JDEC) in Moscow; development and maintenance of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System information; and site preparation/installation for additional systems, as required.

**(U) FY 2000 (\$ in Thousands)**

- (U) \$1,370** Began design, test, and installation of a Joint Data Exchange Center (JDEC) in Moscow to include a Pre-Launch Notification System
- (U) \$9,743** Began design and development of a common architecture (to include existing SEWS sites worldwide)
- (U) \$11,113** Total

**(U) FY 2001 (\$ in Thousands)**

- (U) \$1,478** Continue to develop a common SEWS architecture
- (U) \$501** Continue design, test, and installation of a JDEC and Pre-Launch Notification System in Moscow
- (U) \$2,201** Begin common architecture installation at additional SEWS sites (to include existing SEWS sites worldwide)
- (U) \$4,180** Total

The following net transactions are not reflected in the FY01 program total: BTR=+3,701K and SBIR=-290K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0308699F Shared Early Warning System</b>	PROJECT <b>4838</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$1,444 Continue to develop a common SEWS architecture</p> <p>(U) \$773 Complete design, test, and installation of a JDEC and Pre-Launch Notification System in Moscow</p> <p>(U) \$51 Implement Pre-Launch Notification System in additional countries as required</p> <p>(U) \$1,429 Install SEWS at additional sites as negotiated by SECDEF</p> <p>(U) \$3,697 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in Budget Activity 7 - Operational System Development, because it supports work on currently operating systems and/or upgrades still in engineering development</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">11,532</td> <td style="text-align: right;">4,219</td> <td style="text-align: right;">4,411</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">11,532</td> <td style="text-align: right;">4,219</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td></td> <td style="text-align: right;">-30</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-419</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td style="text-align: right;">-9</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: right;">-714</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">11,113</td> <td style="text-align: right;">4,180</td> <td style="text-align: right;">3,697</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b> FY02: \$.7M transferred into other appropriations within the SEWS program</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	11,532	4,219	4,411	TBD	(U) Appropriated Value	11,532	4,219			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-30			b. Small Business Innovative Research	-419				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions		-9			(U) Adjustments to Budget Years Since FY 2001 PBR			-714		(U) Current Budget Submit/FY 2002 PBR	11,113	4,180	3,697	TBD
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																					
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Project 4838	Page 2 of 5 Pages	Exhibit R-2 (PE 0308699F)																																																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308699F Shared Early Warning System				PROJECT 4838			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) Other APPN											
(U) OPAF (PE 38699F, Comm Elect Mods, P-1 Line Item #72, BA 3)			200	1,700	200	300	1,600	300	Continuing	TBD	
<b>(U) E. Acquisition Strategy</b>											
The Integrated Space Command and Control (ISC2) contract is employed as an evolutionary spiral development acquisition strategy that enables rapid development and fielding of an initial capability in response to validated requirements. SEWS uses commercial off-the-shelf (COTS) items and employs a data system already in use by DoD. Implementation within the ISC2 contract offers benefits to SEWS by taking advantage of the commonality between SEWS and the missile warning mission already included as part of ISC2. This synergy encourages the use of a common system support infrastructure and reuse of software components. The ISC2 contract is a performance-oriented contract vehicle that drives Total System Performance Responsibility to industry.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
				1	2	3	4	1	2	3	4
(U) Center for Y2K Strategic Stability (CY2KSS) IOC				*							
(U) ISC2 Contract Award (1)					*		*				
(U) Complete common system architecture design (2)									X		
(U) Install Pre-Launch Notification System for JDEC (3)									X		
(U) Incremental development of common system architecture					*		*	*	X		X
(U) Standardization of additional sites with developed architecture									X		X
(1) - ISC2 initial contract was awarded in Feb 00 with two contractors followed by a rolling down select with final contract awarded in Sep 00 to Lockheed Martin											
(2) - Completion of common system architecture design slipped from 3rd quarter FY00 to 4th quarter FY01 because the Operational Requirements Document and the Concept of Operations have not been finalized.											
(3) - Pre-Launch Notification System for JDEC delayed pending US-Russian agreement on taxes, liabilities, and customs issues											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0308699F Shared Early Warning System			PROJECT 4838			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Various Contracts					7,883		2,744		1,499	
(U)	JDEC					1,370		501		1,580	
(U)	System Engineering					1,429		729		430	
(U)	Program Management Administration (PMA)					431		206		188	
(U)	Total					11,113		4,180		3,697	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin	CP/AF	Sep 00	N/A	N/A	0	2,150	1,450	1,458	Continuing	TBD
	SPAWAR	MIPR	Nov 99	N/A	N/A	0	447	75	0	0	522
	NRO	MIPR	Dec 99	N/A	N/A	0	3,270	0	180	Continuing	TBD
	Various Ctrs/Gov Agencies	MIPR/AF	Nov 99	N/A	N/A	0	2,736	1,086	599	Continuing	TBD
<u>Support and Management Organizations</u>											
	FFRDC	CPFF	Jan 00	N/A	N/A	0	1,065	245	125	Continuing	TBD
	A&AS	C/R	Apr 00	N/A	N/A	0	778	980	985	Continuing	TBD
	PMA	N/A	Jan 00	N/A	N/A	0	667	206	188	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	AFSPC 17th Test Squadron	AF	Sep 00	N/A	N/A	0		138	162	Continuing	TBD
<b>(U) Government Furnished Property:</b>											
	<u>Contract</u>	<u>Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Item Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE	
BUDGET ACTIVITY							June 2001	
07 - Operational System Development				PE NUMBER AND TITLE			PROJECT	
				0308699F Shared Early Warning System			4838	
<b>(U) Government Furnished Property Continued:</b>								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Product Development Property</u>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
Subtotal Product Development				0	8,603	2,611	2,237	TBD
Subtotal Support and Management				0	2,510	1,431	1,298	TBD
Subtotal Test and Evaluation				0		138	162	TBD
Total Project				0	11,113	4,180	3,697	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS					PROJECT 4726	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4726	Avionics Modernization Program (AMP)	8,561	59,941	80,533	159,402	100,890	88,415	66,733	27,990	315,935	908,400
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	8	15

Note: FY03-07 budget numbers do not reflect the DoD strategic review results. Following contract award, the C-130 AMP RDT&E and procurement funding profile (FY04-07) will be re-aligned to accurately reflect the winning contractor's funding requirements.

(U) **A. Mission Description**

The C-130 Avionics Modernization Program (AMP) consolidates and installs the mandated DOD Navigation/Safety mods, the Global Air Traffic Management (GATM) systems and the C-130 Broad Area Review requirements on the AF's 519 C/AC/EC/HC/LC/MC-130s that are not being replaced with new C/EC/WC-130Js. These mandated mods are incorporated in conjunction with various other Reliability, Maintainability, and Sustainability (RM&S) upgrades to include: TCAS, TAWS, replacement of APN-59 & APQ-175 radars, N-1/C-12 compass, dual autopilots, dual flight management systems and HF/UHF/VHF datalink to constitute C-130 AMP. AMP will give the AF's 519 C/AC/EC/HC/LC/MC-130s complete access to the GATM-controlled international air space.

The USAF C-130 fleet consists of 15 different mission design series (MDS) to be modified by the AMP. Within each of these MDSs are multiple variants (C-130H2, etc.) to be modified by AMP. These multiple different models and cockpit configurations create significant logistics support and aircrew training inefficiencies. Also, these differences greatly complicate unit/aircraft interoperability at forward operating locations. C-130 AMP standardizes the cockpit configurations and avionics for these different variants by installing a core avionics package and a single cockpit configuration, eliminating many of these significant logistics, interoperability and training problems. (Note: The new C/EC/WC-130J aircraft are not included in this C-130 AMP program).

The AMP program is fully funded through FY09 and modifies the majority of the fleet (519 programmed) during this period. Additional funds will be required in FY10 and beyond. The funding shown here and in the C-130 AMP procurement documentation is for AMP and those portions of USSOCOM's Common Avionics Architecture for Penetration (CAAP) which are incorporated into AMP. SOCOM's CAAP-unique portion is funded with MFP-11 funds which are not shown here.

The Boeing Company won this competition in June 01. Anticipate contract award in Jul/Aug 01. Their baseline program provides the NRE for all the C-130 variants and modifies the majority of the fleet. Each variant or group of variants will require a specific kit development and test. Then, each will proceed through development and production serially. This waterfall approach will result in an orderly development and production sequencing for the 15 different kits required for the C-130 fleet.

Boeing will conduct a Training System Requirements Analysis (TSRA), beginning in FY01. From this TSRA, an AF-fleetwide training system will be developed for the AMP/CAAP-modified fleet. This will include upgrading all the AC/C/EC/HC/LC/MC-130 Weapons Systems Trainers (WSTs) to incorporate the AMP/CAAP modifications.

Development activities in FY01-02 will focus on two areas: AMP architecture and kit development for the first Combat Delivery aircraft (C-130H2) and the first special mission aircraft (MC-130H), as well as software development of the Common Avionics Architecture for Penetration (CAAP) capabilities, which will be

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0401115F C-130 AIRLIFT SQUADRONS</b>	<b>4726</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>                      integrated into the special mission aircraft concurrent with AMP.                      Live-fire testing will encompass a number of systems which may include the related AMP avionics being installed under this mod, external fuel tank, engine and nacelle, etc.</p>		
<p>(U) <u>FY 2000 (\$ in Thousands)</u></p>		
(U) \$1,667	AC-130 Leading Edge funding added by Congress.	
(U) \$6,894	Program office support (A&AS, SPO, TDY, training and supplies).	
(U) \$8,561	Total	
<p>* Note: Planned AMP contract date was Mar 00. Contract award slipped to FY01 because user changed ORD requirements and OSD designated AMP an ACAT-ID program. These additional ORD requirements (e.g., removing the navigator from Combat Delivery aircraft) and the increased ACAT-1D reporting requirements, forced a program schedule slip. Result: AMP didn't go on contract in FY00 and Congress rescinded \$30M from the FY00 3600 AMP line in the FY01 Appropriations Act.</p>		
<p>(U) <u>FY 2001 (\$ in Thousands)</u></p>		
(U) \$52,441	Award EMD contract. Begin design and software development. This includes beginning detailed group A & B design series, hardware/software development of crew station modules/computer simulation, initiate design of system integration lab (SIL), begin the TSRA and begin CAAP's Risk Mitigation testing.	
(U) \$7,500	Program office support (A&AS, SPO, TDY, SETA contract support, training and supplies).	
(U) \$59,941	Total	
<p>Note: The following net transactions are not reflected in the FY01 program total shown above: BTR= -\$6501K, and SBIR= -\$1,840K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>		
<p>(U) <u>FY 2002 (\$ in Thousands)</u></p>		
(U) \$73,033	Continue design and software development. This includes continuing detailed group A & B design series, hardware/software development of crew station modules/computer simulation, design of system integration lab (SIL), development of training system, and continue CAAP Risk Mitigation testing.	
(U) \$7,500	Program office support (A&AS, SPO, TDY, SETA contract support, training and supplies).	
(U) \$80,533	Total	
<p>(U) <b><u>B. Budget Activity Justification</u></b>                      C-130 Avionics Modernization Program (AMP): This project is in Budget Activity 7, Operational Systems Development as it is an upgrade to an existing weapon system.</p>		
Project 4726	Page 2 of 6 Pages	Exhibit R-2 (PE 0401115F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0401115F C-130 AIRLIFT SQUADRONS</b>			<b>4726</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>						
(U)	Previous President's Budget (FY 2001 PBR)	40,123	60,496	80,252	908,400						
(U)	Appropriated Value	40,123	60,496								
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions										
	b. Small Business Innovative Research										
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram										
	e. Rescissions	-30,159	-555								
(U)	Adjustments to Budget Years Since FY 2001 PBR	-1,403		281							
(U)	Current Budget Submit/FY 2002 PBR	8,561	59,941	80,533	908,400						
<b>(U) Significant Program Changes:</b>											
While requirements were being finalized in late 1999, AMP was officially designated an ACAT ID program. The revised ORD requirements (e.g., removing the navigator) and increased ACAT ID reporting requirements forced a slip in the schedule. Hence, the total funding provided for FY 00 was not required, so \$30M of the FY 00 RDT&E funds were rescinded by the Appropriations Conference in the FY01 Appropriations Act.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	1,667									1,667
(U)	SPO Support	6,894	7,500	7,500	7,000	7,000	7,000	7,000	7,000	Continuing	Continuing
(U)	Product Development/ ECOs/ T&E/ GFE		52,573	72,737	154,632	93,117	80,648	59,089	20,689	Continuing	Continuing
(U)	Other APPN									Continuing	Continuing
(U)	PE 41115F, AMP, BP1100				100,117	87,648	66,089	27,689		Continuing	Continuing
Note: \$1.667M, shown above in FY00, was a Congressional add for AC-130 Leading Edge research, which is not part of AMP.											
<b>(U) E. Acquisition Strategy</b>											
The EMD contract will be a competitively awarded Cost Plus Award Fee contract to develop AMP kits for the 15 MDS within the AF AC/C/EC/HC/LC/MC-130 fleet. A training system will be an option under the AMP contract.											
Project 4726				Page 3 of 6 Pages				Exhibit R-2 (PE 0401115F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS					PROJECT 4726			
<b>(U) F. Schedule Profile</b>													
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>	
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	C-130 AMP Contract Award										X		
(U)	C-130 Systems Requirements Review											X	
(U)	C-130 Preliminary Design Review												
(U)	C-130 CAAP PDR												
	C-130 PDR scheduled for 2nd Qtr of FY03; C-130 CAAP PDR scheduled for 3rd Qtr FY03												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS			PROJECT 4726		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	C-130 AMP EMD (see note below)				1,667		52,441		73,033	
(U)	Program Office Support				6,894		7,500		7,500	
(U)	GFE									
(U)	Test									
(U)	ECOs									
(U)	Total				8,561		59,941		80,533	
Note: \$1.667M in FY00 EMD was Congressionally-added for AC-130 Leading Edge. This is not part of AMP.										
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Prime Contractor	CPAF	FY01/02				1,667	52,441	73,033	703,365	830,506
Note: The Boeing Company won the competition for this program,; however, the contract has not yet been signed \$1.667M in FY00 is Congressional add for AC-130 Leading Edge, not AMP.										
<u>Support and Management Organizations</u>										
Program Support Office	N/A	N/A				6,894	7,500	7,500	56,000	77,894
<u>Test and Evaluation Organizations</u>										
TBD										
(U) <b><u>Government Furnished Property:</u></b>										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE		
							June 2001		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development				0401115F C-130 AIRLIFT SQUADRONS			4726		
<b>(U) Government Furnished Property Continued:</b>									
	<u>Contract</u>	<u>Award or</u>							
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	
<u>Description</u>	<u>Vehicle</u>							<u>Program</u>	
<u>Product Development Property</u>									
TBD									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
TBD									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	
								<u>Program</u>	
Subtotal Product Development					1,667	52,441	73,033	703,365	830,506
Subtotal Support and Management					6,894	7,500	7,500	56,000	77,894
Subtotal Test and Evaluation									
Total Project					8,561	59,941	80,533	759,365	908,400
Note: The \$1.667M, shown in FY00 Product Development is for AC-130 Leading Edge research, which is not C-130 AMP.									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	55,873	91,681	166,508	226,968	299,511	171,030	0	0	0	1,052,082
4495 Avionics Modernization Program	37,180	44,489	64,240	10,098	0	0	0	0	0	196,518
4835 Reliability Enhancement & Reengining Program	18,693	47,192	102,268	216,870	299,511	171,030	0	0	0	855,564
Quantity of RDT&E Articles	0	0	0	0	2	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**

674495: Avionics Modernization Program (AMP): Phase I of an Air Force planned two-phase modernization effort for the C-5. It implements Global Air Traffic Management (GATM)/Nav Safety capability and the All Weather Flight Control System (AWFCS). It installs Deputy Secretary of Defense (DEPSECDEF) directed Navigation Safety equipment: Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS), reducing the threat of mid-air collisions and controlled flight into terrain. GATM capability, which encompasses communications, navigation, and surveillance requirements, will be incorporated into the aircraft to meet current and future International Civil Aviation Organization (ICAO)/Federal Aviation Administration (FAA) requirements and to progress towards 'free flight' capability. The AWFCS portion of AMP replaces low reliability Line Replaceable Units (LRUs) in the automatic flight control system and replaces aging, non-supportable mechanical instruments in the engine and flight systems. Connectivity to Mobility command and control capabilities will also be incorporated in the AMP design. The TCAS portion is accelerated to complete ahead of the rest of the AMP mod (by FY02). Two AMP RDT&E test articles are funded in FY99 for flight test and installed in FY02.

674835: Reliability Enhancement and Reengining Program (RERP): Phase II of an Air Force planned two-phase modernization effort for the C-5. It improves aircraft reliability, maintainability and availability. RERP will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure reliability) while reducing total ownership costs (TOC). This effort centers around replacing TF-39 engines with a more reliable, commercially available (COTS) turbofan engine with increased takeoff thrust and stage three noise compliance. These new engines (along with new pylons, wing attach fittings and upgrades, and thrust reversers) increase payload capability and access to Global Air Traffic Management airspace. It also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals. Additionally, numerous other system modifications will be performed (e.g. auxiliary power units, electrics, hydraulics, fuel system, fire suppression system, pressurization/air conditioning system, landing gear, and airframe) to

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**040119F C-5 Airlift Squadrons**

(U) **A. Mission Description Continued**

increase fleet availability and reduce total ownership costs. Two RDT&E test articles are funded in FY04 for flight test and installed in FY05.

(U) **B. Budget Activity Justification**

674495: Avionics Modernization Program (AMP): This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

674835: Reliability Enhancement and Reengining Program (RERP): This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	59,122	92,530	135,619	448,565
(U) Appropriated Value	60,041	92,530		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-594			
b. Small Business Innovative Research	-1,635			
c. Omnibus or Other Above Threshold Reprogram	0			
d. Below Threshold Reprogram	-1,704			
e. Rescissions	-235	-849		
(U) Adjustments to Budget Years Since FY 2001 PBR	0	0	30,889	603,517
(U) Current Budget Submit/FY 2002 PBR	55,873	91,681	166,508	1,052,082

(U) **Significant Program Changes:**

Since FY01 PB:

C-5 AMP:

Air Mobility Command and the C-5 AMP Cockpit Working Group have identified 3 engineering change proposals (ECPs) to the System Program Office: 1. Automatic Flight Controls System (AFCS) design, 2. Caution Warning Advisory (CWA) light design, 3. Mobility 2000 (M2K) Command and Control connectivity. Result: Increased inflight safety, increased capability and decreased pilot workload.

- Program realigned \$2.95M (FY02) and \$9.795M (FY03) from procurement to RDT&E
- \$14.5M FY02 funds added to program to address increased requirements as a result of in-scope changes from engineering change proposals
- \$3.758M and \$3.999M FY 01 RERP funds re-aligned to AMP to fund additional in-scope changes associated with engineering changes.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	07 - Operational System Development	
PE NUMBER AND TITLE	0401119F C-5 Airlift Squadrons	
<p>(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u></p> <p>(U) <u>Significant Program Changes Continued:</u></p> <p>C-5 RERP: - RERP EMD efforts were delayed in FY01 and are now planned for start in FY02. Accordingly, the program realigned \$12.6M (FY02), \$113.7M (FY03), \$278.4M (FY04) and \$169.5M (FY05) from procurement to RDT&amp;E</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons					PROJECT 4495	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4495 Avionics Modernization Program	37,180	44,489	64,240	10,098	0	0	0	0	0	196,518	
FY03-FY07 budget numbers do not reflect the DoD strategic review results.											
(U) <b><u>A. Mission Description</u></b> 674495: Avionics Modernization Program (AMP): Phase I of an Air Force planned two-phase modernization efforts for the C-5. It implements Global Air Traffic Management (GATM)/Nav Safety capability and the All Weather Flight Control System (AWFCS). It installs Deputy Secretary of Defense (DEPSECDEF) directed Navigation Safety equipment: Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS), reducing the threat of mid-air collisions and controlled flight into terrain. GATM capability, which encompasses communications, navigation, and surveillance requirements, will be incorporated into the aircraft to meet current and future International Civil Aviation Organization (ICAO)/Federal Aviation Administration (FAA) requirements and to progress towards 'free flight' capability. The AWFCS portion of AMP replaces low reliability Line Replaceable Units (LRUs) in the automatic flight control system and replaces aging, non-supportable mechanical instruments in the engine and flight systems. Connectivity to Mobility command and control capabilities will also be incorporated in the AMP design. The TCAS portion is accelerated to complete ahead of the rest of the AMP mod (by FY02). Two AMP RDT&E test articles are funded for flight test and installed in FY02.											
(U) <b><u>FY 2000 (\$ in Thousands)</u></b>											
(U) \$7,100	System Engineering / Program Management										
(U) \$21,996	AMP Kit Design / Development										
(U) \$5,200	Prototype Fabrication / Install										
(U) \$2,884	Mission Support										
(U) \$37,180	Total										
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>											
(U) \$7,000	System Engineering / Program Management										
(U) \$24,100	AMP Kit Design / Development										
(U) \$10,200	Prototype Fabrication / Install										
(U) \$3,189	Mission Support										
(U) \$44,489	Total										
The following transactions are not reflected in the FY01 program total: BTR = -700K and SBIR = -3.759M. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.											
Project 4495			Page 4 of 13 Pages				Exhibit R-2A (PE 0401119F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401119F C-5 Airlift Squadrons</b>			PROJECT <b>4495</b>			
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>										
(U)	\$14,300	System Engineering/Program Management								
(U)	\$27,491	AMP Kit Design/Development								
(U)	\$12,950	Prototype Fabrication/Install								
(U)	\$3,699	Mission Support								
(U)	\$5,800	Flight Test								
(U)	\$64,240	Total								
<b>(U) <u>B. Project Change Summary</u></b>										
Since FY01 PB:										
C-5 AMP:										
Air Mobility Command and the C-5 AMP Cockpit Working Group have identified 3 engineering change proposals (ECPs) to the System Program Office: 1. Automatic Flight Controls System (AFCS) design, 2. Caution Warning Advisory (CWA) light design, 3. Mobility 2000 (M2K) Command and Control connectivity. Result: Increased inflight safety, increased capability and decreased pilot workload.										
<ul style="list-style-type: none"> <li>- Program realigned \$2.95M (FY02) and \$9.795M (FY03) from procurement to RDT&amp;E</li> <li>- \$14.5M FY02 funds added to program to address increased requirements as a result of in-scope changes from engineering change proposals</li> <li>- \$3.758M and \$3.999M FY 01 RERP funds re-aligned to AMP to fund additional in-scope changes associated with engineering changes.</li> </ul>										
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN									
(U)	PE# 0401119F/C-5 Airlift Squadrons									
(U)	Aircraft Procurement, AF, BA-5, C-5 Mods, Avionics Modernization Program, BP-11	22,328	33,003	90,531	125,067	80,524	12,062		0	363,515
(U)	PE# 0401119F/C-5 Airlift									
<div style="display: flex; justify-content: space-between;"> <span>Project 4495</span> <span>Page 5 of 13 Pages</span> <span>Exhibit R-2A (PE 0401119F)</span> </div>										

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>040119F C-5 Airlift Squadrons</b>	<b>PROJECT</b> <b>4495</b>
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
Squadrons										
(U) Aircraft Procurement, AF, BA-5, C-5 Mods, Reliability Enhancement and Reengining Program, BP-11	0	0	0	15,034	40,343	319,406	728,877	746,442	Continuing	TBD

(U) **D. Acquisition Strategy**

Avionics Modernization Program: Program acquisition strategy establishes a single integrating contractor (Lockheed Martin Aero) to modify and qualify integrated Commercial Off-the-Shelf (COTS) line replaceable units (LRU) and software to meet C-5 performance and Global Air Traffic Management (GATM) requirements, update existing C-5 engineering and technical data, develop interface control specifications based on performance requirements, prototype the new system, and support ground and flight testing. AMP contract awarded to the Lockheed Martin Aero /Honeywell team on 22 January 1999. \$9.7M in FY99 procurement was added in the FY00 PB to accelerate Traffic Alert and Collision Avoidance System (TCAS) installations ahead of the rest of AMP. TCAS installs scheduled to complete in FY02.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Strategy Panel (FY97/4)												
(U) Contract Award (FY99/1)												
(U) Preliminary Design Review (PDR)					*							
(U) Critical Design Review (CDR)								*				
(U) TCAS Kit Installations Start				*								
(U) TCAS Kit Installations End												X
(U) AMP Prototype Installation Start										X		
(U) First Flight / Developmental Test Start												X
(U) Production Installation Start (FY03/4)												
(U) Prod Installation Complete (FY06/4)												

\* = completed event  
X = planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 040119F C-5 Airlift Squadrons			PROJECT 4495			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	System Engineering / Program Management					7,100		7,000		14,300	
(U)	AMP Kit Design / Development					21,996		24,100		27,491	
(U)	Prototype Fabrication / Install					5,200		10,200		12,950	
(U)	Mission Support					2,884		3,189		3,699	
(U)	Flight Test					0		0		5,800	
(U)	Total					37,180		44,489		64,240	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin Aero	C/CPAF	Jan 99		165,153	36,425	34,296	41,300	54,741	3,742	170,504
<u>Support and Management Organizations</u>											
	WR-ALC/LA				7,170	2,370	1,200	1,200	1,200	1,200	7,170
	ASC/GRA				8,044	1,716	1,684	1,989	2,499	156	8,044
<u>Test and Evaluation Organizations</u>											
	418 Test Squadrn (Edwards AFB)	AFFTC			10,800	0	0	0	5,800	5,000	10,800
(U) <b><u>Government Furnished Property:</u></b>											
	<u>Item Description</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>			<b>0401119F C-5 Airlift Squadrons</b>		<b>4495</b>	
<b>(U) <u>Government Furnished Property Continued:</u></b>						
<u>Support and Management Property</u>						
N/A						
<u>Test and Evaluation Property</u>						
N/A						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						
Subtotal Product Development		36,425	34,296	41,300	54,741	3,742
Subtotal Support and Management		4,086	2,884	3,189	3,699	1,356
Subtotal Test and Evaluation		0	0	0	5,800	5,000
Total Project		40,511	37,180	44,489	64,240	10,098
						196,518

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons					PROJECT 4835	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4835	Reliability Enhancement & Reengining Program	18,693	47,192	102,268	216,870	299,511	171,030	0	0	0	855,564
FY03-FY07 budget numbers do not reflect the DoD strategic review results.											
(U) <b><u>A. Mission Description</u></b>											
674835: Reliability Enhancement and Reengining Program (RERP): Phase II of an Air Force planned two-phase modernization effort for the C-5. It improves aircraft reliability, maintainability and availability. RERP will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure reliability) while reducing total ownership costs (TOC). This effort centers around replacing TF-39 engines with a more reliable, commercially available (COTS) turbofan engine with increased takeoff thrust and stage three noise compliance. These new engines (along with new pylons, wing attach fittings and upgrades, and thrust reversers) increase payload capability and access to Global Air Traffic Management airspace. It also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals. Additionally, numerous other system modifications will be performed (e.g. auxiliary power units, electrics, hydraulics, fuel system, fire suppression system, pressurization/air conditioning system, landing gear, and airframe) to increase fleet availability and reduce total ownership costs. Two RDT&E test articles are funded in FY04 for flight test and installed in FY05.											
(U) <b><u>FY 2000 (\$ in Thousands)</u></b>											
(U)	\$7,000	System Engineering / Program Management									
(U)	\$10,400	RERP Kit Design / Development									
(U)	\$1,293	Mission Support									
(U)	\$18,693	Total									
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>											
(U)	\$12,180	System Engineering / Program Management									
(U)	\$31,238	RERP Kit Design / Development									
(U)	\$0	Prototype Fabrication / Install									
(U)	\$3,774	Mission Support									
(U)	\$47,192	Total									
The following transactions are not reflected in the FY01 program total: BTR = -700K and SBIR = -3.759M. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.											
Project 4835				Page 9 of 13 Pages				Exhibit R-2A (PE 0401119F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE				
							June 2001				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				040119F C-5 Airlift Squadrons			4835				
(U) <b><u>A. Mission Description Continued</u></b>											
(U) <u>FY 2002 (\$ in Thousands)</u>											
(U)	\$25,211	System Engineering/Program Management									
(U)	\$55,398	RERP Kit Design/Development									
(U)	\$17,000	Prototype Fabrication/Install									
(U)	\$4,659	Mission Support									
(U)	\$102,268	Total									
(U) <b><u>B. Project Change Summary</u></b>											
Since FY01 PB:											
- RERP EMD efforts were delayed in FY01 and are now planned for start in FY02. Accordingly, the program realigned \$12.6M (FY02), \$113.7M (FY03), \$278.4M (FY04) and \$169.5M (FY05) from procurement to RDT&E.											
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E										
(U)	Other APPN										
(U)	PE# 0401119F/C-5 Airlift Squadrons										
(U)	Aircraft Procurement, AF, BA-5, C-5 Mods, Reliability Enhancement and Reengining Program, BP-11	0	0	0	15,034	40,343	319,406	728,877	746,442	Continuing	TBD
(U)	PE# 0401119F/C-5 Airlift Squadrons										
(U)	Aircraft Procurement, AF, BA-5, C-5 Mods, Avionics Modernization Program, BP-11	22,328	33,003	90,531	125,067	80,524	12,062		0	363,515	
Project 4835											
Page 10 of 13 Pages											
Exhibit R-2A (PE 0401119F)											

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>040119F C-5 Airlift Squadrons</b>	PROJECT <b>4835</b>
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(U) **D. Acquisition Strategy**  
 Reliability Enhancement and Reengining Program (RERP): Approved acquisition strategy calls for the modification of the 126 Aircraft C-5 Fleet (50 B-Models first); a separate MS III decision will be made for the 76 A-Models if improvements to reliability and fleet availability can be demonstrated on the B-Models. Program acquisition strategy is to consider every opportunity to utilize commercially available components and processes to modernize C-5 products and processes to meet or exceed required system performance and support, so as to renew the weapon system until 2040. The program acquisition strategy also seeks to construct a government/industry 'partnership' to identify solutions, assign responsibility and execute to achieve AMC requirements. RERP will use fleet availability, ownership cost and system performance to balance solutions against program cost. Lockheed Martin Aero has been selected as the prime contractor through a sole source arrangement. Lockheed has selected General Electric (Powerplant) and Goodrich (Pylon) as the major subcontractors.

(U) **E. Schedule Profile**

	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	
(U) Acquisition Strategy Panel (ASP)	*								
(U) Pre-EMD Contract Award		*							
(U) Milestone II / DAB								X	
(U) EMD Contract Award								X	
(U) EMD Start								X	
(U) Preliminary Design Review (PDR)(FY03/1)									
(U) Critical Design Review (CDR)(FY04/1)									
(U) First Protoype Flight (FY05/1)									
(U) EMD Complete (FY06/1)									
(U) LRIP Kit Installations Begin (FY06/2)									
(U) MS IIIA (FY07/1 - B Model Prod Decision)									
(U) MS IIIB (FY09/1 - A Model Prod Decision)									

\* = completed event  
 X = planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 040119F C-5 Airlift Squadrons			PROJECT 4835			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	System Engineering / Program Management				7,000		12,180			25,211	
(U)	RERP Kit Design / Development				10,400		31,238			55,398	
(U)	Prototype Fabrication / Install				0					17,000	
(U)	Mission Support				1,293		3,774			4,659	
(U)	Total				18,693		47,192			102,268	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin Aero	FFP	Feb 00		18,693	0	17,400	43,418	0	0	60,818
	(Pre-EMD)										
	Lockheed Martin Aero (EMD)CPAF		Pending (Dec 01)		777,678	0	0	0	97,609	652,433	750,042
<u>Support and Management Organizations</u>											
	WR-ALC/LA				7,200	0	0	1,200	1,200	4,800	7,200
	ASC/GRA				27,504	0	1,293	2,574	3,459	20,178	27,504
<u>Test and Evaluation Organizations</u>											
	418 Test Squadron (Edwards AFB)		AFFTC		10,000	0	0	0	0	10,000	10,000
<b>(U) Government Furnished Property:</b>											
	<u>Contract</u>	<u>Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Item Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE	
BUDGET ACTIVITY							June 2001	
07 - Operational System Development				PE NUMBER AND TITLE			PROJECT	
				040119F C-5 Airlift Squadrons			4835	
<b>(U) Government Furnished Property Continued:</b>								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
<u>Product Development Property</u>								
N/A								
<u>Support and Management Property</u>								
N/A								
<u>Test and Evaluation Property</u>								
N/A								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
Subtotal Product Development				0	17,400	43,418	97,609	652,433
Subtotal Support and Management				0	1,293	3,774	4,659	24,978
Subtotal Test and Evaluation				0	0	0	0	10,000
Total Project				0	18,693	47,192	102,268	687,411
								855,564

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**June 2001**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0401130F C-17 Aircraft**

COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	153,252	174,821	110,619	108,434	110,734	113,023	110,149	111,283	0	7,012,614
2569 C-17 Aircraft	153,252	129,938	110,619	108,434	110,734	113,023	110,149	111,283	0	6,967,731
4886 Large Aircraft Infrared Counter Measures (LAIRCM)	0	44,883	0	0	0	0	0	0	0	44,883
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

**(U) A. Mission Description**

Airlift provides a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. The load options include troops and/or outsized/oversized/palletized cargo. The C-17 is designed to provide direct delivery of those cargo loads to austere airfields, as close as possible to the user's specified final destination. The C-17 will also use standard airfields and delivery modes. The C-17 is specifically designed to provide U.S. combat forces maximum flexibility in the selection of landing sites and support of ground forces after landing. Consequently the C-17 will land with up to 160,000 lbs payload on austere runways as small as 3,000 feet by 90 feet. The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide transport and tanker aircraft an effective, active defense against shoulder-launched IR missiles.

**(U) B. Budget Activity Justification**

This program is budget activity 7, Operational System Development, because the program has completed Milestone III and is continuing producibility and performance improvements to support full-rate production and increase the operational capability of the C-17 through programmed modifications.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
<b>07 - Operational System Development</b>		<b>0401130F C-17 Aircraft</b>			
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	159,019	176,439	139,443	6,845,199
(U)	Appropriated Value	160,918	176,439		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,026	0		
	b. Small Business Innovative Research	-4,651			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-1,360			
	e. Rescissions	-629	-1,618		
(U)	Adjustments to Budget Years Since FY 2001 PBR			-28,824	167,415
(U)	Current Budget Submit/FY 2002 PBR	153,252	174,821	110,619	7,007,900
(U)	<u>Significant Program Changes:</u>				
	A second project, 674886, was added to the C-17 Program Element for the Large Aircraft Infrared Countermeasures (LAIRCM). FY01 remains as appropriated. All FY 02 and later funds for LAIRCM were ZBT'ed to PE 41134F (\$29.446M in FY02).				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0401130F C-17 Aircraft</b>					PROJECT <b>2569</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
2569     C-17 Aircraft	153,252	129,938	110,619	108,434	110,734	113,023	110,149	111,283	0	6,962,919	
<p>FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. Additional airlift capability is needed for rapid deployment of combat forces in support of national objectives. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. The C-17 provides a vast increase in overall airlift capability necessary to replace and exceed the capabilities lost from retiring the aging C-141 fleet from the Air Force inventory. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during airland operations. The C-17 will perform the airlift mission well into this century. RDT&amp;E efforts support producibility enhancements and performance improvements, including correction of Operational Test &amp; Evaluation (OT&amp;E) deficiencies.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$98,058            Performance Improvement Development &amp; Testing                      (U) \$28,755            Systems Engineering / Program Management                      (U) \$15,394            Contractor System Test &amp; Evaluation                      (U) \$11,045            Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test                      (U) \$153,252            Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$73,616            Performance Improvement Development &amp; Testing                      (U) \$29,080            Systems Engineering / Program Management                      (U) \$16,242            Contractor System Test &amp; Evaluation                      (U) \$11,000            Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test                      (U) \$129,938            Total</p> <p>The following transactions are not reflected in the FY01 program total: SBIR, -\$4,961K and a -\$1,850K BTR. These transactions are not reflected in other sections of the R-Docs where FY01 totals are shown.</p>											
Project 2569			Page 3 of 12 Pages				Exhibit R-2A (PE 0401130F)				

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401130F C-17 Aircraft</b>	<b>PROJECT</b> <b>2569</b>
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

(U) \$55,071	Performance Improvement Development & Testing
(U) \$30,400	Systems Engineering / Program Management
(U) \$15,148	Contractor System Test & Evaluation
(U) \$10,000	Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test
(U) \$110,619	Total

(U) **B. Project Change Summary**

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) APAF, MYP, BA02, PE0401130F	2,982,951	2,423,380	3,081,375	2,588,899	1,214,146	1,933,331	7,680	7,689		14,239,451
(U) APAF, ICS, PE0401130F	396,600	411,293	463,663	444,316	308,197	328,160	368,983	355,697		3,076,909
(U) APAF, A/C Mods, BA05, PE0401130F	78,789	96,236	105,908	114,938	182,043	250,466	251,051	269,093		1,348,524
(U) MilCon, Facilities, PE0401130F	26,100	15,689	41,450	0	0	0				83,239
(U) Construction (Planning and Design), PE091211F			1,150							1,150

(U) **D. Acquisition Strategy**

The C-17 Acquisition Strategy is based on five separate contracts to support the entire scope of the C-17 weapon system. These five contracts are: 1) a multi-year procurement (MYP) aircraft contract (to economically purchase the full complement of production aircraft) - (APAF); 2) a Producibility Enhancement and Performance Improvement (PE/PI) contract (to develop cost reduction changes, capability enhancements, and design fixes to service-revealed problems) - (RDT&E, APAF); 3) a Flexible Sustainment (field support) contract (to support the current and future fielded aircraft) - (APAF); 4) a MYP engine contract (for Government Furnished Equipment [GFE] engines) - (APAF); and 5) a set of simulator and training contracts: two aircrew training systems (ATS) contracts (for aircrew simulators, training & concurrency upgrades), and a maintenance training device contract (for devices & concurrency upgrades of same) - (APAF).

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0401130F C-17 Aircraft</b>	PROJECT <b>2569</b>
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(U) **D. Acquisition Strategy Continued**  
 The Congressionally-mandated Mobility Requirements Study (MRS), initially forwarded to Congress on 23 Jan 92 and updated on 28 Mar 95, validated the need for the C-17 aircraft. Two C-17 Defense Acquisition Board (DAB) decisions, contained in the 3 Nov 95 and 1 Feb 96 USD(A&T) Acquisition Decision Memoranda (ADMs), directed the Air Force to proceed with a 120-aircraft production program and pursue a multi-year procurement for the last 80 aircraft. The FY96 Supplemental Appropriations Act and FY97 Defense Appropriations Act approved a 7-year MYP program. The Air Force is proceeding with an 80-aircraft MYP program (along with engines to support them) to complete a 120-aircraft total purchase at the maximum affordable rate (FY97-03 Quantity: 8-9-13-15-12-15-8), beginning with the economic order quantity (EOQ) funding in FY96. Seventeen additional C-17s have been programmed at the end of the 80-aircraft MYP (FY03 +4, FY04 +5, FY05 +8) to replace Air Mobility Command's (AMC's) C-141 Special Operations Low Level (SOLL) II aircraft and meet requirements not included in the 120 aircraft program. The adjusted program is: FY03,12; FY04, 5; FY05, 8.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Incremental Funding of Ongoing Performance Improvement Projects (FY00)	*											
(U) GATM - HF Data Link RNP-4 - 1st Year Award (FY00)		*										
(U) Communication Open System Architecture - 1st Year Award (FY00)			*									
(U) Incremental Funding of Ongoing Performance Improvement Projects (FY01)					*							
(U) Incremental Funding of Ongoing Performance Improvement Projects (FY02)									X			
(U) Software Block 14 - 1st Year Award (FY02)											X	
(U) Stab Struts Phase 1 - 1st Year Award (FY02)											X	

\* = completed event - contract obligation  
 X = planned event - contract obligation

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 2569			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Contractor Furnished Engineering & Test					142,092		118,817		100,492	
(U)	Government Test & Other Government Costs (OGC)					11,160		11,121		10,127	
(U)	Total					153,252		129,938		110,619	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Boeing	C,FPI/FP	8/31/81	5,190,366	5,190,366	5,190,366				0	5,190,366
	Boeing	C,CPFF	7/13/95	1,025,425	1,025,425	341,394	142,092	118,817	100,392	511,723	1,214,418
	Pratt & Whitney	C,FP	5/24/91	25,346	25,346	25,346				0	25,346
	Boeing	C,FPI	4/14/89	83,885	83,885	83,885				0	83,885
	Pratt & Whitney	FP+EPA	4/18/95	8,306	8,306	7,506			100	200	7,806
<u>Support and Management Organizations</u>											
	Mission Support OGC	PO				97,500	115	121	127	420	98,283
	Site Activation OGC	PO				1,539				0	1,539
	Miscellaneous					22,400				0	22,400
<u>Test and Evaluation Organizations</u>											
	Combined Test Force	PO				237,200	11,045	11,000	10,000	36,349	305,594
	Wright Labs/Arnold Eng	PO				10,252				0	10,252
	Dev Center										
	Other	PO				3,030				0	3,030



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft					PROJECT 4886		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4886	Large Aircraft Infrared Counter Measures (LAIRCM)	0	44,883	0	0	0	0	0	0	0	44,883

Note: FY03-07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**

The Large Aircraft Infrared Countermeasures (LAIRCM) Program will provide advanced defensive capability for transport and tanker aircraft against Man-Portable Air Defense Systems (MANPADSs) (shoulder-launched IR missiles). The LAIRCM system is significantly more effective than flares, and requires no user intervention after it is activated. Installation of LAIRCM will increase the survivability of transport and tanker aircraft when operating in MANPADS threat areas.

The system consists of advanced integrated missile warning systems, processors, multi-band laser jammers and fine-track sensors. The lasers and fine-track sensors are mounted on turrets. Initial installation is planned on C-17s in late FY03/early FY04. Funding has been provided for 12 C-17s and 8 C-130s. RDT&E funds will be used for non-recurring engineering (NRE) and integration test and evaluation.

Funds for LAIRCM were originally put in the affected aircraft PEs (41130F for C-17s and 41115F for C-130s). Beginning in FY02, all LAIRCM funds were ZBTed to a new LAIRCM PE (41134F), with the exception of the FY01 C-17 RDT&E funds shown here. The total funding did not change as a result of these ZBTs. The LAIRCM program completed all required New Start notifications in the FY01 PB.

The multi-command ORD supporting this program, 'LAIRCM ORD 314-92', was validated 3 Aug 98. Future efforts will improve producibility of the subsystems and improve upon the efficiency and effectiveness of the overall system.

HQ/AMC plans like to equip an additional 59 aircraft to meet the minimum 79 aircraft needed to support One Small-Scale Contingency (1SSC).

\* All FY 02 and later funds for LAIRCM were ZBT'ed to PE 41134F and are not reflected in this R-2A.

(U) **FY 2000 (\$ in Thousands)**

(U) \$0 No Activity

(U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**

(U) \$41,683

1. NRE (initial design, drawings, specifications, documentation, develop C-17 peculiar support equipment for installation, assembly processes, and parts obsolescence)
2. One kit buy
  - Group A - one prototype kit
  - Group B - one prototype kit

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE June 2001			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401130F C-17 Aircraft</b>			PROJECT <b>4886</b>			
(U) <b><u>A. Mission Description Continued</u></b>										
(U) <b><u>FY 2001 (\$ in Thousands) Continued</u></b>										
	3. Software development (for sensor and aircraft integration)									
(U)	\$3,200	Program Office Support (TDY, training, supplies, and CETA contract support)								
(U)	\$44,883	Total								
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>										
(U)	\$0	All funding ZBTed to PE 41134F. See that PE for details.								
(U)	\$0	Total								
(U) <b><u>B. Project Change Summary</u></b>										
LAIRCM funding for FY 02 and later has been ZBT'ed to PE 41134F. See that PE for details.										
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	PE 41134F, LAIRCM		62,164	20,118	13,270			0	95,552	
	RDT&E									
(U)	Other APPN									
(U)	PE 41134F, C-17 LAIRCM		33,370	51,566	51,135	6,258	6,265	0	148,594	
	Procurement, BP-1100									
(U)	PE 41134F, C-130 LAIRCM			33,705	47,202	6,065	7,882	0	94,854	
	Procurement, BP 1100									
* Note: FY 02 and later LAIRCM funds were ZBT'ed from this PE to 41134F. See that PE for details.										
(U) <b><u>D. Acquisition Strategy</u></b>										
LAIRCM system integration and acquisition will be overseen by the LAIRCM System Program Office (ASC/AI). Their winning contractor will integrate the LAIRCM subsystems. Integration and installation of the LAIRCM system will be performed by Boeing for the C-17, since it's still in production. C-130 installation is TBD.										
(U) <b><u>E. Schedule Profile</u></b>										
				<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0401130F C-17 Aircraft</b>					PROJECT <b>4886</b>			
<b>(U) E. Schedule Profile Continued</b>													
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>	
	1	2	3	4	1	2	3	4	1	2	3	4	
<b>(U) Phase I - EMD</b>								X					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 4886			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>	
(U)	Performance Development/System Engineering				0		41,683			0	
(U)	Program Management				0		3,200			0	
(U)	Total				0		44,883			0	
Funding for FY 02 and later has been ZBT'ed to PE 41134F. See that PE for details.											
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Group B Integrator - TBD	CPAF (EMD)	FY01/4				35,183			35,183	
	Group A Installation - Boeing	CPAF (EMD)	FY01/4				6,500			6,500	
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.											
<u>Support and Management Organizations</u>											
	SPO	N/A	N/A					3,200		3,200	
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.											
<u>Test and Evaluation Organizations</u>											
	Current C-17 Test team	N/A	N/A								
member organizations											
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.											
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 4886		
<b>(U) Government Furnished Property Continued:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
TBD									
<u>Support and Management Property</u>									
TBD									
<u>Test and Evaluation Property</u>									
TBD									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						41,683			41,683
Subtotal Support and Management							3,200		3,200
Subtotal Test and Evaluation									
Total Project						44,883			44,883

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>	<b>PROJECT</b> <b>4885</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4885 Large Aircraft Infrared Counter Measures (LAIRCM)	0	0	62,530	20,254	13,373	0	0	0	0	96,158
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	3

Note: FY03-07 budget numbers do not reflect the DOD strategic review results. The LAIRCM RTD&E funds, shown here, have been transferred to this new PE (41134F) from the C-17 (PE 41130F) and the C-130 (PE 41115F). This new PE consolidates LAIRCM RDT&E and Procurement funds into a single PE for this 'cross-cutter' program. It is a continuation of the LAIRCM program which completed all of its required NEW START notifications in FY01 for RDT&E on a limited number of C-17s and C-130s.

**(U) A. Mission Description**

The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide a very effective defensive capability for transport and tanker aircraft against the proliferating IR Man-Portable Air Defense Systems (MANPADS) threat. LAIRCM is significantly more effective than today's traditional employment of flares. It will require no operator intervention after the system is activated. LAIRCM will consist of an advanced integrated missile warning system or systems and an active laser countermeasures system. There is a multi-command Operational Requirements Document (ORD) -- LAIRCM ORD 314-92, validated on 3 Aug 98.

LAIRCM is currently in source selection and expects to be on contract by Sep 01 for Phase I using FY01 PE 41130F funds discussed in footnote above.

LAIRCM Phase I will be deployed on a small number of transport aircraft (12 C-17s and 8 C-130s). FY01 is the first year for C-17 LAIRCM funding; FY02 is the first year for C-130 funding. LAIRCM Phase II will modify an additional 59 aircraft, completing the 79 aircraft (43 C-17s, 24 C-130s & 12 KC-135s) required to handle One Small Scale Contingency (1 SSC). Funding and kit procurement for Phase II is planned to begin in FY05.

Installation of this system will significantly increase the survivability of transport and tanker aircraft operating in areas with IR MANPADS threats. The first C-17 LAIRCM mod will be completed in early FY04. RDT&E funds shown here, will be used for non-recurring engineering (NRE), systems integration, test and evaluation.

**(U) FY 2000 (\$ in Thousands)**

**(U)** \$0 No activity  
**(U)** \$0 Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>		
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>		
		<b>PROJECT</b> <b>4885</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>				
<b>(U) \$0</b>	Note: FY01 is LAIRCM's initial funding and these funds are in PE 41130F, BPAC 4886.			
<b>(U) \$0</b>	Total			
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
<b>(U) \$26,804</b>	Continue design and software development for basic LAIRCM system plus the integration of LAIRCM on the C-17 which began in FY01 (This funding is in C-17's PE 41130F).			
<b>(U) \$29,326</b>	1. Initial design, drawings, specifications, and development of peculiar support equipment for installation of LAIRCM on the C-130. 2. C-17 Kit buys Group A - one prototype kit Group B - one prototype kit 3. Software development for both C-17 and C-130			
<b>(U) \$6,400</b>	Program office support (TDY, training, supplies, and SETA contract support)			
<b>(U) \$62,530</b>	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This program is Budget Activity 7, Operational System Development, for continuing producibility and performance improvements to increase the operational capability of the C-17 and C-130 fleet through programmed modifications.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
<b>(U) Previous President's Budget (FY 2001 PBR)</b>				
<b>(U) Appropriated Value</b>				
<b>(U) Adjustments to Appropriated Value</b>				
a. Congressional/General Reductions				
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions				
<b>Project 4885</b>	<b>Page 2 of 5 Pages</b>			<b>Exhibit R-2 (PE 0401134F)</b>

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>					
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0401134F Large Aircraft InfraRed Counter Measures</b> <b>(LAIRCM)</b>				<b>PROJECT</b> <b>4885</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>												
				<u>FY 2000</u>	<u>FY 2001</u>		<u>FY 2002</u>		<u>Total Cost</u>			
(U)	Adjustments to Budget Years Since FY 2001 PBR						62,530		96,158			
(U)	Current Budget Submit/FY 2002 PBR						62,530		96,158			
	LAIRCM funding was ZBTed to this PE from PEs 41130F and 41115F during the preparation of the FY02 budget.											
<b>(U) Significant Program Changes:</b>												
	The basic LAIRCM system development and C-17 LAIRCM integration was an FY01 NEW START in PE 41130F. For FY01, all RDT&E funds remained in this PE. By FY02, all the LAIRCM RDT&E and Procurement funds had been transferred to this new consolidated LAIRCM PE (PE 41134F).											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>												
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	PE 41130F, C-17 RDT&E											
		0	44,883							0	44,883	
(U)	Other APPN											
(U)	PE 41134F, C-17											
		0	0	33,370	51,566	51,135	6,258	6,265		0	148,594	
	Procurement (BP1100)											
(U)	PE 41134F, C-130											
		0	0	0	33,705	47,202	6,056	7,882		0	94,845	
	Procurement (BP1100)											
<b>(U) E. Acquisition Strategy</b>												
	Integration of the LAIRCM subsystems will be fully competed and be performed by the winning contractor. This contract is in source selection now, with contract planned for Sep 01. Boeing will install LAIRCM on the C-17 (since it's still in production with an open assembly line). C-130 installations are still to be determined.											
<b>(U) F. Schedule Profile</b>												
					<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
					1	2	3	4	1	2	3	4
(U)	Phase I EMD: 1 Qtr FY02											
										X		
	X - Denotes start											
Project 4885			Page 3 of 5 Pages				Exhibit R-2 (PE 0401134F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)			PROJECT 4885			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	LAIRCM									62,530	
(U)	Total									62,530	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Prime Contractor - TBD								56,130	26,628	82,758
	<u>Product Development Organizations</u>										
	System Program Office/Other								6,400	7,000	13,400
	Govt Costs										
	<u>Support and Management Organizations</u>										
	TBD										
	<u>Test and Evaluation Organizations</u>										
	TBD										
(U) <b>Government Furnished Property:</b>											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	TBD										
	<u>Support and Management Property</u>										
	TBD										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)			4885	
<b>(U) Government Furnished Property Continued:</b>						
<u>Test and Evaluation Property</u>						
TBD						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>
	<u>Subtotals</u>					<u>Total</u>
	Subtotal Product Development				56,130	82,758
	Subtotal Support and Management				6,400	26,628
	Subtotal Test and Evaluation					7,000
	Total Project				62,530	96,158
					33,628	

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0401214F Air Cargo Materiel Handling (463-L)</b>					PROJECT <b>5150</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
5150    Next Generation Small Loader (NGSL)	368	0	0	0	0	0	0	0	0	8,773	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	6	
<p>'FY03-FY07 budget numbers do not reflect the DoD strategic review results.'</p> <p>(U) <b><u>A. Mission Description</u></b>            This program element contains a project integral to the Air Force's ability to mobilize forces and equipment worldwide. It involves testing, developing and fielding the Halvorsen (formerly the NGSL), which alleviates critical loader deficiencies and provides the Air Force with a state-of-the-art tactical loader capability for the future. The Halvorsen (25K pound capacity) program supports acquisition and delivery of a minimum requirement of 264 loaders that, along with the Tunner (60K Loader), will form the backbone of the Global Reach airlift 463-L (pallet) movement system. The Halvorsen replaces aging 25K loaders and complements the Tunner fleet by providing increased deployability and cargo handling capacity at smaller, but operationally vital peacetime and contingency airfields. More importantly, the Halvorsen has a high reach capability required for direct interface with Wide-Body Aircraft (WBA). This improved capability eliminates the current requirement for a fleet of wide-body elevator loader equipment used in conjunction with both the 40K and 25K loaders to service WBA. Starting in FY97, the Air Force realigned Loader RDT&amp;E funding from PE 0604704F, Common Support Equipment Development, into this dedicated program element, which also contains the procurement funding.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$368                    Engineering analysis for preproduction testing; GFE/GFP for preproduction testing; travel supporting preproduction testing            (U) \$368                    Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0                        No Activity            (U) \$0                        Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0                        No Activity            (U) \$0                        Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>            Acquisition of the Halvorsen to support operational mobility aircraft requires no significant development effort; therefore, it is categorized as BA-7, operational system development.</p>											
Project 5150			Page 1 of 4 Pages				Exhibit R-2 (PE 0401214F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE					
							June 2001					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT					
07 - Operational System Development				0401214F Air Cargo Materiel Handling (463-L)			5150					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>												
				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>		<u>Total Cost</u>				
(U)	Previous President's Budget (FY 2001 PBR)			493				8,898				
(U)	Appropriated Value			502								
(U)	Adjustments to Appropriated Value											
	a. Congressional/General Reductions			-6								
	b. Small Business Innovative Research			-10								
	c. Omnibus or Other Above Threshold Reprogram			-116								
	d. Below Threshold Reprogram			0								
	e. Rescissions			-2								
(U)	Adjustments to Budget Years Since FY 2001 PBR			0								
(U)	Current Budget Submit/FY 2002 PBR			368				8,773				
(U)	<u>Significant Program Changes:</u>											
	None											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>												
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	Other APPN											
(U)	Other Procurement, AF, BA-2, WSC 825150, Halvorsen (NGSL), PE 0401214F			9,653	23,922	53,461	53,065	27,633	8,373	0	0	176,107
<b>(U) E. Acquisition Strategy</b>												
The Halvorsen (25K pound capacity) program supports acquisition and delivery of a minimum requirement of 264 loaders that, with the Tunner (60K), will form the backbone of the Global Reach airlift 463-L (pallet) movement system. Currently, the Air Force uses a 30-year-old 25K loader with an extremely low mean time between failure (approx. 10 hours). Additionally, the 25K loader lacks high reach capability and requires a separate wide body elevator loader (a fixed based high lift transfer platform) to off/on load KC-10 and Civil Reserve Air Fleet (CRAF) Wide-Body Aircraft (WBA). Upgrading the current loader fleet with the Halvorsen will correct the critical high-reach shortcomings of existing 25K loaders and will provide increased flexibility to ensure the Air Force meets its global mobility commitments. The												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE <b>June 2001</b>																																																															
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0401214F Air Cargo Materiel Handling (463-L)</b>					PROJECT <b>5150</b>																																																															
<p>(U) <b><u>E. Acquisition Strategy Continued</u></b>                      Halvorsen program selected two Non-Developmental Item (NDI) loader manufacturers to build three loaders each. Loaders competed in a 'drive-off' competition, and FMC was awarded a follow-on production contract (Firm Fixed Price) in Jun 00.</p>																																																																									
<p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:35%;"></th> <th colspan="3" style="text-align: center;"><u>FY 2000</u></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) LRIP Award</td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) First Delivery</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Full-Rate Production</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>*Denotes completed milestone                      X Denotes planned milestone</p>													<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) LRIP Award			*										(U) First Delivery							*						(U) Full-Rate Production									X			
	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>																																																																		
	1	2	3	4	1	2	3	4	1	2	3	4																																																													
(U) LRIP Award			*																																																																						
(U) First Delivery							*																																																																		
(U) Full-Rate Production									X																																																																
Project 5150				Page 3 of 4 Pages				Exhibit R-2 (PE 0401214F)																																																																	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401214F Air Cargo Materiel Handling (463-L)			PROJECT 5150			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Acquire and test preproduction articles					0		0		0	
(U)	Test monitoring, engineering tech. order development, SPO travel, equipment, program management support.					368		0		0	
(U)	Total					368		0		0	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	WR-ALC/LEA	FFP/PR	FY98/2			643	0	0	0	0	643
	ASC/SMG	FFP/PR	FY99/1			6,599	0	0	0	0	6,599
	ASC/SMG	FFP/PR	FY00/4			835	368	0	0	0	1,203
<u>Support and Management Organizations</u>											
	Technical Support Contract					328	0	0	0	0	328
<u>Test and Evaluation Organizations</u>											
						<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>											
	Subtotal Product Development					8,077	368	0	0	0	8,445
	Subtotal Support and Management					328	0	0	0	0	328
	Subtotal Test and Evaluation										
	Total Project					8,405	368	0	0	0	8,773

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401218F KC-135s					
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	2,027	483	5,416	1,500	1,511	1,119	1,546	15,769	Continuing	TBD
4494 KC-135 Aging Aircraft Program	2,027	483	5,416	1,500	1,511	1,119	1,546	1,147	Continuing	TBD
4927 KC-X	0	0	0	0	0	0	0	14,622	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 674494: KC-135 Aging Aircraft Program: This program supports the aging aircraft corrosion and fatigue project CORAL REACH. CORAL REACH studies include the analysis and testing efforts in the area of aging aircraft, to include structural, corrosion, fatigue, and stress corrosion cracking. Additionally, the Functional System Integrity Program proactively examines individual aircraft systems for potential impacts due to aging components. The USAF will utilize these activities to improve KC-135 Programmed Depot Maintenance efficiency and to provide direction for future aging aircraft efforts to maintain the KC-135 as a viable airframe. CORAL REACH results provide accurate data for incorporation into the KC-135 Economic Life Study. The KC-135 Economic Life Study consisted of studies for structure, systems, and component support as well as cost benefit analyses to support an Analysis of Alternatives (AOA). The AOA addresses replacement for the KC-135 based on economic decision points and requirements.

674927: In FY07 RDT&E (\$14.6M) will be applied towards the replacement of the KC-135 based in part on the outcomes of the AOA.

(U) **B. Budget Activity Justification**  
 Project 674494 is comprised of low technical risk efforts supporting a fielded weapon system and, therefore, is assigned to Budget Activity 7, Operational Systems. Project 674927, while associated with the KC-135 PE, will be assigned to Budget Activity 7, Operational Systems. However, when the KC-X PE is formerly established, it will be assigned a BA that properly reflects the program content and risk.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
BUDGET ACTIVITY				June 2001
07 - Operational System Development		PE NUMBER AND TITLE		
		0401218F KC-135s		
(U)	<b><u>C. Program Change Summary (\$ in Thousands)</u></b>			
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
				<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	2,268	487	TBD
(U)	Appropriated Value	2,268	487	TBD
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-14		TBD
	b. Small Business Innovative Research	-72		TBD
	c. Omnibus or Other Above Threshold Reprogram	-133		TBD
	d. Below Threshold Reprogram	-13		TBD
	e. Rescissions		-4	TBD
(U)	Adjustments to Budget Years Since FY 2001 PBR	-9		5,416
(U)	Current Budget Submit/FY 2002 PBR	2,027	483	5,416
(U)	<b><u>Significant Program Changes:</u></b>			
	In FY02, \$3.045M will fund the Aerial Refueling Analysis of Alternatives. In FY07, \$14.6M will be applied towards the replacement of the KC-135 based in part of the outcome of the AOA.			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0401218F KC-135s</b>					PROJECT <b>4494</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4494    KC-135 Aging Aircraft Program	2,027	483	5,416	1,500	1,511	1,119	1,546	1,147	Continuing	TBD	
<p>FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>            This program, in part, supports the aging aircraft corrosion and fatigue project CORAL REACH. CORAL REACH studies include the analysis and testing efforts in the area of aging aircraft, to include structural, corrosion, fatigue, and stress corrosion cracking. Additionally, the Functional System Integrity Program proactively examines individual aircraft systems for potential impacts due to aging components. The USAF will utilize these activities to improve KC-135 Programmed Depot Maintenance efficiency and to provide direction for future aging aircraft efforts to maintain the KC-135 as a viable airframe. CORAL REACH results provide accurate data for incorporation into the KC-135 Economic Life Study. The KC-135 Economic Life Study consisted of studies for structure, systems, and component support as well as cost benefit analyses to support an Analysis of Alternatives (AOA). The AOA addresses replacement for the KC-135 based on economic decision points and requirements.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$255                    Corrosion/crack growth rate and fatigue determination and testing            (U) \$792                    Functional Systems Integrity Program (FSIP)            (U) \$233                    Mission support/contractor support            (U) \$747                    Economic Service Life Study            (U) \$2,027                  Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$94                      Corrosion/crack growth rate and fatigue determination and testing            (U) \$30                      Basic materials test and predictive technique            (U) \$209                    Mission support/contractor support            (U) \$150                    Economic Service Life Study            (U) \$483                    Total</p> <p>The following net transactions are not reflected in the FY01 program total: SBIR=-\$31K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>											
Project 4494			Page 3 of 7 Pages				Exhibit R-2A (PE 0401218F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0401218F KC-135s</b>	PROJECT <b>4494</b>
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(U) **A. Mission Description Continued**

- (U) FY 2002 (\$ in Thousands)
- (U) \$980 Corrosion/crack growth rate and fatigue determination and testing
- (U) \$884 Functional Systems Integrity Program (FSIP)
- (U) \$507 Mission support/contractor support
- (U) \$3,045 Analysis of Alternatives
- (U) \$5,416 Total

(U) **B. Project Change Summary**

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										

(U) **D. Acquisition Strategy**

The acquisition strategy consists primarily of separate task orders (with separate statements of work) ranging from fixed price to cost plus contracts. These task orders address a myriad of aging aircraft activities against existing contract vehicles, such as the SPO-managed KC-135 Fleet Support Contract and Design Engineering Program contracts managed through the Air Logistics Centers. The Analysis of Alternatives contracting vehicle has not yet been determined. AOA will be led by AMC/XP.

(U) **E. Schedule Profile**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Corrosion & Fatigue Testing (ongoing )												
(U) Materials Test & Predictive Tech.										*		
(U) FSIP (Ongoing- See Note 1)												
(U) Mission Support (Ongoing)												
(U) Economic Service Life Study					X					*		
(U) Analysis of Alternatives											X	

X=Start / \*=Complete

NOTE 1: Analysis of flight controls/autopilot will complete in 3rd Qtr FY 02. FSIP will continue at that point with examination of additional aircraft systems as

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE  
June 2001

BUDGET ACTIVITY  
07 - Operational System Development

PE NUMBER AND TITLE  
0401218F KC-135s

PROJECT  
4494

(U) E. Schedule Profile Continued

required.

<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
1	2	3	4	1	2	3	4	1	2	3	4

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401218F KC-135s			PROJECT 4494		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Corrosion/crack growth determination and testing					255		137		980
(U)	Basic materials test and predictive technique					0		50		0
(U)	Functional Systems Integrity Program (FSIP)					792		0		884
(U)	Mission support/contractor support					233		296		507
(U)	Economic service life study					747		0		0
(U)	Analysis of Alternatives					0		0		3,045
(U)	Total					2,027		483		5,416
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Boeing	C/KC-135 Fleet Support SS/FFP	Oct 97-Mar 03	TBD	TBD	2,022	1,762	359	1,839	Continuing	TBD
<u>Support and Management Organizations</u>										
ARINC, Frontier, other support contractors	Design Engineering Program (DEP) C/FP	Oct 97-Mar 03	TBD	TBD	148	140	124	3,277	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
FAA, Wright Labs, NASA, etc.	Project Order/MPIR	Oct 97-Mar 03	TBD	TBD	100	125	0	300	Continuing	TBD

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					DATE <b>June 2001</b>	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>			<b>0401218F KC-135s</b>		<b>4494</b>	
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	2,022	1,762	359	1,839	TBD	TBD
Subtotal Support and Management	148	140	124	3,277	TBD	TBD
Subtotal Test and Evaluation	100	125	0	300	TBD	TBD
Total Project	2,270	2,027	483	5,416	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0401219F KC-10S</b>					PROJECT <b>4496</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4496	KC-10 GATM	27,016	19,347	22,774	10,584	2,422	0	0	0	0	82,143
	Quantity of RDT&E Articles	1	0	0	0	0	0	0	0	0	1
<p>FY03-FY07 budget numbers do not reflect the DoD strategic review.</p> <p>(U) <b><u>A. Mission Description</u></b>            Global Air Traffic Management (GATM) is based on evolving Communication, Navigation and Surveillance (CNS) and Free Flight concepts. Key elements of its architecture are Flight Management System (FMS), Dual Multi-Mode Receiver (MMR), Dual Communications Management Unit (CMU), and Communications Datalinks (HF, VHF, SATCOM). Communications upgrades include a data link to augment/replace voice communications. The navigation capabilities include a fully integrated GPS and advanced flight management system. The surveillance capabilities include automatic aircraft position reporting (both enroute and oceanic).</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>            (U) \$9,100 System Engineering/Program Management/FAA Certification            (U) \$12,536 Kit Design/Development            (U) \$2,046 Prototype Fabrication            (U) \$1,845 Award Fee            (U) \$1,489 Mission Support            (U) \$27,016 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$3,041 System Engineering/Program Management/FAA Certification            (U) \$6,143 Kit Design/Development            (U) \$4,656 Prototype Fabrication            (U) \$2,748 Award Fee            (U) \$2,759 Mission Support            (U) \$19,347 Total</p> <p>The following net transactions are not reflected in the FY01 program total: BTR--\$185K and SBIR--\$793K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p>											
Project 4496			Page 1 of 5 Pages				Exhibit R-2 (PE 0401219F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0401219F KC-10S</b>		<b>4496</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U)	\$2,427	System Engineering/Program Management/FAA Certification			
(U)	\$13,478	Kit Design/Development			
(U)	\$3,255	Prototype Fabrication/Install			
(U)	\$3,334	Award Fee			
(U)	\$280	Mission Support			
(U)	\$22,774	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This effort is a low technical risk effort supporting a fielded weapon system and, therefore, is assigned to Budget Activity 7, Operational Systems Development.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U)	Previous President's Budget (FY 2001 PBR)	23,609	19,526		43,135
(U)	Appropriated Value	23,609	19,526		43,135
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-150			-150
	b. Small Business Innovative Research	-683			-683
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	4,332			4,332
	e. Rescissions	-92	-179		-271
(U)	Adjustments to Budget Years Since FY 2001 PBR			22,774	35,780
(U)	Current Budget Submit/FY 2002 PBR	27,016	19,347	22,774	69,137
<b>(U) <u>Significant Program Changes:</u></b>					
FY99 Omnibus payback added \$4.3M to FY00 funds since the FY01 PB.					
Program was restructured in Jun 01 with the following RDT&E changes:					
FY02: realigned \$22.774M from 3010 to 3600					
Project 4496		Page 2 of 5 Pages	Exhibit R-2 (PE 0401219F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE <b>June 2001</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401219F KC-10S</b>			PROJECT <b>4496</b>			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN	0	39,231	15,093	8,163	14,085	1,973				78,545
PE#401219F / KC-10 Squadrons, Aircraft Procurement, AF, BA-5, KC-10 Mods, GATM, BP-11										
<b>(U) E. Acquisition Strategy</b>										
A sole source cost plus award fee contract was awarded to the aircraft manufacturer for the Engineering, Manufacturing, and Development (EMD) effort. The contract is managed at the KC-10 System Program Office at OC-ALC. Installs are planned to be performed by the KC-10 Contractor Logistic Support Contractor.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>	
				1	2	3	4	1	2	3
(U) Acquisition Strategy Plan (FY99/1)										
(U) EMD Contract Award					X					
(U) Prototype Installation										X
(U) Production Decision										X
(U) First Flight (1QFY03)										
(U) Flight Certification Test (2QFY03)										
(U) AF OT&E Complete (4QFY03)										
(U) 1st Production Aircraft Delivery (1QFY04)										
(U) Low Rate Initial Production (4QFY03)										
X=Start / * = Complete										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401219F KC-10S			PROJECT 4496			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	System Engineering/Program Management					9,100		3,041		2,427	
(U)	Kit Design/Development					12,536		6,143		13,478	
(U)	Prototype Fabrication					2,046		4,656			
(U)	Prototype Fabrication/Install									3,255	
(U)	Award Fee					1,845		2,748		3,334	
(U)	Mission Support					1,489		2,759		280	
(U)	Total					27,016		19,347		22,774	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Boeing	SS/CPAF	Sep 99-Mar 01				25,568	19,347	22,074	13,006	79,995
	<u>Product Development Organizations</u>										
	<u>Support and Management Organizations</u>										
	ARINC, Frontier, other support contractors	C/FP	Sep 99-Mar 01				323				323
	AF Mission Support System (AFMSS)	T&M	Mar 00				1,000		600		1,600
	<u>Test and Evaluation Organizations</u>										
	418 Test Squadrn (Edwards AFB)	AFFTC T&M	Jan 01				28		100		128
	Joint Spectrum Center	T&M	Apr 00				97				97

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401219F KC-10S			PROJECT 4496		
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
TBD									
<u>Support and Management Property</u>									
TBD									
<u>Test and Evaluation Property</u>									
TBD									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
					25,568	19,347	22,074	13,006	79,995
Subtotal Product Development									
Subtotal Support and Management						1,323		600	1,923
Subtotal Test and Evaluation						125		100	225
Total Project						27,016	19,347	22,774	82,143

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0404011F Special Operations Forces</b>	PROJECT <b>4860</b>
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COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4860 Special Operations Forces	0	2,833	0	0	0	0	0	0	0	2,833
Quantity of RDT&E Articles	0	2	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

Aircrew require an enhanced capability to precisely locate and identify the modern day threats in order to meet mission requirements. Even without firing, threat systems can disrupt or negate operational missions by requiring aircrew reactions that affect mission objectives. Improved threat information from a modernized radar warning receiver (RWR) will assist the aircrews in determining precise threat ranges/directions and provide option responses short of mission abort or violent aircraft maneuvering. Threat location refinements will help an enroute aircrew respond 'real time' to previously unknown threats by providing sufficiently accurate information to allow the aircrews to reroute around hostile areas. This precision location and identification (PLAID) upgrade has been targeted for the AN/ALR-69 RWR system installed on all Air Force Special Operations Command (AFSOC) aircraft. This upgrade effort will be designed/developed to provide improved situational awareness capability, improved reliability/maintainability, improved emitter ranging capability by a factor of 100, improved angle accuracy, and increased ambiguity resolution by an order of magnitude. The present AN/ALR-69 RWR system is 1970's technology and has become increasingly difficult to maintain with the sustainment and capability issues.

Congressional plus-up in FY-01 to this program element for three AFSOC projects: \$900K for Universal Biological Sensor, \$500K for AFSOC aircrew orientation and screening, and \$350K for developing a methodology for approving medications for aircrews. AFSOC has a requirement for a man-portable capability to provide early warning and force protection from nuclear, biological and chemical contaminants. The object of the universal sensor project is to develop passive inexpensive sensors for agents which can be read remotely or with a hand-held reader on a variety of surfaces without damaging the surfaces or otherwise revealing the sensor's presence. The existing AFSOC aircrew orientation and screening program needs to be analyzed and improved in order to produce a better applicant selection rate, decrease training washout rates, and increase the number of qualified special operations personnel with a limited training budget. In order to retain as many highly trained special operations aviators as possible, AFSOC needs a methodology for evaluating and/or approving the use of new medications for use by aircrew, thus allowing them to keep flying while being treated for waiverable medical conditions.

**(U) FY 2000 (\$ in Thousands)**

**(U)** \$0 No Activity  
**(U)** \$0 Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																																
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0404011F Special Operations Forces</b>	PROJECT <b>4860</b>																																																																
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">(U) \$1,095</td> <td>Design/development of hardware/software for precision location and identification (PLAID) upgrade to AN/ALR-69 RWR</td> </tr> <tr> <td>(U) \$890</td> <td>Develop/test prototype sensor for detecting/identifying biological warfare agents</td> </tr> <tr> <td>(U) \$498</td> <td>Analyse and improve methodology for orientation/screening of AFSOC aircrew applicants</td> </tr> <tr> <td>(U) \$350</td> <td>Develop methodology for approving new medications for individual aircrew members</td> </tr> <tr> <td>(U) \$2,833</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>No Activity</td> </tr> <tr> <td>(U) \$0</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is a budget activity 7 - Operational System Development because it provides funding for the modernization of a currently existing and operating system. The AN/ALR-69 PLAID effort is to develop a precision location and threat identification upgrade for the ALR-69. The universal biological sensor project is developing and testing a prototype aerosol spray sensor and a handheld reader to detect and identify biological agents for AFSOC. The current AFSOC aircrew orientation &amp; screening program is being analysed and redesigned to improve applicant selection. A methodology is being developed and validated for individually evaluating aviators on pharmacotherapy.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,109</td> <td></td> <td style="text-align: center;">1,109</td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td style="text-align: center;">2,859</td> <td></td> <td style="text-align: center;">2,859</td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td style="text-align: center;">-26</td> <td></td> <td style="text-align: center;">-26</td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			(U) \$1,095	Design/development of hardware/software for precision location and identification (PLAID) upgrade to AN/ALR-69 RWR	(U) \$890	Develop/test prototype sensor for detecting/identifying biological warfare agents	(U) \$498	Analyse and improve methodology for orientation/screening of AFSOC aircrew applicants	(U) \$350	Develop methodology for approving new medications for individual aircrew members	(U) \$2,833	Total	(U) \$0	No Activity	(U) \$0	Total		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	0	1,109		1,109	(U) Appropriated Value		2,859		2,859	(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions		-26		-26	(U) Adjustments to Budget Years Since FY 2001 PBR				
(U) \$1,095	Design/development of hardware/software for precision location and identification (PLAID) upgrade to AN/ALR-69 RWR																																																																	
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(U) Previous President's Budget (FY 2001 PBR)	0	1,109		1,109																																																														
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(U) Adjustments to Budget Years Since FY 2001 PBR																																																																		
Project 4860	Page 2 of 5 Pages	Exhibit R-2 (PE 0404011F)																																																																

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE June 2001								
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0404011F Special Operations Forces</b>					PROJECT <b>4860</b>								
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>																		
					<u>FY 2000</u>					<u>FY 2001</u>		<u>FY 2002</u>		<u>Total Cost</u>				
(U)	Current Budget Submit/FY 2002 PBR											2,833	2,833					
(U)	<u>Significant Program Changes:</u> FY-01 Congressional add of \$1750K for three AFSOC projects.																	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>																		
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>		<u>Cost to</u>		<u>Total Cost</u>					
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>		<u>Complete</u>							
(U)	AF RDT&E																	
(U)	PE64270F EW Development											10,947	13,376	1,827				
(U)	Other Procurement (3010) PE27442F, Common ECM Equipment											10,057	10,358	11,002	11,587	11,934	Continuing	TBD
(U)	Other APPN																	
<b>(U) E. Acquisition Strategy</b>																		
Acquisition will be accomplished through full and open competitive procedures using source selection processes for award of contract. Program is currently in source selection and award is scheduled for July 01.																		
The three Congressional add development projects will be handled by Air Force Research Lab, Brooks AFB, TX.																		
<b>(U) F. Schedule Profile</b>																		
					<u>FY 2000</u>					<u>FY 2001</u>			<u>FY 2002</u>					
					1	2	3	4	1	2	3	4	1	2	3	4		
(U)	Contract award											X						
(U)	Software Development complete												X					
(U)	Hardware Development complete													X				
(U)	Testing Begins														X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0404011F Special Operations Forces			PROJECT 4860			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		
(U)	Software/Hardware Design/Development						1,918				
(U)	Program Office Support						449				
(U)	System Engineering Support						466				
(U)	Total						2,833				
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	WR-ALC/LNRC	NA	Jul 2001	TBD	TBD	0	0	500		Continuing	TBD
	AFRL/Human Effectiveness Directorate	NA	TBD	TBD	TBD	0	0	1,418		0	1,418
	<u>Support and Management Organizations</u>										
	TBD WR-ALC/LNRC	NA	Jun 01	TBD	TBD	0	0	439		0	439
	AFSOC/XPQ, Acq Man Div	NA	TBD	TBD	TBD			210			210
	<u>Test and Evaluation Organizations</u>										
	TBD ALR-69 PLAID	NA	TBD	TBD	TBD	0	0	170		0	170
	3 Congressional adds	TBD	TBD	TBD	TBD			96			96
(U) <b>Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	NONE										
Project 4860					Page 4 of 5 Pages	Exhibit R-3 (PE 0404011F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE		
BUDGET ACTIVITY				PROJECT		
<b>07 - Operational System Development</b>				<b>June 2001</b>		
PE NUMBER AND TITLE				PROJECT		
<b>0404011F Special Operations Forces</b>				<b>4860</b>		
<b>(U) Government Furnished Property Continued:</b>						
<u>Support and Management Property</u>						
NONE						
<u>Test and Evaluation Property</u>						
NONE						
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	1,918		TBD	TBD
Subtotal Support and Management	0	0	649		0	649
Subtotal Test and Evaluation	0	0	266		0	266
Total Project	0	0	2,833		TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0702207F Depot Maintenance (Non-IF)					PROJECT 3326	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3326	Precision Measurement & Calibration	4,605	3,482	1,542	1,569	1,599	1,627	1,661	1,696	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
FY03-FY07 budget numbers do not reflect DoD's strategic review results.											
<p>(U) <b>A. Mission Description</b>            This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including 113 Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&amp;D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&amp;D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.</p>											
<p>(U) <b>FY 2000 (\$ in Thousands)</b></p>											
(U)	\$2,200	Complete the development of an improved blackbody calibrator; begin projects to develop a target simulator radiometer, an improved avalanche photodiode and a domain engineered pyroelectric detector; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.									
(U)	\$1,095	Complete the development of the microwave high power system; begin projects to develop a full scale co-conical field generation system and a direct comparison power calibration system for 2.4mm, 2.92mm and 3.5mm connectors; and continue development of standards for radar support, RF communications systems, and radar cross-section range measurements.									
(U)	\$720	Begin hydrazine detector cal support and low gas flow MAP; and continue the development of improved calibration support for coordinate measuring machines (CMMs), wind tunnel characterization and standards to support physical, mechanical and electro-mechanical support									
Project 3326			Page 1 of 5 Pages					Exhibit R-2 (PE 0702207F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0702207F Depot Maintenance (Non-IF)</b>	PROJECT <b>3326</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2000 (\$ in Thousands) Continued</u></b>		
<b>(U) \$455</b>	equipment. Begin to develop methods to characterize enhanced wide band oscilloscopes and precision wide band measurement systems; and continue development of standards for electrical measurements to support high accuracy electronic test equipment.	
<b>(U) \$135</b>	Complete the large area alpha radiation source metrology project, begin the low level dosimetry traceability project and continue the development of national standards for calibration of ionizing radiation hazard instrumentation.	
<b>(U) \$4,605</b>	Total	
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
<b>(U) \$1,522</b>	Complete the avalanche photodiode improvement and tunable laser projects; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.	
<b>(U) \$350</b>	Continue development of standards for radar support, RF communications systems, and radar cross-section range measurements.	
<b>(U) \$175</b>	Complete development of improved calibration support for coordinate measuring machines (CMMs), and wind tunnel characterization; and continue development of standards to support physical, mechanical and electro-mechanical support equipment.	
<b>(U) \$595</b>	Complete the frequency response characteristics of capacitors and the next generation sampling comparator probe projects; and continue development of standards for electrical measurements to support high accuracy electronic test equipment.	
<b>(U) \$115</b>	Complete the large area beta source project and continue the development of national standards for calibration of ionizing radiation hazard instrumentation.	
<b>(U) \$725</b>	Begin to develop methods to automate metrology processes.	
<b>(U) \$3,482</b>	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
<b>(U) \$692</b>	Complete the target simulator radiometer; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.	
<b>(U) \$200</b>	Complete the full scale co-conical chamber; and continue development of standards for radar support, RF communications systems, and radar cross-section range measurements.	
<b>(U) \$220</b>	Complete hydrazine detector cal support and low gas flow MAP; and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.	
<b>(U) \$200</b>	Complete the Hall effect resistance standard project, and the improved thin film multi junction thermoconverter project; and continue development of standards for electrical measurements to support high accuracy electronic test equipment.	
<b>Project 3326</b>	<b>Page 2 of 5 Pages</b>	<b>Exhibit R-2 (PE 0702207F)</b>

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																																																							
		June 2001																																																							
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																																																							
<b>07 - Operational System Development</b>	<b>0702207F Depot Maintenance (Non-IF)</b>	<b>3326</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$50                      Complete the low level dosimetry traceability project and continue the development of national standards for calibration of ionizing radiation hazard instrumentation.</p> <p>(U) \$180                     Continue to develop methods to automate metrology processes.</p> <p>(U) \$1,542                  Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in budget activity 7 - Operational System Development because it supports operational systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">1,500</td> <td style="text-align: right;">1,515</td> <td style="text-align: right;">1,533</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">4,744</td> <td style="text-align: right;">1,515</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td style="text-align: right;">1,975</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">-26</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: right;">-19</td> <td style="text-align: right;">-8</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td style="text-align: right;">-94</td> <td></td> <td style="text-align: right;">9</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">4,605</td> <td style="text-align: right;">3,482</td> <td style="text-align: right;">1,542</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b></p> <p>The additional funding in FY00/01 is to expedite the completion of several metrology projects such as to: develop the microwave high power system; develop a full scale co-conical field generation capability; improve blackbody calibration; develop target simulator radiometer calibration capability; develop direct comparison power calibration system; and develop methods to characterize bench top wind tunnels. It will also be used to address requirements in areas such as automated metrology that could not be funded at previous levels.</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	1,500	1,515	1,533	TBD	(U) Appropriated Value	4,744	1,515			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		1,975			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram	-26				d. Below Threshold Reprogram					e. Rescissions	-19	-8			(U) Adjustments to Budget Years Since FY 2001 PBR	-94		9		(U) Current Budget Submit/FY 2002 PBR	4,605	3,482	1,542	TBD
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																					
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Project 3326	Page 3 of 5 Pages	Exhibit R-2 (PE 0702207F)																																																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0702207F Depot Maintenance (Non-IF)</b>			PROJECT <b>3326</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
(U) AF RDT&E									
(U) Other APPN									
<b>(U) E. Acquisition Strategy</b>									
Primarily accomplish through intergovernmental transfer between the Department of Defense and other Federal Departments. Secondly, accomplish through various funding vehicles.									
<b>(U) F. Schedule Profile</b>									
		<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
		1	2	3	4	1	2	3	4
(U) N/A									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0702207F Depot Maintenance (Non-IF)			PROJECT 3326		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Quality Assurance (Develop Measurement Standards & Calibration Support)				4,576		3,452			1,511
(U)	Travel				29		30			31
(U)	Total				4,605		3,482			1,542
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
National Institute of Standards & Technology	MIPR (DD FORM 448)	Varies	TBD	TBD	14,980	4,266	2,647	1,211	Continuing	TBD
Department of Energy	MIPR (DD FORM 448)	Varies	TBD	TBD	59	310	80	120	Continuing	TBD
Technical Support Contracts AFMC	Various In House	Varies	TBD	TBD			725	180	Continuing	TBD
		Varies	TBD	TBD	173	29	30	31	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>					15,212	4,605	3,482	1,542	TBD	TBD
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					15,212	4,605	3,482	1,542	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0708011F Industrial Preparedness</b>					PROJECT <b>2865</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2865	Manufacturing Technology	50,913	58,342	53,782	54,415	55,639	56,611	57,783	59,006	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>FY03-FY07 budget numbers do not reflect the DoD strategy review results.</p> <p>(U) <b>A. Mission Description</b>                      The corporate Air Force Manufacturing Technology (ManTech) program supports the DoD ManTech program as mandated by Section 2525, Title 10, United States Code. ManTech demonstrates advancements in manufacturing process technologies, engineering systems, and industrial practices. New manufacturing capabilities are transitioned into Air Force weapon system design, acquisition, and sustainment programs. ManTech also provides cost reduction processes/practices for future and legacy systems. ManTech strives to make superior mission enabling technologies an affordable life cycle reality. Efficiencies comparable to world class enterprises are achieved by expanding DoD's access to a capable, responsible, multi-use industrial base. Program efforts accelerate shop floor manufacturing process maturation at every stage through increased emphasis on cost, schedule, and quality risks in transition. Where mature processes are not available, laboratory-developed initial process capabilities are matured and inserted into weapon system programs. ManTech goes beyond just factory floor manufacturing/repair processes. It encompasses every activity within an industrial enterprise, ranging from business management (e.g., tools for Integrated Product Process Development (IPPD)) to supplier base interactions and performance. The strategies and best practices of world-class enterprises are analyzed and the performance of defense suppliers benchmarked. The world's best industrial practices are adapted and validated in multiple pilot projects and deployed in defense applications. Project efforts target all industry levels, from large prime contractors to small material and parts vendors. Program emphasis is on the aircraft, missile, munitions, spacecraft, and launch vehicle sectors of the industrial base. Program efforts also enhance repair/remanufacture capabilities to affordably sustain the aging weapon systems inventory, thereby reducing total ownership costs. Note: In FY 2001, Congress added \$5.8 million to this program for Specialty Aerospace Metals (\$3.8 million) and a Nickel Metal-Hydride Replacement Battery (\$2.0 million).</p> <p>(U) <b>FY 2000 (\$ in Thousands)</b></p> <p>(U) \$22,061      Demonstrated cost-effective and efficient manufacturing technologies for critical, high quality, reliable structural, propulsion, and electronic components and assemblies required for existing and next generation aircraft. Led pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from flexible manufacturing, commercial/military integration, quality processing, and supplier improvements. Conducted long-term projects focused on Integrated Product Process Development (IPPD) tools. Efforts included Phase II of the Forging Supplier Initiative and continuance of the Composites Affordability Initiative to achieve a 50% cost reduction in fighter aircraft structures.</p> <p>(U) \$19,746      Provided cost-effective repair and manufacturing technologies for affordable sustainment of existing weapon systems and to enhance mission readiness. Reduced repair and maintenance cycle time for aging systems and established remanufacturing capabilities which will rapidly generate</p>											
Project 2865		Page 1 of 7 Pages					Exhibit R-2 (PE 0708011F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> June 2001
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0708011F Industrial Preparedness</b>	<b>2865</b>
(U) <b><u>A. Mission Description Continued</u></b>		
(U) <b><u>FY 2000 (\$ in Thousands) Continued</u></b>		
	standardized replacement parts on demand. Achieved process improvements for repair/remanufacture of large area structures on legacy aircraft.	
(U) \$2,530	Promoted efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods for advanced tactical missiles. Instituted manufacturing improvements required to transition precision-guided munition subsystems into production. Chartered pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from inserting best practices in the production of weapon systems.	
(U) \$6,076	Demonstrated affordable, flexible manufacturing processes to reduce the cost and lead time of higher performance spacecraft and launch vehicles. Established effective and efficient manufacturing technology for critical high quality, reliable electronic component and assemblies required for surveillance, tracking communications links, and data/signal processing. Piloted high return on investment efforts to provide efficient, low-cost capability to produce components and weapon systems in the space, launch, and Command, Control, Communications, and Intelligence (C3I) industrial base sectors. Initiated effort to rapidly respond to space sector manufacturing issues.	
(U) \$500	Started development of mass production automation process for Nickel Metal-Hydride Replacement Battery effort.	
(U) \$50,913	Total	
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$22,869	Continue to invest in cost-effective and efficient manufacturing technology demonstrations for critical, high quality, reliable structural, propulsion, and electronic components and assemblies required for future and legacy aircraft. Maintain pilot efforts in high leverage activities to validate potential benefits accrued from flexible manufacturing, commercial/military integration, quality processing, and supplier improvements. Perform long-term projects to develop lean enterprise integration tools. Initiate an effort to catalog and implement lean concepts. Start manufacturing modeling and simulation activity (Integrated Manufacturing Simulation for Affordability project).	
(U) \$20,677	Enhance current weapon system mission readiness by establishing/demonstrating cost-effective repair and remanufacturing technologies for affordable sustainment. Reduce repair and maintenance cycle time for aging systems. Develop remanufacturing capabilities to rapidly generate standardized replacement parts on demand. Initiate an effort to address technologies for turbine engine life extension.	
(U) \$2,654	Further the manufacturing state-of-the-art for advanced tactical missiles. Establish and demonstrate efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods. Identify and implement manufacturing improvements required to transition precision-guided munition subsystems into production. Conduct high-payoff pilot projects to validate potential benefits accrued from using production best practices. Initiate a program to establish affordable manufacturing processes for Micro-Electro-Mechanical Systems (MEMS) applied to inertial measurement units.	
(U) \$6,342	Establish and demonstrate affordable, flexible manufacturing processes to reduce the cost and lead time of higher performance spacecraft and	
Project 2865	Page 2 of 7 Pages	Exhibit R-2 (PE 0708011F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> June 2001
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0708011F Industrial Preparedness</b>	<b>2865</b>
(U) <b><u>A. Mission Description Continued</u></b>		
(U) <b><u>FY 2001 (\$ in Thousands) Continued</u></b>		
	launch vehicles. Provide effective and efficient manufacturing technology for critical high quality, reliable electronic components/assemblies for surveillance, tracking communications links, and data/signal processing. Conduct pilot efforts in high-payoff endeavors for efficient, low-cost capability to produce components and weapon systems in the spacecraft, launch vehicles, and Command, Control, Communications, and Intelligence (C3I) industrial base sectors. Maintain efforts to rapidly respond to space sector manufacturing issues.	
(U) \$3,800	Start tasks associated with affordable processing of Specialty Aerospace Metals (e.g., laser forming, casting, welding, forging).	
(U) \$2,000	Start scale-up of semi-automatic production process for Nickel Metal-Hydride Replacement Battery effort.	
(U) \$58,342	Total	
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$23,606	Launch affordable and efficient manufacturing technology investigations for critical, high quality, reliable structural, propulsion, and electronic components and assemblies required for existing and next generation aircraft. Conduct high-value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements (e.g., Composites Affordability Initiative (CAI) Phase III. Leverage specialty aerospace metals work into metals affordability initiatives focused on laser forming, casting, welding, and forging. Focus long-term projects using lean enterprise integration tools (e.g., Lean Enterprise Self-Assessment Tool (LESAT) and Transition-to-Lean Roadmaps). Continue effort to catalog and implement lean concepts. Start manufacturing modeling and simulation activity to reduce the number of engineering change orders generated in manufacturing enterprises (Integrated Manufacturing Simulation for Affordability (IMSA) effort.	
(U) \$20,933	Address cost-effective repair and manufacturing technologies for affordable sustainment of existing weapon systems to enhance mission readiness. Start activity on manufacturing materials for high-cycle fatigue damping in engine components. Reduce repair and maintenance cycle time for aging systems and establish remanufacturing capabilities which will rapidly generate standardized replacement parts on demand. Start Engine Rotor Life Extension (ERLE) effort.	
(U) \$2,750	Pursue efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods for advanced tactical missiles. Accomplish pilot efforts to assess potential benefits accrued from inserting best practices into weapon system production programs. Incorporate manufacturing improvements to transition precision-guided munition subsystems into production. Start joint program with Army on Inertial Measurement Unit for Micro-Electro-Mechanical Systems (IMU for MEMS).	
(U) \$6,493	Sponsor affordable, flexible manufacturing process development to reduce cost and lead time for higher performance spacecraft and launch vehicles. Establish effective and efficient manufacturing technology for critical high quality, reliable electronic component and assemblies required for surveillance, tracking communications links, and data/signal processing. Conduct pilot efforts in high-payoff endeavors to enable efficient, low-cost production capability for components and weapon systems in the space, launch, and Command, Control, Communications, and	
Project 2865	Page 3 of 7 Pages	Exhibit R-2 (PE 0708011F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708011F Industrial Preparedness</b>			PROJECT <b>2865</b>				
(U) <b><u>A. Mission Description Continued</u></b>											
(U) <u>FY 2002 (\$ in Thousands) Continued</u>											
Intelligence (C3I) industrial base sectors. Continue efforts to rapidly respond to space sector manufacturing issues (e.g., leverage standard modular spacecraft architecture using flexible multi-mission production lines to achieve cost and cycle time reductions).											
(U)	\$53,782	Total									
(U) <b><u>B. Budget Activity Justification</u></b>											
ManTech is part of Budget Activity 7, Operational System Development, to provide support for systems in design, production, and/or operational use. ManTech is part of the Industrial Preparedness Program Element supporting the Defense Planning Guidance and the Air Force Planning Guidance.											
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>						
(U)	Previous President's Budget (FY 2001 PBR)	51,988	53,082	53,600							
(U)	Appropriated Value	52,314	58,882								
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions	-40									
	b. Small Business Innovative Research	-1,155									
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram	-1									
	e. Rescissions	-205	-540								
(U)	Adjustments to Budget Years Since FY 2001 PBR			182							
(U)	Current Budget Submit/FY 2002 PBR	50,913	58,342	53,782	TBD						
(U) <u>Significant Program Changes:</u>											
Not Applicable.											
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
Not Applicable.											

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																				
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0708011F Industrial Preparedness</b>	PROJECT <b>2865</b>																																				
<p>(U) <b><u>E. Acquisition Strategy</u></b> All major contracts in this Program Element were awarded after full and open competition.</p> <p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 10%;"></th> <th colspan="3" style="text-align: center;"><u>FY 2000</u></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Not Applicable</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Not Applicable												
	<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>																															
	1	2	3	4	1	2	3	4	1	2	3	4																										
(U) Not Applicable																																						
Project 2865	Page 5 of 7 Pages	Exhibit R-2 (PE 0708011F)																																				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708011F Industrial Preparedness			PROJECT 2865		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Manufacturing technologies for aircraft components					22,061		22,869		23,606
(U)	Repair/remanufacture technologies for weapon system sustainment					19,746		20,677		20,933
(U)	Manufacturing methods for missile and munition assemblies					2,530		2,654		2,750
(U)	Manufacturing processes to reduce spacecraft and launch vehicle costs					6,076		6,342		6,493
(U)	Nickel Metal-Hydride Replacement Battery effort					500		2,000		0
(U)	Specialty Aerospace Metals							3,800		
(U)	Total					50,913		58,342		53,782
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Numerous	Various	Various	N/A	N/A	19,068	24,945	22,453	22,556	Continuing	TBD
Howmet	Cost Share	Jul 95	N/A	N/A	12,935	3,500	3,500	0	0	19,935
Composites Affordability Initiative (Consortium)	Various	Various	N/A	N/A	13,055	4,220	5,150	5,000	3,500	30,925
Sustainment Initiative	Various	Various	N/A	N/A	2,430	4,500	4,822	4,475	3,100	19,327
Engine Forging Initiative	Various	May 99	N/A	N/A	1,200	2,300	3,000	2,000	0	8,500
Parts Obsolescence Initiative	Various	Various	N/A	N/A	3,120	4,773	5,449	3,761	245	17,348
Small/Medium Supplier Initiative	Various	Various	N/A	N/A	300	1,400	2,650	3,325	0	7,675
ManTech for Affordable Spacecraft	Various	Various	N/A	N/A	1,875	2,525	3,475	3,665	2,500	14,040
Laser Shock Peening, Inc.	CS	Aug 98	N/A	N/A	1,700	2,000	1,343	0	0	5,043
Coherent Technology, Inc.	CS	Jun 97	N/A	N/A	2,100	250	0	0	0	2,350

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>					<b>0708011F Industrial Preparedness</b>				<b>2865</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>											
<u>Product Development Organizations</u>											
Turbine Engine Life	TBD	TBD	N/A	N/A	0	0	200	2,500	7,300	10,000	
Extension											
Affordable Missile Warning Sensor	TBD	TBD	N/A	N/A	0	0	200	2,500	0	2,700	
Integrated Manufacturing and Simulation for Affordability	TBD	TBD	N/A	N/A	0	0	300	2,000	15,200	17,500	
Electro Energy, Inc.	Various	Various	N/A	N/A	0	500	2,000	0	0	2,500	
Specialty Aerospace Metals	Various	Various	N/A	N/A	0	0	3,800	0	Continuing	TBD	
Metals Affordability Initiative	Various	Various	N/A	N/A	2,000	0	0	2,000	Continuing	TBD	
<u>Support and Management Organizations</u>											
In house support											
<u>Test and Evaluation Organizations</u>											
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development					59,783	50,913	58,342	53,782	TBD	TBD	
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project					59,783	50,913	58,342	53,782	TBD	TBD	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708026F Productivity, Reliability, Availability, Maintainability Program					PROJECT 2146	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2146	PRAM	22,108	21,032	20,689	24,108	27,537	30,983	31,609	32,280	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0
<p>Note: FY 2003-FY 2007 budget numbers do not reflect the DoD strategy review results.</p> <p>(U) <b><u>A. Mission Description</u></b>            This program emphasizes the rapid incorporation of reliability and maintainability (R&amp;M) technology 'fixes' that will improve the operational capability of weapon systems and equipment at a significantly lower cost. Productivity, Reliability, Availability, Maintainability (PRAM) accomplishes this by utilizing existing off-the-shelf and emerging technologies and adapting them to specific Air Force and joint-Service weapon systems and processes to solve near-term deficiencies. It relies on Major Command and field support to implement the adapted-technology when the initial investment is complete. It is a key tool for reducing the total ownership cost of fielded systems and supporting infrastructure. Average project length is twenty-seven months. PRAM currently provides services to all four Air Force Materiel Command centers: Aeronautical Systems Center; Electronic Systems Center; Space and Missile Systems Center; and Air Armament Center, as well as the Air Logistics Centers.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$6,412      Initiated subsystem R&amp;M projects that reduce the overall maintenance burden, improve subsystem capabilities and reliability, and improve mission readiness. Included a Turbine Engine Disk Stress effort to measure in-service disks during repair/overhaul to track the onset of low cycle fatigue damage on an individual disk basis, creating the ability to predict remaining life and providing an engineering basis for service life extension.</p> <p>(U) \$463      Continued airframe R&amp;M efforts to reduce overall Air Force operations and support costs.</p> <p>(U) \$1,550      Continued efforts for aerospace support equipment and base infrastructure R&amp;M enhancements to increase equipment reliability, to include a programmable circuit card project that provides the ability to create a replacement of failed circuit cards wherever needed for most applications.</p> <p>(U) \$6,000      Started and completed tasks on Lean Blade Repair at Oklahoma City Air Logistics Center.</p> <p>(U) \$7,000      Started and completed additional tasks on Aging Landing Gear Life Extension.</p> <p>(U) \$683      Continued high priority, quick response R&amp;M projects identified by the operational commands to reduce maintenance downtime.</p> <p>(U) \$22,108      Total</p>											
Project 2146			Page 1 of 6 Pages					Exhibit R-2 (PE 0708026F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY <b>07 - Operational System Development</b>		June 2001
PE NUMBER AND TITLE <b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>		PROJECT <b>2146</b>
(U)	<b><u>A. Mission Description Continued</u></b>	
(U)	<b><u>FY 2001 (\$ in Thousands)</u></b>	
(U)	\$5,613	Reduce the overall maintenance burden, improve capabilities and reliability, and improve mission readiness of aircraft subsystems. Reduce cost by enhancing engine trending and diagnostic systems. While current systems sound an alarm when a threshold is breached, adverse trends are not diagnosed. Applying artificial intelligence, statistical analysis, and reasoning tools will enable appropriate corrective action to be taken when an adverse trend is detected and diagnosed. Continue the ongoing project to lower engine support costs by developing new engine oil analysis techniques that will identify all wear modes during the life of an engine.
(U)	\$2,000	Address the reliability and maintainability (R&M) issues that drive airframe operations and support (O&S) costs. Develop protective coatings and application techniques to eliminate ice accumulation on the B-1B inlet, eliminate this flight safety risk, and reduce maintenance costs.
(U)	\$3,890	Reduce maintenance costs and increase weapon systems availability by aggressively addressing shortfalls in support equipment and base infrastructure. Overcome parts obsolescence with current electronic warfare equipment test consoles by developing a single configuration test station to service both the ALQ-131 and ALQ-184 electronic attack pods used on the F-16, F-15, A-10, and C-130. Address the number one reliability driver for the Low Altitude Navigation and Targeting Infrared for Night pod by developing a test capability that will detect marginal performance and predict repairability of the Traveling Wave Tube before it is sent to the repair vendor.
(U)	\$3,000	Continue R&M efforts that directly support military space and missile systems, including leveraging commercial-off-the-shelf technology to replace the Constellation Control System and reduce MILSATCOM O&S costs. Initiate a program to procure prototypes and perform qualification testing for the Peacekeeper electronics battery.
(U)	\$529	Initiate high priority, quick response R&M projects identified by the operational commands to reduce maintenance downtime. These quick response issues are identified throughout the year. The Productivity, Reliability, Availability, and Maintainability (PRAM) effort is typically completed in a month or less.
(U)	\$6,000	Develop and implement a lean manufacturing approach for propulsion repair at Oklahoma City Air Logistics Center. Develop a real-time management information system to support the change over from functional shops to business units and product lines.
(U)	\$21,032	Total
(U)	<b><u>FY 2002 (\$ in Thousands)</u></b>	
(U)	\$2,530	Complete the existing Productivity, Reliability, Availability, and Maintainability (PRAM) projects that are designed to reduce total ownership cost of Air Force aging aircraft such as: overcoming parts obsolescence in test equipment for electronic warfare systems; prototyping coatings and lubricants to prevent corrosion on support equipment and electrical terminals; and developing more efficient means of publishing technical data. Initiate new crosscutting projects designed to address the key issues identified within the Aging Aircraft System Program Office.
Project 2146		Exhibit R-2 (PE 0708026F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>June 2001</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>	<b>PROJECT</b> <b>2146</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b></p> <p>(U) \$12,084      Initiate airframe, subsystem, and space reliability and maintainability (R&amp;M) efforts that reduce the overall maintenance burden, improve capabilities and reliability, and improve mission readiness. These efforts will be focused on reducing overall Air Force O&amp;S costs.</p> <p>(U) \$4,162      Continue existing aging aircraft efforts that will reduce overall Air Force operations and support (O&amp;S) cost and increase aircraft availability, while maintaining operational capability.</p> <p>(U) \$1,913      Complete the existing efforts to address reduced O&amp;S costs within the air armaments enterprise. Complete development of a non-destructive test protocol that duplicates actual flight conditions for Precision-Guided Munitions and Cruise Missiles.</p> <p>(U) \$20,689      Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b> This program is in Budget Activity 7, Operational System Development, because it provides support to systems in operational use.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: center;">22,075</td> <td style="text-align: center;">15,227</td> <td style="text-align: center;">20,741</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">22,382</td> <td style="text-align: center;">21,227</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-274</td> <td style="text-align: center;">-195</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: center;">-52</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: center;">22,108</td> <td style="text-align: center;">21,032</td> <td style="text-align: center;">20,689</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b> Not Applicable.</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	22,075	15,227	20,741		(U) Appropriated Value	22,382	21,227			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions	-274	-195			(U) Adjustments to Budget Years Since FY 2001 PBR			-52		(U) Current Budget Submit/FY 2002 PBR	22,108	21,032	20,689	TBD
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Project 2146	Page 3 of 6 Pages	Exhibit R-2 (PE 0708026F)																																																							

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>										DATE <b>June 2001</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>					PROJECT <b>2146</b>	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
(U) Related Activities:											
(U) PE 0605011F, RDT&E for Aging Aircraft.											
<b>(U) E. Acquisition Strategy</b>											
All projects within this Program Element are awarded competitively, either by full and open competition, or by amending task order contracts with competition for subcontracts.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
				1	2	3	4	1	2	3	4
(U) Blade Repair Contract Award					*						X
(U) Request For Proposal Release				X	X			X	X		
(U) Contract Awards				*	*	*		*	*	*	
											X
											X
											X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>				<b>2146</b>	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	Subsystem Reliability and Maintainability (R&M)				6,412		5,613			2,530
(U)	Airframe R&M				463		2,000			12,084
(U)	Aero Support Equipment and Base Infrastructure R&M				1,550		3,890			4,162
(U)	Space and Missile Systems Reliability				0		3,000			1,913
(U)	Blade Tip Repair Project				6,000		6,000			0
(U)	Quick Response R&M				683		529			0
(U)	Aging Landing Gear Life Extension				7,000		0			0
(U)	Total				22,108		21,032			20,689
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Numerous	Various	Various	N/A	N/A	3,028	4,639	8,721	15,050	Continuing	TBD
General Atomics	Various	Various	N/A	N/A	9,903	13,000	6,770	1,100	0	30,773
Lockheed Martin	Various	Various	N/A	N/A	510	241	1,500	1,500	0	3,751
ARINC	T&M	Feb 01	N/A	N/A	1,750	2,796	1,546	0	0	6,092
Innovative Technology	T&M	Feb 01	N/A	N/A	0	555	558	0	0	1,113
Battelle	T&M	Feb 01	N/A	N/A	0	0	150	150	0	300
MITRE	T&M	Jan 01	N/A	N/A	0	877	300	0	0	1,177
Lockheed Sanders	T&M	Mar 01	N/A	N/A	0	0	900	550	0	1,450
Southwest Research	T&M	Mar 01	N/A	N/A	0	0	587	2,339	828	3,754
<u>Support and Management Organizations</u>										
In-house support										
Project 2146					Page 5 of 6 Pages			Exhibit R-3 (PE 0708026F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE		
BUDGET ACTIVITY				PROJECT		
<b>07 - Operational System Development</b>				<b>June 2001</b>		
PE NUMBER AND TITLE				PROJECT		
<b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>				<b>2146</b>		
<b>(U) Performing Organizations Continued:</b>						
<u>Test and Evaluation Organizations</u>						
<b>(U) Government Furnished Property:</b>						
	<u>Contract</u>	<u>Award or</u>				
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>
<u>Description</u>	<u>Vehicle</u>					
<u>Product Development Property</u>						
None						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>
						<u>Budget</u>
						<u>FY 2002</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development				15,191	22,108	21,032
Subtotal Support and Management						20,689
Subtotal Test and Evaluation						TBD
Total Project				15,191	22,108	21,032
						20,689
						TBD
						TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0708071F Joint Logistics Program - Ammunition System</b>				PROJECT <b>4679</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4679	Ammunition Management Standard System	11,829	6,635	106	0	0	0	0	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Air Force is the Executive Agent for Joint Ammunition Management Standard System (JAMSS). The JAMSS is the joint migration system being developed to improve and integrate ammunition management business functions and data across the Department of Defense (DoD). It directly supports the goals of the DoD Logistics Strategic Plan (1996 edition) to: reduce logistics response times, provide total asset visibility, develop seamless logistics systems, and streamline the logistics infrastructure.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$8,414                      Software Development                      (U) \$3,141                      Support Contractors, Mission support, etc                      (U) \$146                         GFE/COTS                      (U) \$128                         GFE and COTS software update, debug, maintenance                      (U) \$11,829                      Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$4,035                      Support Contractors, Mission support, etc                      (U) \$2,600                      Mission Requirements Verification Review                      (U) \$6,635                      Total</p> <p>The following net transactions are not reflected in the FY01 program total: SBIR -400K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$106                         Support Contractors, Mission support, etc. (See Section C, Significant Program Changes)                      (U) \$106                         Total</p>											
Project 4679			Page 1 of 5 Pages				Exhibit R-2 (PE 0708071F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>																																																																																								
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708071F Joint Logistics Program - Ammunition System</b>			PROJECT <b>4679</b>																																																																																								
<p>(U) <b><u>B. Budget Activity Justification</u></b>                  This program is in Budget Activity 7 - Operational System Development because it modernizes automated information systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">11,333</td> <td style="text-align: right;">11,238</td> <td style="text-align: right;">11,341</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">11,333</td> <td style="text-align: right;">11,238</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: right;">-340</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">-251</td> <td style="text-align: right;">-4,500</td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: right;">1,131</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: right;">-44</td> <td style="text-align: right;">-103</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td></td> <td></td> <td style="text-align: right;">-11,235</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">11,829</td> <td style="text-align: right;">6,635</td> <td style="text-align: right;">106</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b>                  The Department has issued an Acquisition Decision Memorandum (ADM) stopping development activity and directing an ammunition management mission area review to revalidate joint requirements. In conjunction with this review, out year funding for this program has been returned to the Services to allow each Service to contribute to developing common ammunition logistics management systems.. As a result of the halt in development, the AF in FY01, as part of AF ATR sent to Congress, requested approval to reprogram \$4.5M from the program.</p> <p>(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Not Applicable</td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>E. Acquisition Strategy</u></b>                  DISA's Defense Enterprise Integration Services (DEIS II) contract was used to award the previous JAMSS development contract. DISA's DEIS II contract was awarded under full and open competition. Contractors selected under the DEIS II contract will compete for future business. Future acquisition strategy pending outcome of mission requirements verification review.</p>									<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	11,333	11,238	11,341	TBD	(U) Appropriated Value	11,333	11,238			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research	-340				c. Omnibus or Other Above Threshold Reprogram	-251	-4,500			d. Below Threshold Reprogram	1,131				e. Rescissions	-44	-103			(U) Adjustments to Budget Years Since FY 2001 PBR			-11,235		(U) Current Budget Submit/FY 2002 PBR	11,829	6,635	106	TBD		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) Not Applicable																
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																																																											
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	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																																																																						
(U) Not Applicable																																																																																															
Project 4679		Page 2 of 5 Pages			Exhibit R-2 (PE 0708071F)																																																																																										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE June 2001					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
07 - Operational System Development				0708071F Joint Logistics Program - Ammunition System				4679				
<b>(U) F. Schedule Profile</b>												
		<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Preliminary Prototype Review (Dec 99)												
(U) Initial Contractor Test	*											
(U) Contract Modification		*										
(U) New Acquisition Decision Memorandum						*						
(U) Revalidate Requirements								X				
* - Denotes completed event.												
X - Denotes planned event.												
Project 4679				Page 3 of 5 Pages				Exhibit R-2 (PE 0708071F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>					<b>0708071F Joint Logistics Program - Ammunition System</b>				<b>4679</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Software Development					8,414		0		0	
(U)	Other Govt Costs					3,141		4,035		106	
(U)	Government Furnished Equipment (GFE)/COTS					146		0		0	
(U)	GFE and COTS software update, debug, maintenance					128		0		0	
(U)	Mission Requirements Verification Review					0		2,600		0	
(U)	Total					11,829		6,635		106	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Software Developer	Cost + Award Fee	7 Jul 97	43,254	45,774	13,156	8,414	0	0	Continuing	TBD
	Unknown	TBD			2,600	0	0	2,600	0	Continuing	TBD
<u>Support and Management Organizations</u>											
	Innolog, KPMG, MITRE, MCR			16,612	16,612	4,787	2,021	1,888	0	Continuing	TBD
	SPO WPAFB			17,528	17,528	1,450	920	2,147	106	Continuing	TBD
	GFE and COTS software update, debug, maintenance.	TBD	TBD	4,990	4,990	80	128	0	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	ATEC (Army OPTEC)			1,704	1,704	203	200	0	0	Continuing	TBD
	IV&V			1,600	1,600	200	0	0	0	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708071F Joint Logistics Program - Ammunition System			PROJECT 4679		
<b>(U) Government Furnished Property:</b>									
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
COTS S/W and H/W	GSA Sc.	As Req'd	As Req'd	2,246	146	0	0	Continuing	TBD
<u>Support and Management Property</u>									
COTS S/W and Hardware	GSA Sch.	As Req'd	As Req'd	0	0	0	0	0	0
<u>Test and Evaluation Property</u>									
Shared with Development Resources									
				<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>									
Subtotal Product Development				15,402	8,560	2,600	0	TBD	TBD
Subtotal Support and Management				6,317	3,069	4,035	106	TBD	TBD
Subtotal Test and Evaluation				403	200	0	0	TBD	TBD
Total Project				22,122	11,829	6,635	106	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development						
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	30,939	40,484	24,221	24,992	27,873	27,967	28,641	29,201	Continuing	TBD
3090 Embedded Computer Resources Support Improvement Program (ESIP)	2,323	0	0	0	0	0	0	0	0	2,323
3318 Product Data Systems Modernization (PDSM)	1,332	4,654	2,877	2,928	2,989	2,568	2,588	2,638	Continuing	TBD
4654 Integrated Maintenance Data System (IMDS)	27,284	33,848	21,344	22,064	24,884	25,399	26,053	26,563	Continuing	TBD
4926 Reengineering and Enabling Technologies	0	1,982	0	0	0	0	0	0	0	1,986
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY01 Congress added an additional \$1.0 million in RDT&E funds for IMDS and \$2.0 million in RDT&E funds for Reengineering and Enabling Technologies (RET). An additional \$5.6 million was added to the IMDS project for: Advanced Engine Simulation and Optimization Program (AESOP)(\$1.8 million), Aircraft and Systems Support Infrastructure (ASSI)(\$1.8 million), and Air Force Knowledge Management Program (\$2.0 million). ESIP funding transferred to PE 0708612F beginning in FY01.

FY03-FY07 budget numbers do not reflect the DoD strategic review results.

(U) **A. Mission Description**  
 This program element supports four separate programs. The ESIP program (project 673090) improves support of embedded computer system software, automates and standardizes weapon system support processes, establishes advanced support methodologies, provides automated tools and infrastructure environments, and improves readiness support to facilitate rapid software turnaround in response to changing mission and/or threat requirements. This project has been transferred to PE 0708612F beginning in FY01. The PDSM program (project 673318) updates Air Force digital data standards to commercial industry standards that support the Continuous Acquisition and Life-Cycle Support (CALS) concept. The IMDS program (project 674654) develops and fields an Air Force standard maintenance information system to integrate information systems supporting Air Force maintenance activities into a single open architecture, modern decision support system that is compatible with the Global Combat Support System - Air Force (GCSS-AF) architecture. This enhanced decision support system will increase operational production capability and support system efficiency, while decreasing mobility infrastructure requirements and cost of operations. Finally, the RET program (project 674926) provides for continuing

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0708611F Support Systems Development**

(U) **A. Mission Description Continued**

analytical research and studies in reengineering and enabling technologies. This project is projected to move to PE 0605104F in FY02.

(U) **B. Budget Activity Justification**

This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	33,198	32,258	28,253	TBD
(U) Appropriated Value	33,383	40,858		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-3			
b. Small Business Innovative Research	-730			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-1,580			
e. Rescissions	-131	-374		
(U) Adjustments to Budget Years Since FY 2001 PBR			-4,032	TBD
(U) Current Budget Submit/FY 2002 PBR	30,939	40,484	24,221	TBD

(U) **Significant Program Changes:**

In FY01 Congress added an additional \$1.0 million in RDT&E funds for IMDS and \$2.0 million in RDT&E funds for Reengineering and Enabling Technologies (RET). An additional \$5.6 million was added to the IMDS project for: Advanced Engine Simulation and Optimization Program (AESOP)(\$1.8 million), Aircraft and Systems Support Infrastructure (ASSI)(\$1.8 million), and Air Force Knowledge Management Program (\$2.0 million). ESIP funding transferred to PE 0708612F beginning in FY01.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>					PROJECT <b>3090</b>		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3090	Embedded Computer Resources Support Improvement Program (ESIP)	2,323	0	0	0	0	0	0	0	Continuing	TBD
<p>ESIP funding transferred to PE 0708612F beginning in FY01.                      FY03-FY07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      This project conducts research and development to improve the support of embedded mission-critical software intensive systems. It encompasses automation and standardization of support processes, advanced support methodologies, tools and environments, and readiness support to facilitate rapid turnaround of software in response to changing mission and/or changing threat requirements.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$15 Adaptive Software Flight Demonstration (ASFD)                      (U) \$318 Adaptive Software Technology Development (ASTD)                      (U) \$39 Embedded Information Systems Re-engineering (EISR)                      (U) \$405 Incremental Software Evolution for Real-Time (INSERT)                      (U) \$113 Incremental Upgrade of Legacy Systems Technology Demonstration (IULS TD)                      (U) \$451 Reconfigurable Aerospace Computer Emulator (RACE)                      (U) \$69 Real-Time Defense Information Infrastructure Common Operating Environment (RT DII COE) Support                      (U) \$504 Virtual Engineering Environment (VEE)                      (U) \$409 Weapon Systems Open Architecture (WSOA)                      (U) \$2,323 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p>											
Project 3090		Page 3 of 19 Pages					Exhibit R-2A (PE 0708611F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development					PROJECT 3090		
(U) <b><u>B. Project Change Summary</u></b>												
N/A												
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>												
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E												
(U) Other APPN												
(U) Other Procurement AF, BA 3, P-1:55, ESIP, PE 78611F	11,635	0	0	0	0	0	0	0	Continuing		TBD	
(U) <b><u>D. Acquisition Strategy</u></b>												
All major contracts awarded after full and open competition.												
(U) <b><u>E. Schedule Profile</u></b>												
					<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>		
					1	2	3	4	1	2	3	4
(U) Adaptive Software Flight Demonstration (ASFD) Demo					*							
(U) Reconfigurable Aerospace Computer Emulator (RACE) Demos					*							
(U) Virtual Test Station (VTS) Demo					*							
(U) Incremental Upgrade of Legacy Systems (IULS) Tech Demos					*			*				
(U) Incremental Software Evolution for Real-Time (INSERT) Demos								*				
(U) Real-Time DII COE IPT Support					*	*	*	*				
* denotes completed event												
X denotes planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 3090		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Adaptive Software Flight Demonstration (ASFD)					15		0		0
(U)	Adaptive Software Technology Development (ASTD)					318		0		0
(U)	Embedded Information Systems Re-engineering (EISR)					39		0		0
(U)	Incremental Software Evolution for Real-Time (INSERT)					405		0		0
(U)	Incremental Upgrade of Legacy Systems (IULSO Tech Demo)					113		0		0
(U)	Reconfigurable Aerospace Computer Emulator (RACE)					451		0		0
(U)	Real-Time DII COE IPT Support					69		0		0
(U)	Virtual Engineering Environment					504		0		0
(U)	Weapon Systems Open Architecture (WSOA)					409		0		0
(U)	Total					2,323		0		0
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
SAIC	D.O.	Various	N/A	N/A	4,384	373	0	0	Continuing	TBD
TRW	D.O.	Various	N/A	N/A	1,525	196	0	0	Continuing	TBD
Boeing	D.O.	Various	N/A	N/A	158	828	0	0	Continuing	TBD
Lockheed Martin/CMU	D.O.	Various	N/A	N/A	157	856	0	0	Continuing	TBD
Other (JAWS, RT DII)	Various	Various	N/A	N/A	54	70	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0708611F Support Systems Development</b>			<b>3090</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	6,278	2,323	0	0	TBD	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project	6,278	2,323	0	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>					PROJECT <b>3318</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3318	Product Data Systems Modernization (PDSM)	1,332	4,654	2,877	2,928	2,989	2,568	2,588	2,638	Continuing	TBD
FY03-FY07 budget numbers do not reflect the DoD strategic review results.											
<b>(U) A. Mission Description</b>											
This project implements the Air Force portion of the Joint Computer-Aided Acquisition and Logistics Support (JCALS) system ensuring the uninterrupted transition of legacy system functional capabilities to the new joint systems. Beginning in FY01 the funding for the existing Automated Civil Engineer System (ACES) Program was moved into this project. ACES is the modernization of the Interim Work Information Management System (IWIMS) legacy system that supports Civil Engineering Management Information System requirements.											
<b>(U) FY 2000 (\$ in Thousands)</b>											
(U)	\$225	Managed AF technical data activities									
(U)	\$18	Sustained JEDMICS									
(U)	\$180	Developed and maintained digital templates for new acquisition technical orders									
(U)	\$241	Planned/participated in JCALS to ensure AF requirements are met									
(U)	\$438	Activated AF JCALS sites to ensure timely and accurate data is available and useable									
(U)	\$57	Tested digital data specifications/standards and represent AF at standards activities									
(U)	\$173	Provided direct support to weapon systems, Logistics and Product Centers, and MAJCOMs									
(U)	\$1,332	Total									
<b>(U) FY 2001 (\$ in Thousands)</b>											
(U)	\$624	Manage AF technical data activities									
(U)	\$49	Sustain JEDMICS									
(U)	\$494	Develop and maintain digital templates for new acquisition technical orders									
(U)	\$661	Plan/participate in JCALS to ensure AF requirements are met									
(U)	\$1,204	Activate AF JCALS sites to ensure timely and accurate data is available and useable									
(U)	\$157	Test digital data specifications/standards and represent AF at standards activities									
(U)	\$474	Provide direct support to weapon systems, Logistics and Product Centers, and MAJCOMs									
(U)	\$991	Automated Civil Engineer System (ACES)									
(U)	\$4,654	Total									
Project 3318		Page 7 of 19 Pages					Exhibit R-2A (PE 0708611F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>June 2001</b>																																																																																																																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>				PROJECT <b>3318</b>																																																																																																																																						
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$425            Manage AF technical data activities</p> <p>(U) \$32             Sustain JEDMICS</p> <p>(U) \$321            Develop and maintain digital templates for new acquisition technical orders</p> <p>(U) \$430            Plan/participate in JCALS to ensure AF requirements are met</p> <p>(U) \$783            Activate AF JCALS sites to ensure timely and accurate data is available and useable</p> <p>(U) \$102            Test digital data specifications/standards and represent AF at standards activities</p> <p>(U) \$310            Provide direct support to weapon systems, Logistics and Product Centers, and MAJCOMs</p> <p>(U) \$474            Automated Civil Engineer System (ACES)</p> <p>(U) \$2,877          Total</p> <p>(U) <b><u>B. Project Change Summary</u></b> N/A</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> </tr> <tr> <td>Not Applicable</td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b> All major contracts awarded after full and open competition.</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4" style="text-align: center;"><u>FY 2000</u></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) ACES Project Management Module Development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ACES Housing Module Development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ACES Fire Dept Module Development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ACES Readiness/Personnel Modules Development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Project 3318</p>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN											Not Applicable												<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) ACES Project Management Module Development							X						(U) ACES Housing Module Development								X					(U) ACES Fire Dept Module Development									X				(U) ACES Readiness/Personnel Modules Development									X									
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																																																				
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Page 8 of 19 Pages				Exhibit R-2A (PE 0708611F)																																																																																																																																										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE <b>June 2001</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>					PROJECT <b>3318</b>				
<b>(U) E. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
* denotes completed event X denotes planned event														
Project 3318				Page 9 of 19 Pages				Exhibit R-2A (PE 0708611F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 3318			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U)	Manage AF technical data activities					225		624		425	
(U)	Plan/participate/activate JEDMICS sites					18		49		32	
(U)	Test digital data specifications/standards and represent AF at standards activities					57		157		102	
(U)	Develop and maintain digital data templates for new acquisition technical orders					180		494		321	
(U)	Plan/participate in JCALS to ensure AF requirements and schedules are met					241		661		430	
(U)	Activate AF JCALS sites to ensure timely and accurate data is available and useable					438		1,204		783	
(U)	Provide direct support to weapon systems, Logistics and Product Centers, and Major Commands (MAJCOMS)					173		474		310	
(U)	Automated Civil Engineer System (ACES)					0		991		474	
(U)	Total					1,332		4,654		2,877	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Software Factory	N/A	N/A	N/A	N/A	0	0	991	474	Continuing	TBD
<u>Support and Management Organizations</u>											
	RJO	ECRC	Var	N/A	N/A	6,989	778	0	0	0	7,767
	MTC (formerly RJO)	GSA	Var	N/A	N/A	0	0	1,551	757	Continuing	TBD
	LOGTEC	GSA	Var	N/A	N/A	10,527	0	1,622	1,203	Continuing	TBD
	BTAS	GSA	Var	N/A	N/A	183	270	42	443	Continuing	TBD
	SPO Operations	N/A	N/A	N/A	N/A	0	284	448	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
07 - Operational System Development				0708611F Support Systems Development					
				3318					
<b>(U) Government Furnished Property:</b>									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Vehicle</u>		<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
Not Applicable									
<u>Support and Management Property</u>									
Not Applicable									
<u>Test and Evaluation Property</u>									
Not Applicable									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				0	0	991	474	TBD	TBD
Subtotal Support and Management				17,699	1,332	3,663	2,403	TBD	TBD
Subtotal Test and Evaluation									
Total Project				17,699	1,332	4,654	2,877	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development					PROJECT 4654		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4654	Integrated Maintenance Data System (IMDS)	27,284	33,848	21,344	22,064	24,884	25,399	26,053	26,563	Continuing	TBD
<p>In FY01 Congress added an additional \$1.0 million in RDT&amp;E funds for IMDS. An additional \$5.6 million was added to the IMDS project for: Advanced Engine Simulation and Optimization Program (AESOP)(\$1.8 million), Aircraft and Systems Support Infrastructure (ASSI)(\$1.8 million), and Air Force Knowledge Management Program (AFKMP)(\$2.0 million).                      FY03-07 budget numbers do not reflect the DoD strategic review results.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Integrated Maintenance Data System (IMDS) is an information technology program to provide maintenance personnel all maintenance information assets under one system. It will have distributed databases, which will link designated existing legacy systems until their eventual transition to full operation under IMDS, as well as providing an integrated tool for interfacing with certain other legacy systems that will be sustained for the foreseeable future. It will display electronic technical manuals, provide easy-to-use data entry, record maintenance actions, and link all external data sources (maintainer, supervisor, warehouse and supply).</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$18,911 IMDS Development (Increment 3)                      (U) \$604 Support Contractors (MITRE, Tecolote, SenCom)                      (U) \$2,769 SPO Operations                      (U) \$1,500 Simulation Based Forecasting Decision Support Systems (SBFDSS)                      (U) \$1,000 Reengineering and Enabling Technologies (RET)                      (U) \$500 Air Resource Rapid Reapplication Tools (ARRRTs)                      (U) \$2,000 Air Force Knowledge Management Program (AFKMP)                      (U) \$27,284 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$19,248 IMDS System                      (U) \$2,500 Support Contractors (MITRE, Tecolote, SenCom)                      (U) \$3,500 SPO Operations.                      (U) \$3,000 Feeder Systems                      (U) \$1,800 Simulation Based Forecasting Decision Support Systems (SBFDSS)/Advanced Engine Simulation and Optimization Program (AESOP)                      (U) \$1,800 Aircraft and Systems Support Infrastructure (ASSI)</p>											
Project 4654				Page 12 of 19 Pages				Exhibit R-2A (PE 0708611F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE June 2001	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>				PROJECT <b>4654</b>	
(U) <b><u>A. Mission Description Continued</u></b>										
(U) <u>FY 2001 (\$ in Thousands) Continued</u>										
(U) \$2,000 Air Force Knowledge Management Program (AFKMP)										
(U) \$33,848 Total										
The following net transactions are not reflected in the FY01 program total: SBIR= -1,266K. These transactions are not reflected in other sections of the R-docs where an FY01 total is shown.										
(U) <u>FY 2002 (\$ in Thousands)</u>										
(U) \$15,344 IMDS System										
(U) \$2,200 Support Contractors (MITRE, Tecolote, SenCom)										
(U) \$3,800 SPO Operations.										
(U) \$21,344 Total										
(U) <b><u>B. Project Change Summary</u></b>										
In FY00 IMDS changed its technical approach from modified COTS to an incremental modernization of the legacy maintenance systems.										
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Other Procurement AF, IMDS (PE 0708611F).	2,659	2,472	2,630	2,587	2,645	2,696	2,688	2,729	Continuing	TBD
(U) Operations & Maintenance AF, IMDS (PE78611F)	1,704	2,324	1,782	1,759	1,857	1,898	1,962	1,991	Continuing	TBD
(U) <b><u>D. Acquisition Strategy</u></b>										
All major contracts awarded after full and open competition.										
(U) <b><u>E. Schedule Profile</u></b>										
				<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE June 2001				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0708611F Support Systems Development</b>					<b>4654</b>				
<b>(U) E. Schedule Profile Continued</b>														
		<u>FY 2000</u>					<u>FY 2001</u>					<u>FY 2002</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
(U)	Begin Release 1 (F-22 Upgrade)				*									
(U)	""Green Screen""							*						
(U)	IMDS/CAMS GUI								X					
(U)	Interface Test								X					
(U)	World Wide Release									X				
(U)	Begin Release 2 (IMDS System/CAMS Modernization)								X					
	* denotes completed event													
	X denotes planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 4654		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	IMDS Development (Increment 3)					16,695		0		0
(U)	CAMS Modernization/GUI					2,216		19,248		15,344
(U)	Support Contractors (MITRE, Tecolote, SenCom)					604		2,500		2,200
(U)	SPO Operations					2,769		3,500		3,800
(U)	Simulation Based Forecasting Decision Support Systems (SBFDSS)/Advanced Engine Simulation and Optimization Program (AESOP)					1,500		1,800		0
(U)	Air Force Knowledge Management Program (AFKMP)					2,000		2,000		0
(U)	Reengineering and Enabling Technologies (RET)					1,000		0		0
(U)	Air Resource Rapid Reapplication Tools (ARRRTs)					500		0		0
(U)	Aircraft and Systems Support Infrastructure (ASSI)					0		1,800		0
(U)	Feeder Systems					0		3,000		0
(U)	Total					27,284		33,848		21,344
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Andersen Consulting	CPAF	19 Jul 96	N/A	N/A	40,579	16,695	0	0	0	57,274
Software Factory	N/A	N/A	N/A	N/A	0	2,216	3,185	0	0	5,401
IMDS System	TBD	TBD	N/A	N/A	0	0	16,063	14,844	Continuing	TBD
SBFDSS/AESOP	TBD	TBD	N/A	N/A	0	1,500	1,800	0	0	3,300
ASSI	TBD	TBD	N/A	N/A	0	0	1,800	0	0	1,800
AFKMP	TBD	TBD	N/A	N/A	0	2,000	2,000	0	0	4,000
RET/ARRRT	TBD	TBD	N/A	N/A	0	1,500	0	0	0	1,500
Feeder Systems	TBD	TBD	N/A	N/A	0	0	3,000	0	0	3,000

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										June 2001
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0708611F Support Systems Development					4654
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
Support Contractors	Var	Var	N/A	N/A	9,454	604	2,500	2,200	Continuing	TBD
SPO Operations	N/A	N/A	N/A	N/A	3,049	2,769	3,500	3,800	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
IMDS System	TBD	TBD	N/A	N/A	0	0	0	500	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					40,579	23,911	27,848	14,844	TBD	TBD
Subtotal Support and Management					12,503	3,373	6,000	6,000	TBD	TBD
Subtotal Test and Evaluation					0	0	0	500	TBD	TBD
Total Project					53,082	27,284	33,848	21,344	TBD	TBD

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>					<b>PE NUMBER AND TITLE</b> <b>0708611F Support Systems Development</b>					<b>PROJECT</b> <b>4926</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4926	Reengineering and Enabling Technologies	0	1,982	0	0	0	0	0	0	0	1,986

Note: Congress added \$2 million in RDT&E funds in FY01. This project was under BPAC 674654 in FY00. In FY02, this BPAC is projected to move to PE 0605104F. FY03-FY07 budget numbers do not reflect the DoD strategic review results.

**(U) A. Mission Description**

This program provides for continuing analytical research and studies in reengineering and enabling technologies. It provides quick response assistance for senior Air Force officials and others in the Business Process Reengineering (BPR) and change management arenas. Using reengineering processes and enabling technologies, existing processes and their associated activities can be analyzed to identify work that is value added, non-value added, and wasted. It will assist senior leaders with removing duplication of effort, unnecessary product generation delays and non-productive activities and provide significant improvements in product quality.

The Air Force Acquisition community is pursuing excellence through business process redesign and the associated enabling technologies. This program provides for developing a center of excellence in BPR and for mentoring Headquarters Air Force (HAF) leaders in the proper application of BPR principles for their initiatives. It will maintain information on the state of the art in BPR paradigms and tailor their application for the HAF and SAF/AQ environment. It will also capture lessons learned and other feedback from BPR applications for change management and process improvement strategies.

**(U) FY 2000 (\$ in Thousands)**

**(U)** \$0 No Activity

**(U)** \$0 Total

**(U) FY 2001 (\$ in Thousands)**

**(U)** \$1,000 Business Process Reengineering (BPR) and Change Management Research

**(U)** \$600 Senior Leader Quick Response Studies

**(U)** \$382 Data Management Tools and Associated Activities

**(U)** \$1,982 Total

**(U) FY 2002 (\$ in Thousands)**

**(U)** \$0 No Activity

**(U)** \$0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE June 2001			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>				PROJECT <b>4926</b>		
(U) <b><u>B. Project Change Summary</u></b> Congress added \$2 million in RDT&E funds for Reengineering and Enabling Technologies										
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
Not applicable										
(U) <b><u>D. Acquisition Strategy</u></b> All major contracts awarded after full and open competition										
(U) <b><u>E. Schedule Profile</u></b>										
				<u>FY 2000</u>				<u>FY 2001</u>		<u>FY 2002</u>
				1	2	3	4	1	2	3
(U) GSA Contract Awarded								*		
* denotes completed event										
X denotes planned event										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 4926		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>
(U)	Business Process Reengineering (BPR) and Change Management Research					0		1,000		0
(U)	Senior Leader Quick Response Studies					0		600		0
(U)	Data Management Tools and Associated Activities					0		382		0
(U)	Total					0		1,982		0
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
DSD Labs	GSA	TBD	N/A	N/A	0	0	1,982	0	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	0	1,982	0	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					0	0	1,982	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program					PROJECT 4851		
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4851	Embedded Comp Res Spt Prog Impr	0	3,326	2,376	2,432	2,504	2,575	2,692	2,729	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

Note: In FY 2001, funding was moved to this PE from PE 0708611F, Project 673090. FY 2003 - FY 2007 budget numbers do not reflect the DoD strategy review results.

(U) **A. Mission Description**  
 This program improves the support of mission-critical software intensive systems. It encompasses automation and standardization of support processes, advanced support methodologies, tools and environments, and readiness support to facilitate rapid turnaround of software in response to changing mission and/or changing threat requirements.

(U) **FY 2000 (\$ in Thousands)**  
 (U) \$0 Previously accomplished in PE 0708611F.  
 (U) \$0 Total

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$345 Continue developing adaptive software technologies. Develop and validate a design architecture for the embedded avionics application domain. Complete development of an application design methodology to integrate commercial and emerging technologies into platform-independent, resource adaptive applications. Conduct technology demonstrations in designated platforms. Transfer adaptive technologies to weapon systems to support embedded software that can respond to both mission profile changes and dynamic mission events.  
 (U) \$165 Develop technologies and methodologies to upgrade legacy systems. Validate and mature specific proven technologies that will enable cost-effective, incremental improvements to fielded embedded information systems, allowing the affordable integration of legacy systems with other weapon systems and command and control platforms. Incorporate the use of open system standards in these technologies and methodologies.  
 (U) \$340 Complete development of Reconfigurable Aerospace Computer Emulators to improve the reliability and maintainability of aging/obsolete on-board aerospace computers. Validate developed technologies to replace on-board computers with commercial microprocessor-based computer emulation technology. Demonstrate the methodologies developed to implement the incremental upgrades of on-board computers with new commercial-off-the-shelf processors, and demonstrate their backward compatibility with existing mission critical software.  
 (U) \$75 Continue supporting the development of the Real-Time Defense Information Infrastructure Common Operating Environment. Develop and test

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> June 2001
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0708612F Computer Resources Support Improvement Program</b>	<b>4851</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands) Continued</u></b>		
	technical approaches to integrate reuse and commonality to improve the effectiveness of systems performing real-time command and control missions.	
<b>(U) \$250</b>	Continue developing a Virtual Engineering Environment (VEE) for software development. Develop a test environment incorporating new technologies, commercial-off-the-shelf components, and existing technologies. Evaluate the capabilities of the VEE to significantly improve embedded software development and testing, and to reduce facility acquisition and maintenance costs. Demonstrate the effectiveness of VEE in supporting current and next generation weapon systems software development and test environments.	
<b>(U) \$809</b>	Complete development of the Weapon System Open Architecture (WSOA). Develop a 'virtual backplane' with an Open System Architecture to bridge the different embedded avionics and command, control, communications, and intelligence (C3I) systems across multiple aircraft platforms. Demonstrate and test the ability of the WSOA to support multiple requests for imagery, targeting data, and other situational information between fighter aircraft and an airborne C3I platform.	
<b>(U) \$30</b>	Develop technologies to implement Assured Middleware for Real-Time Embedded Systems (AMRES). Conduct trade off studies, and technical and cost benefits analyses between different real-time, fault-tolerance, and security concepts to implement an adaptable AMRES. Design the AMRES environment using the Real-Time Common Object Request Broker Architecture to integrate the components and concepts selected from the analyses.	
<b>(U) \$55</b>	Continue the Embedded Systems Interoperability Demonstration. Continue maturing the technologies developed under the WSOA to implement an interface between embedded systems operating on multiple tactical platforms with the C2 battlespace infosphere.	
<b>(U) \$60</b>	Continue development of the Embedded Information System Re-engineering Technology. Continue design and development of an automated re-engineering capability to evolve software for embedded information systems. Continue development of the software tools to implement re-engineering technologies.	
<b>(U) \$220</b>	Continue Real-Time (RT) Java for Embedded Systems to investigate RT Java applicability to the infosphere and embedded information system applications, in the context of open systems concepts, processes, and tools. Evaluate the capabilities and applicability of RT Java to the areas of architecture, distributed processing, and interoperability.	
<b>(U) \$977</b>	Develop air resources rapid reallocation tools to support the real-time automated allocation of embedded resources in a dynamic battlespace environment. Conduct requirements analyses to prioritize the development of reallocation technologies. Complete the system design and architecture using open system standards. Identify pilot programs to demonstrate the reallocation tools.	
<b>(U) \$3,326</b>	Total	
<b>Project 4851</b>	<b>Page 2 of 7 Pages</b>	<b>Exhibit R-2 (PE 0708612F)</b>

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		June 2001
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0708612F Computer Resources Support Improvement Program</b>	<b>4851</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$566 Continue the development of technologies and methodologies to incrementally upgrade legacy systems to support their cost-effective employment and sustainment. Demonstrate, in designated aircraft, the processes and tools for wrapping embedded software, real-time object request broker technology, and emulation technology in fielded weapon systems. Transition these technologies to fighter and cargo aircraft.</p> <p>(U) \$80 Continue supporting the development of the Real-Time Defense Information Infrastructure Common Operating Environment. Continue developing and testing technologies to improve the effectiveness of systems performing real-time command and control (C2) missions. Evaluate the effectiveness of these approaches in implementing a seamless information exchange between the different platforms operating in the battlespace.</p> <p>(U) \$334 Continue the development of Assured Middleware for Real-Time Embedded Systems (AMRES). Complete the design of the AMRES environment using commercial-off-the-shelf components and the Real-Time Common Object Request Broker Architecture to integrate all components. Mature and demonstrate the ability of AMRES to support real-time processes, fault-tolerance, and security in embedded systems.</p> <p>(U) \$612 Continue the Embedded Systems Interoperability Demonstration. Continue research activities to leverage open systems hardware, software, and simulated tactical communications links to provide real-time communications between multiple tactical platforms, an airborne C2 platform, and the emerging battlespace infosphere. Conduct simulation tests to evaluate the real-time communications capabilities. Conduct affordability analyses to support the demonstration.</p> <p>(U) \$560 Continue developing the Embedded Information System Re-engineering (EISR) technology demonstration. Complete development of an automated re-engineering capability to evolve software for embedded information systems. Complete development of the software tools to implement re-engineering technologies. Test and demonstrate an EISR system with an established pilot program. Transition the EISR technologies to customers.</p> <p>(U) \$224 Continue Real-Time (RT) Java for Embedded Systems to investigate RT Java applicability to the infosphere and embedded information system applications, in the context of open systems concepts. Demonstrate the functionality of legacy Operational Flight Programs (OFPs) implemented in RT Java. Analyze and compare the implementation of RT Java OFPs with current OFPs implemented in higher-order languages. Demonstrate the capability of RT Java OFPs to support the interoperability between the Command, Control, Communications, and Intelligence.</p> <p>(U) \$2,376 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>            This program is in Budget Activity 7, Operational System Development, because it provides support to operational systems.</p>		
Project 4851	Page 3 of 7 Pages	Exhibit R-2 (PE 0708612F)

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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**June 2001**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0708612F Computer Resources Support Improvement Program</b>	<b>PROJECT</b> <b>4851</b>
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(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2001 PBR)	0	2,356	3,363	TBD
(U) Appropriated Value	0	3,356		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions		-30		
(U) Adjustments to Budget Years Since FY 2001 PBR			-987	
(U) Current Budget Submit/FY 2002 PBR	0	3,326	2,376	TBD

(U) **Significant Program Changes:**  
In FY 2001, funding was moved to this PE from PE 0708611F, Project 673090.

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E										
(U) Other APPN										
(U) PE 0708611F/3080	2,237									4,593
(U) PE 0708611F/3400	19,417									19,417
(U) PE 0708612F/3080		2,138	2,328	2,378	2,433	2,479	2,583	2,651	Continuing	Continuing
(U) PE 0708612F/3400		13,988	14,410	13,782	14,151	14,162	15,023	14,957	Continuing	Continuing

(U) **E. Acquisition Strategy**  
All major contracts within this Program Element were awarded after full and open competition.

(U) **F. Schedule Profile**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>June 2001</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0708612F Computer Resources Support Improvement Program</b>
	<b>PROJECT</b> <b>4851</b>

**(U) F. Schedule Profile Continued**

	<u>FY 2000</u>				<u>FY 2001</u>				<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Adaptive Software Technology Development							*					
(U) Incremental Upgrade of Legacy Systems						*					X	
(U) Reconfigurable Aerospace Computer Emulator	*							X				
(U) Real-Time DII COE Support **						*						X
(U) Virtual Engineering Environment								X				
(U) Weapon System Open Architecture							*					
(U) Assured Middleware for Real-Time Embedded Systems							*			X		
(U) Embedded Systems Interoperability Demonstration								X			X	
(U) Embedded Information Systems Re-engineering				*			*					X
(U) Real-Time Java for Embedded Systems							*					X
(U) Air Resources Rapid Reallocation Tools								X				

X Denotes planned event  
 \* Denotes completed event  
 \*\* DII COE: Defense Information Infrastructure (DII) Common Operating Environment (COE)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program			PROJECT 4851		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2000</u>			<u>FY 2001</u>		<u>FY 2002</u>
(U)	Adaptive Software Technology Development							345		
(U)	Incremental Upgrade of Legacy Systems							165		566
(U)	Reconfigurable Aerospace Computer Emulator							340		
(U)	Real-Time Defense Information Infrastructure Common Operating Environment Support							75		80
(U)	Virtual Engineering Environment							250		
(U)	Weapon System Open Architecture							809		
(U)	Assured Middleware for Real-Time Embedded Systems							30		334
(U)	Embedded Systems Interoperability Demonstration							55		612
(U)	Embedded Information Systems Re-engineering							60		560
(U)	Real-Time Java for Embedded Systems							220		224
(U)	Air Resources Rapid Reallocation Tools							977		
(U)	Total							3,326		2,376
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
SAIC	DO	Various	N/A	N/A			250		Continuing	TBD
TRW	DO	Various	N/A	N/A			285		Continuing	TBD
Boeing	DO	Various	N/A	N/A			1,906	1,398	Continuing	TBD
Lockheed-Martin	DO	Various	N/A	N/A		810		896	Continuing	TBD
Other (RT DII COE)			N/A	N/A			75	82	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program				PROJECT 4851	
<b>(U) Government Furnished Property:</b>									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>						
<u>Support and Management Property</u>	<u>Vehicle</u>								
<u>Test and Evaluation Property</u>									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
Subtotal Product Development				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Support and Management						3,326	2,376	TBD	TBD
Subtotal Test and Evaluation									
Total Project						3,326	2,376	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0901218F Civilian Compensation Program</b>					PROJECT <b>4139</b>	
COST (\$ in Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4139 Civilian Compensation Program	6,902	7,143	7,019	7,149	7,306	7,467	7,690	7,921	0	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	
<p>(U) <b><u>A. Mission Description</u></b>                      This program element provides for payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81. The Department of Labor (DOL) administers this program and charges the Department of the Air Force for its employee costs; therefore, this is a MUST PAY bill for Air Force. The PE excludes manpower authorizations and costs.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b>                      (U) \$6,902 Required to continue a program to compensate employees assigned to RDT&amp;E facilities for worked-related injury or disease                      (U) \$6,902 Total</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$7,143 Required to continue a program to compensate employees assigned to RDT&amp;E facilities for worked-related injury or disease                      (U) \$7,143 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$7,019 Required to continue a program to compensate employees assigned to RDT&amp;E facilities for worked-related injury or disease.                      (U) \$7,019 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>                      This Program Element (PE) is in Budget Activity 7 in support of payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)											DATE June 2001	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0901218F Civilian Compensation Program						PROJECT 4139	
<b>(U) C. Program Change Summary (\$ in Thousands)</b>												
					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		<u>Total Cost</u>	
(U)	Previous President's Budget (FY 2001 PBR)				6,891		7,209		7,020		TBD	
(U)	Appropriated Value				6,973		7,209					
(U)	Adjustments to Appropriated Value											
	a. Congressional/General Reductions											
	b. Small Business Innovative Research											
	c. Omnibus or Other Above Threshold Reprogram				-38							
	d. Below Threshold Reprogram				-6							
	e. Rescissions				-27		-66					
(U)	Adjustments to Budget Years Since FY 2001 PBR								-1			
(U)	Current Budget Submit/FY 2002 PBR				6,902		7,143		7,019		TBD	
(U)	<u>Significant Program Changes:</u>											
	N/A											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>												
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	Other APPN											
(U)	Operation and Maintenance				22,679	23,528	25,245	25,759	26,789	27,860	0	TBD
<b>(U) E. Acquisition Strategy</b>												
	N/A											
<b>(U) F. Schedule Profile</b>												
					<u>FY 2000</u>			<u>FY 2001</u>			<u>FY 2002</u>	
					1	2	3	4	1	2	3	4
(U)	N/A											

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0901218F Civilian Compensation Program			PROJECT 4139		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>					<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>	
(U) n/a										
(U) Total										
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>Performing Organizations:</b>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
n/a										
<u>Product Development Organizations</u>										
n/a										
<u>Support and Management Organizations</u>										
n/a										
<u>Test and Evaluation Organizations</u>										
n/a										
(U) <b>Government Furnished Property:</b>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
n/a										
<u>Support and Management Property</u>										
n/a										
<u>Test and Evaluation Property</u>										
n/a										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE June 2001	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0901218F Civilian Compensation Program</b>			<b>4139</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						<u>Program</u>
NA						
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project						TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>June 2001</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>1001018F NATO AGS</b>					PROJECT <b>0002</b>	
COST (\$ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0002	NATO JSTARS	700	3,240	0	0	0	0	0	0	0	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	TBD
<p>(U) <b><u>A. Mission Description</u></b></p> <p>The NATO Staff Requirement (NSR) for an Alliance Ground Surveillance (AGS) System, Sep 97, states the requirement for a NATO owned and operated capability to '...detect, locate, recognize and track specified activities on and near the surface and disseminate related data in timely manner, and thereby contribute to the successful accomplishment of the NATO military operations....' In Nov 97 the NATO Conference of National Armaments Directors (CNAD) rejected a US 'fast track' offer of the US JSTARS system to meet the AGS requirement, and directed the AGS Provisional Project Structure (PPS) to look at fresh options to satisfy the requirement. In Dec 97 the US offered the JSTARS Radar Technology Insertion Program (RTIP) advanced sensor on a platform of NATO's choice. In Apr 98 the CNAD endorsed the PPS recommendation for conducting a one year Concept Definition Study (CDS) led by the Provisional Project Office (PPO). The US led the airborne portion of the CDS and presented a study based on the US RTIP advanced sensor system. In May 99 the CNAD authorized entrance into a 2-year, RTIP-based, project definition phase for interested nations, based on a proposal by Norway. This project definition effort has been named the NATO Trans Atlantic Advanced Radar (NATAR) and formal designation as a NATO Project has been granted. Nations that have agreed to participate in this effort to date are: US, Canada, Norway, Denmark, Luxembourg and Belgium. All NATO nations have been encouraged to join the effort and several have indicated interest in joining. In Aug 99 USD/AT&amp;L directed the Air Force to be lead service, with support of the Army, in carrying out overall US participation in this project and to be specifically responsible for the Air Segment. The Air Force's most significant contribution to NATAR is through participation in a Project Definition Office (PDO) in Brussels, BE. After signature of the multi-national MOU in Oct 00, the PDO began its two-year effort to prepare an international agreement, a program charter, and a request for proposal for a fully integrated and interoperable NATO owned and operated airborne ground surveillance system. FY01 funds will support both U.S. unique efforts to support the program as well as a NATO Call for Funds to support the multi-national PDO, for efforts through FY02. No funds have been requested for this program for FY02.</p> <p>(U) <b><u>FY 2000 (\$ in Thousands)</u></b></p> <p>(U) \$700                      Performed NATAR efforts</p> <p>(U) \$700                      Total</p>											
Project 0002			Page 1 of 5 Pages				Exhibit R-2 (PE 1001018F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																																																							
		June 2001																																																							
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																																																							
<b>07 - Operational System Development</b>	<b>1001018F NATO AGS</b>	<b>0002</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$3,240 Project Definition Office (PDO) support and support for NATO interoperability studies and efforts</p> <p>(U) \$3,240 Total</p> <p>The following net transaction is not reflected in the FY01 program total: BTR = +\$1,500K, ATR =0K, and SBIR = -\$100K. These transactions are not reflected in other sections of the R-Docs where an FY01 total is shown.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in Budget Activity 7, Operational System Development because it involves the modification of radar sensor technology currently fielded.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2001 PBR)</td> <td style="text-align: right;">0</td> <td style="text-align: right;">3,270</td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">0</td> <td style="text-align: right;">3,270</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td></td> <td style="text-align: right;">-7</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: right;">1,600</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: right;">0</td> <td style="text-align: right;">-23</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2001 PBR</td> <td style="text-align: right;">-900</td> <td></td> <td style="text-align: right;">0</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2002 PBR</td> <td style="text-align: right;">700</td> <td style="text-align: right;">3,240</td> <td style="text-align: right;">0</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> None</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2001 PBR)	0	3,270		TBD	(U) Appropriated Value	0	3,270			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-7			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	1,600				e. Rescissions	0	-23			(U) Adjustments to Budget Years Since FY 2001 PBR	-900		0		(U) Current Budget Submit/FY 2002 PBR	700	3,240	0	TBD
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																																																					
(U) Previous President's Budget (FY 2001 PBR)	0	3,270		TBD																																																					
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Project 0002		Exhibit R-2 (PE 1001018F)																																																							

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>June 2001</b>					
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>1001018F NATO AGS</b>				PROJECT <b>0002</b>				
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>												
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E												
(U) Other APPN												
N/A												
<b>(U) E. Acquisition Strategy</b>												
The U.S. and five other NATO nations (Canada, Belgium, Denmark, Norway, and Luxembourg) are participating in a Project Definition effort for a NATO owned and operated ground surveillance capability, based on the U.S. Multi-Platform Radar Technology Insertion Program (MP-RTIP) advanced radar. The Project Definition work is expected to conclude in 2002/2003 time frame, and is expected to produce documentation to be presented to NATO nations necessary for a decision on whether to proceed with acquisition of an airborne ground surveillance system based on this effort. This documentation will include an acquisition strategy for the NATAR project reflected in the recommended Request For Proposal.												
<b>(U) F. Schedule Profile</b>												
		<u>FY 2000</u>				<u>FY 2001</u>			<u>FY 2002</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CNAD authorization, start of RTIP- based Project Definition effort												
(U) Standup of Project Definition Office				*								
(U) International Agreement (MOU) Signed						*						
(U) Program Charter Prepared												X
(U) Request for Proposal (RFP) Prepared												X
* - Denotes Completed Event												
X- Denotes Planned Event												
Project 0002			Page 3 of 5 Pages				Exhibit R-2 (PE 1001018F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE June 2001					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 1001018F NATO AGS			PROJECT 0002				
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2000</u>		<u>FY 2001</u>			<u>FY 2002</u>
(U)	NATO Studies					0		0			
(U)	Other Government Costs										
(U)	Provisional Project Office Support										
(U)	Project Definition Office Support and NATO Interoperability studies and efforts					700		3,240			
(U)	Total					700		3,240			
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2000</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
Northrop Grumman	IDIQ	Apr 96	2,376	2,376	2,376					2,376	
Rome Labs	Fixed Price	Sep 96	485	485	485					485	
Northrop Grumman	IDIQ	Jan 97	3,782	3,782	3,782					3,782	
Northrop Grumman	IDIQ	Dec 97	637	637	637					637	
Northrop Grumman	IDIQ	May 98	944	944	944					944	
Northrop Grumman	IDIQ	Sep 98	1,404	1,404	1,404					1,404	
Northrop Grumman	IDIQ	Dec 98	47	47	47					47	
Northrop Grumman	IDIQ	May 99	520	520	520					520	
Northrop Grumman	IDIQ	Feb 01									
Project Development Office					477	700	2,101			3,278	
<u>Support and Management Organizations</u>											
ESC (Provisional Project Office)					24				0	24	
MITRE						3,075			0	3,075	
	Cost Plus Award Fee	Oct 94/ Jun 96									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE June 2001		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 1001018F NATO AGS			PROJECT 0002		
<b>(U) Performing Organizations Continued:</b>									
<u>Support and Management Organizations</u>									
TEMS	IDIQ	Mar - May		2,592		889		0	3,481
		96							
Miscellaneous	Various			900		250		0	1,150
	Contracts								
<u>Test and Evaluation Organizations</u>									
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2000</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				10,672	700	2,101			13,473
Subtotal Support and Management				6,591		1,139		0	7,730
Subtotal Test and Evaluation									
Total Project				17,263	700	3,240		0	21,203

1. COMPONENT <b>AIR FORCE (AFMC)</b>	<b>FY 2000 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION <b>EGLIN AIR FORCE BASE, FLORIDA</b>			4. PROJECT TITLE <b>Minor Construction &lt; \$500,000</b>		
5. PROGRAM ELEMENT <b>65807F</b>	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST (\$000) <b>149.0</b>		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY2000					
Install Generators Building 68		<b>LS</b>			124
Install Heaters GWEF Test Facility		<b>LS</b>			<u>25</u>
					149
<b>10. DESCRIPTION OF PROPOSED WORK</b> Install emergency generators in hanger 68 and install electric heaters in Guided Weapons Evaluation Facility (GWEF) building 374.					
<b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).					
<b>PROJECT:</b> Multiple projects as described above.					
<b>REQUIREMENT:</b> The 16 Test Squadron Bomber Electronic Warfare labs require an emergency power source to support their mission. An explosion proof heating system for Rooms 152, 155 and 156 (hydraulic pump rooms) is necessary to prevent freezing of heat exchangers during hard freezes					
<b>CURRENT SITUATION:</b> There is no emergency power available in the facility. Heat exchangers freeze during extreme cold weather.					
<b>IMPACT IF NOT PROVIDED:</b> These labs will not be mission ready to support the development and validation/verification of mission data files for the bomber aircraft in the combat air force. Test programs will be delayed until temperature is raised to allow equipment to properly function.					

1. COMPONENT  <b>AIR FORCE</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE																																																																						
3. INSTALLATION AND LOCATION  EDWARDS AIR FORCE BASE, CALIFORNIA			4. PROJECT TITLE  AIRBORNE LASER COMPLEX UPGRADE																																																																							
5. PROGRAM ELEMENT  63319F	6. CATEGORY CODE  311-114	7. PROJECT NUMBER  FSPM981305	8. PROJECT COST (\$000)  7,000																																																																							
9. COST ESTIMATES																																																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">ITEM</th> <th style="width: 5%;">U/M</th> <th style="width: 15%;">QUANTITY</th> <th style="width: 10%;">UNIT COST</th> <th style="width: 10%;">COST (\$000)</th> </tr> </thead> <tbody> <tr> <td>Airborne Laser Complex Upgrade</td> <td></td> <td></td> <td></td> <td style="text-align: right;">5,171.5</td> </tr> <tr> <td>  Construct Ground Press Recov Assy Area</td> <td>LS</td> <td></td> <td></td> <td style="text-align: right;">( 621.0)</td> </tr> <tr> <td>  Facility Upgrades (B151, 369, 370)</td> <td>LS</td> <td></td> <td></td> <td style="text-align: right;">(1,948.0)</td> </tr> <tr> <td>  Construct Systems Integration Lab</td> <td>LS</td> <td></td> <td></td> <td style="text-align: right;">(2,602.5)</td> </tr> <tr> <td>SUPPORTING FACILITIES</td> <td></td> <td></td> <td></td> <td style="text-align: right;">849.0</td> </tr> <tr> <td>  Construct Fuel Farm System</td> <td>LS</td> <td></td> <td></td> <td style="text-align: right;">( 431.0)</td> </tr> <tr> <td>  Construct Neutralization System</td> <td>LS</td> <td></td> <td></td> <td style="text-align: right;">( 268.0)</td> </tr> <tr> <td>  Spur Containment Modifications</td> <td>LS</td> <td></td> <td></td> <td style="text-align: right;">( 150.0)</td> </tr> <tr> <td>SUBTOTAL</td> <td></td> <td></td> <td></td> <td style="text-align: right;">6,020.5</td> </tr> <tr> <td>CONTINGENCY (10%)</td> <td></td> <td></td> <td></td> <td style="text-align: right;"><u>602.0</u></td> </tr> <tr> <td>TOTAL CONTRACT COST</td> <td></td> <td></td> <td></td> <td style="text-align: right;">6,622.5</td> </tr> <tr> <td>SUPERVISION, INSPECTION, AND OVERHEAD (5.7%)</td> <td></td> <td></td> <td></td> <td style="text-align: right;"><u>377.5</u></td> </tr> <tr> <td>TOTAL FUNDED COST</td> <td></td> <td></td> <td></td> <td style="text-align: right;">7,000.0</td> </tr> </tbody> </table>					ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)	Airborne Laser Complex Upgrade				5,171.5	Construct Ground Press Recov Assy Area	LS			( 621.0)	Facility Upgrades (B151, 369, 370)	LS			(1,948.0)	Construct Systems Integration Lab	LS			(2,602.5)	SUPPORTING FACILITIES				849.0	Construct Fuel Farm System	LS			( 431.0)	Construct Neutralization System	LS			( 268.0)	Spur Containment Modifications	LS			( 150.0)	SUBTOTAL				6,020.5	CONTINGENCY (10%)				<u>602.0</u>	TOTAL CONTRACT COST				6,622.5	SUPERVISION, INSPECTION, AND OVERHEAD (5.7%)				<u>377.5</u>	TOTAL FUNDED COST				7,000.0
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<p><b>10. DESCRIPTION OF PROPOSED WORK:</b> Modify Birk Flight Test Facility to accommodate ABL test and R&amp;D equipment. Work includes infrastructure for a Ground Pressure Recovery Assembly (GPRA), Systems Integration Lab (SIL), and associated facility upgrades at B151. Construct infrastructure for a laser fuel farm, and a neutralization subsystem at B369 and B370. (AFI 65-601, Chapter 13.15.5 Contractor Facility)</p>																																																																										
<p><b>11. REQUIREMENT:</b> As Required</p> <p><b>PROJECT:</b> Modify existing Birk Flight Test Facility (BFTF) (Building 151 and associated areas) and install necessary R&amp;D equipment to support the Program Definition Risk Reduction (PDRR) Airborne Laser (ABL) RDT&amp;E program.</p> <p><b>REQUIREMENT:</b> The PDRR ABL program is designed to exploit powerful technologies which have evolved over the past 20 years and integrate them into a revolutionary airborne weapon system which is lethal to boosting enemy Theater Ballistic Missiles (TBMs) at extremely long ranges. The ABL also plays a significant role in assisting the other joint tiers in the Theater Missile Defense architecture by reducing the number of targets, providing missile trajectory information to the theater point defenses, and identifying TBM launch points for counter force strikes against mobile launchers. Test facilities must be capable of supporting a test program that integrates a multi megawatt Chemical Oxygen Iodine Laser (COIL) and beam control system with a large aperture telescope into a Boeing 747 400F aircraft. Since the PDRR ABL aircraft will be a first-of-its-kind, modifications and equipment installation will be designed and modified as the program proceeds. With the facility capabilities of BFTF, building a new temporary facility for the PDRR ABL is an unnecessary expense.</p> <p><b>CURRENT SITUATION:</b> Current BFTF facilities were designed to support wide body aircraft like the Boeing 747-400F. However, limited facility infrastructure modifications are needed to support the weapon</p>																																																																										

1. COMPONENT  <b>AIR FORCE</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>	2. DATE
3. INSTALLATION AND LOCATION  EDWARDS AIR FORCE BASE, CALIFORNIA		
4. PROJECT TITLE  AIRBORNE LASER COMPLEX UPGRADE	5. PROJECT NUMBER  FSPM981305	
<p>test and operation of high-energy laser systems and laboratory equipment in the SIL. The exterior apron site chosen to mount a pressure recovery system, designed to simulate PDRR ABL operating altitudes, lacks utility support. B369 and B370 lack infrastructure to support a laser fuel farm or a neutralization system. Upgrades to these facilities are necessary to support the ABL development.</p> <p><b><u>IMPACT IF NOT PROVIDED:</u></b> Testing and delivery of our nations next generation laser systems will be negatively impacted. Developmental milestones will not be met, resulting in higher costs to the contractor's overhead, daily operations, and increasing the taxpayer burden. Significant costs and schedule delays will be incurred if the government cannot provide the facilities required by the integration contractor. Existing contractor facilities are not sufficient to support the PDRR ABL.</p> <p><b><u>ADDITIONAL:</u></b> 10 USC 2351, 2353, and 2358 authorizes the use of RDT&amp;E funds to construct facilities necessary for the performance of a contract. This construction project supports the PDRR ABL integration contractor.</p>		

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION  <b>WRIGHT-PATTERSON AIR FORCE BASE, OHIO</b>			4. PROJECT TITLE  <b>Minor Construction &lt; \$500,000</b>		
5. PROGRAM ELEMENT  62102F	6. CATEGORY CODE	7. PROJECT NUMBER  ZHTV990043	8. PROJECT COST (\$000)  <b>350.0</b>		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY2001  Alter Building 22B for Coatings Process Line		<b>LS</b>			350.0
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Demolish existing interior walls, construct new interior walls, install coatings process line, fume hoods, exhaust fans, acid neutralization pit, deionized water unit, and all support utilities.					
<p><b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).</p> <p><b>PROJECT:</b> Alter Building 22B to support the new Coatings Process Line</p> <p><b>REQUIREMENT:</b> A ground floor location is needed to accommodate the new coatings and corrosion control equipment and process line to provide a functional work flow for all R&amp;D coatings and corrosion projects.</p> <p><b>CURRENT SITUATION:</b> An existing coatings process line is located in a separate building above a basement work area and is not capable of integrating the new equipment and process into the existing line. Space to be vacated is needed to support the expansion of the Electrochemical Testing area.</p> <p><b>IMPACT IF NOT PROVIDED:</b> The coating process line will continue to exist over the basement work area with the potential for a toxic spill to seep into the basement area creating a hazardous environment for the personnel. Critically needed space will not be available for other work units in the directorate.</p>					

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION  <b>HILL AIR FORCE BASE, UTAH</b>			4. PROJECT TITLE  <b>Minor Construction &lt; \$500,000</b>		
5. PROGRAM ELEMENT  64851F	6. CATEGORY CODE  222-222	7. PROJECT NUMBER  KRSM003011	8. PROJECT COST (\$000)  480.0		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY 2001:  Alter Building 2016 for Propulsion System Rocket Engine (PSRE) Modifications		<b>LS</b>			480.0
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Remodel building 2016 to include a temporary airlock, two conductive floors, a window in the test bay, more helium pressure intensification equipment, increase helium storage capability, and installation of a one ton crane.					
<b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).  <b>PROJECT:</b> Remodel building 2016 for liquid PSRE Life Extension Program (LEP).  <b>REQUIREMENT:</b> The life expectancy of the Minuteman Stage IV PSRE must be extended to the year 2020. The existing PSRE stages must be overhauled and their life limiting components replaced.  <b>CURRENT SITUATION:</b> There is no facility available to support the disassembly, replacement of life limiting components, testing and re-assembly of the rocket motors.  <b>IMPACT IF NOT PROVIDED:</b> The Air Force is at risk of missiles coming off alert because of a lack of serviceable PSRE assets.					

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION  <b>Hill AIR FORCE BASE, UTAH</b>		4. PROJECT TITLE  <b>Minor Construction &lt; \$500,000</b>			
5. PROGRAM ELEMENT  64851F	6. CATEGORY CODE  222-222	7. PROJECT NUMBER  KRSM001522	8. PROJECT COST (\$000)  487.0		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY2001:  Propulsion System Rocket Engine (PRSE) Centrifuge Facility		<b>LS</b>			487.0
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Steel structure with concrete footing, foundations and floors. Includes a clean room, explosion proof fixtures, and all utilities necessary for a complete and usable facility.					
<p><b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).</p> <p><b>PROJECT:</b> Construct a liquid PSRE Centrifuge Facility.</p> <p><b>REQUIREMENT:</b> A facility is required to house the centrifuge and related test equipment necessary to insure the PSRE life extension modification kits will withstand the environments they will be subjected to during their life extension.</p> <p><b>CURRENT SITUATION:</b> Centrifuge testing was previously accomplished at Arnold AFB. The existing test facility was dismantled when the life expectancy of the PSRE was the year 2000. No facility exists to accomplish the required testing. The old centrifuge and associated equipment are currently on site at Edwards AFB.</p> <p><b>IMPACT IF NOT PROVIDED:</b> The PSRE certification testing cannot be accomplished and the Minuteman III system will degrade below acceptable reliability requirements. The Air Force will risk missiles coming off alert because of the lack of reliable PSRE assets.</p>					

1. COMPONENT <b>AIR FORCE (AFMC)</b>		<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION <b>EDWARDS AIR FORCE BASE, CALIFORNIA</b>			4. PROJECT TITLE <b>Minor Construction &lt; \$1,000,000</b>			
5. PROGRAM ELEMENT  65876F	6. CATEGORY CODE  211-183	7. PROJECT NUMBER  FSPM992502	8. PROJECT COST (\$000)  995.0			
9. COST ESTIMATES						
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>	
Minor Construction using RDT&E funds for FY2001:						
Multi Axis Thrust Stand (MATS) North Base Site		<b>LS</b>			555.0	
SUPPORTING FACILITIES					340.0	
Utilities		<b>LS</b>			(80.0)	
Site Work		<b>LS</b>			(260.0)	
SUBTOTAL					895.0	
CONTINGENCY (5%)					<u>45.0</u>	
TOTAL CONTRACT COST					940.0	
SUPERVISION, INSPECTION, AND OVERHEAD (5.7%)					<u>55.0</u>	
TOTAL FUNDED COST					995.0	
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Construct a reinforced concrete Multi Axis Thrust Stand at North base GE site. Provide reinforced concrete pad and utilities to support remote electrical, fueling, and monitoring while test vehicle is on a raised stand. The test stand structure will be procured from NASA AMES at Moffett Field, CA.						
<b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).						
<b>PROJECT:</b> Construct Multi Axis Thrust Stand (MATS), North base GE site.						
<b>REQUIREMENT:</b> A MATS capable of hoisting a 60 ton test vehicle up to 75' above ground is required to field test multi-dimensional thrust systems. Utilities, control and data connections will be made to the existing control bunker. A reinforced concrete pad is needed to withstand the weight and thrust of multiple test vehicles with no restrictions.						
<b>CURRENT SITUATION:</b> The existing thrust stand, located at pad 18, is limited to measuring thrust along the horizontal axis. There is no capability for thrust measurement along the vertical axis, so testing of multi-dimensional thrust systems requires calculation of the vertical thrust component. Additionally, the existing thrust stand cannot hoist a test vehicle above ground level, so ground effect phenomena cannot be adequately explored and characterized. A Multi Axis Thrust Stand exists at NASA AMES that is not being used. The stand will be transferred to the North Base GE Site, where Dryden Flight Research Center (DFRC), NASA or Joint Strike Fighter Task Force will utilize the facility in testing the new vectored thrust/VSTOL vehicles.						

1. COMPONENT  <b>AIR FORCE</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>	2. DATE
3. INSTALLATION AND LOCATION  EDWARDS AIR FORCE BASE, CALIFORNIA		
6. PROJECT TITLE  AIRBORNE LASER COMPLEX UPGRADE	7. PROJECT NUMBER  FSPM981305	
<p><b><u>IMPACT IF NOT PROVIDED:</u></b> Costs incurred in research and development will continue to rise, and program development will be negatively impacted by the inability to accurately measure multi-dimensional thrust performance. This will impact the development of the next generation of aircraft.</p> <p><b><u>ADDITIONAL:</u></b> Office of Under Secretary of Defense letter dated 18 Mar 96; subject "Implementation of the DoD Laboratory Revitalization Demonstration Program" allows commanders of selected defense laboratories greater flexibility in undertaking facility modernization initiatives by increasing the maximum dollar threshold applicable to minor construction projects. The legislation raises the threshold for minor military construction for the laboratories included in the program. Facilities and structures constructed under this authority should be in direct support of research, development, test, and evaluation at the designated laboratories. AFFTC has been designated as eligible for this program.</p>		

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION  <b>EGLIN AIR FORCE BASE, FLORIDA</b>			4. PROJECT TITLE  <b>Minor Construction &lt; \$500,000</b>		
5. PROGRAM ELEMENT  21010F	6. CATEGORY CODE  312-477	7. PROJECT NUMBER  FTFA001157	8. PROJECT COST (\$000)  <b>480.0</b>		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY2001:  ADAL Facility for Temp Electromagnetic Weapon Target		<b>LS</b>			480.0
<p><b>10. DESCRIPTION OF PROPOSED WORK:</b> Modify building 12522 to protect against blast effects from proposed adjacent, non-occupied target facility. Add a multi-room, reinforced concrete target facility with slab on grade with heavy foundation, concrete roof, and reinforced overpressure exhaust duct. Extend asphalt pavement; relocate septic tank, HVAC tower, and propane tank. Fence entire facility.</p>					
<p><b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).</p> <p><b>PROJECT:</b> ADAL Building 12522 for temporary electromagnetic weapon target.</p> <p><b>REQUIREMENT:</b> A target facility is required to house electromagnetic munitions system components to test their ability to withstand various kill mechanisms and to develop and evaluate methods to protect these components.</p> <p><b>CURRENT SITUATION:</b> No facility exists to meet this test requirement. Previous work with electromagnetic munition system concepts and components has used simulations to test the capability of the various components.</p> <p><b>IMPACT IF NOT PROVIDED:</b> The Enhanced Precision Guided Munitions (EGPM) program has a Preliminary Design Review (PDR) scheduled for 1 October 2001 that requires subcomponent demonstration with high explosives in a realistic target. The PEM for this program has indicated that any significant delays in this PDR would result in cancellation of this concept.</p>					

1. COMPONENT <b>AIR FORCE (AFMC)</b>	<b>FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION <b>HANSCOM AIR FORCE BASE, MASSACHUSETTS</b>			4. PROJECT TITLE <b>Minor Construction &lt; \$500,000</b>		
5. PROGRAM ELEMENT 28060F	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST (\$000) 14.0		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY 2001:  Alter MITER Lab Area		<b>LS</b>			14.0
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Reconfigure existing lab area to provide controlled access for Air Force personnel.					
<b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).  <b>PROJECT:</b> Remodel four rooms in the MITER facility  <b>REQUIREMENT:</b> A controlled area is required to accommodate the Time Critical Targeting (TCT) capability being acquired by ESC at Hanscom AFB.  <b>CURRENT SITUATION:</b> Existing area is uncontrolled lab space and does not provide the level of security required for the new mission.  <b>IMPACT IF NOT PROVIDED:</b> Area will not be certified for use to support the mission.					

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE																														
3. INSTALLATION AND LOCATION  <b>KIRTLAND AIR FORCE BASE, NEW MEXICO</b>			4. PROJECT TITLE  <b>Minor Construction &lt; \$500,000</b>																															
5. PROGRAM ELEMENT  62605F	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST (\$000)  <b>840.0</b>																															
9. COST ESTIMATES																																		
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Construct Parking Area	<b>LS</b>			67																														
				840																														
<b>10. DESCRIPTION OF PROPOSED WORK</b> Construct Sensitive Compartmented Information Facilities (SCIF) in building 497, construct water line to High Energy Research Technology Facility (HERTF), and construct additional asphalt parking area for buildings in the 700 area.																																		
<p><b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).</p> <p><b>PROJECT:</b> Multiple projects as described above.</p> <p><b>REQUIREMENT:</b> Additional SCIF space is required to support the DE Headquarters and the DE Satellite Assessment Center. Potable water is required to all permanent facilities per OSHA Regulation 29 CFR 1910.141(b)(1)(I). Paved parking area is needed to reduce particle contamination in labs and reduce the interference with down-range laser propagation from newly constructed labs.</p> <p><b>CURRENT SITUATION:</b> Adequate SCIF space is not available, non potable water is used for washing hands, and dust from unpaved parking lots impact lab equipment and laser testing.</p> <p><b>IMPACT IF NOT PROVIDED:</b> Some classified work may be delayed or executed in a shared SCIF. Non potable water will continue to be used in violation of OSHA requirements. Dust will continue to impact lab equipment and laser test programs.</p>																																		

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION  <b>MAUI SPACE SURVEILLANCE SITE, HAWAII</b>			4. PROJECT TITLE  <b>Minor Construction &lt; \$500,000</b>		
5. PROGRAM ELEMENT  35876F	6. CATEGORY CODE	7. PROJECT NUMBER  PNEG961090	8. PROJECT COST (\$000)  431.1		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY2002:  Construct Utility Enclosures		<b>LS</b>			431.1
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Construct two utility enclosures for existing emergency generators and chillers.					
<p><b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).  <b>PROJECT:</b> Construct utility enclosures.</p> <p><b>REQUIREMENT:</b> Utility enclosures are required to protect mission critical equipment from extreme climate conditions that include heavy rains and 150 MPH winds.</p> <p><b>CURRENT SITUATION:</b> Existing equipment is unprotected and maintenance work must be performed outdoors in inclement weather.</p> <p><b>IMPACT IF NOT PROVIDED:</b> Life expectancy of the equipment will be diminished and maintenance workers will continue to work on electrical components in wet conditions.</p>					

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION  <b>ARNOLD AIR FORCE BASE, TENNESSE</b>			4. PROJECT TITLE  <b>Minor Construction &lt; \$500.000</b>		
5. PROGRAM ELEMENT  65807F	6. CATEGORY CODE	7. PROJECT NUMBER  ANZY009110	8. PROJECT COST (\$000)  290.0		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY2002:  SL2/SL3 Support Building		<b>LS</b>			290.0
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Construct support building					
<p><b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).</p> <p><b>PROJECT:</b> Construct SL2/SL3 support building.</p> <p><b>REQUIREMENT:</b> A support building is required to assemble turbine engines and associated test articles and instrumentation in preparation for testing and to provide a staging area for additional test hardware required to support configuration changes.</p> <p><b>CURRENT SITUATION:</b> Build up of test components and instrumentation is currently accomplished in the adjacent test cell, if available, or in the test cell itself. Test cell usage is higher than originally planned and is supporting additional test programs that were not part of the original test mission. Use of the existing test cells for staging and configuration reduce the time available for testing below what is needed to support the total test mission.</p> <p><b>IMPACT IF NOT PROVIDED:</b> Test cells will continue to be used for prep, installation and configuration changes and availability of the test cells for testing will not support mission requirements.</p>					

1. COMPONENT  <b>AIR FORCE (AFMC)</b>	<b>FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)</b>			2. DATE	
3. INSTALLATION AND LOCATION  <b>EGLIN AIR FORCE BASE, FLORIDA</b>			4. PROJECT TITLE  <b>Minor Construction &lt; \$500.000</b>		
5. PROGRAM ELEMENT  65807F	6. CATEGORY CODE  Multi	7. PROJECT NUMBER  Multi	8. PROJECT COST (\$000)  <b>820.0</b>		
9. COST ESTIMATES					
<b>ITEM</b>		<b>U/M</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>COST (\$000)</b>
Minor Construction using RDT&E funds for FY2002:					
FTFA880252 Upgrade Test Project Building		<b>LS</b>			400.0
FTFA971041 Construct Munitions Test Facility		<b>LS</b>			<u>420.0</u>
Total FY2001 Minor Construction					<b>820.0</b>
<b>10. DESCRIPTION OF PROPOSED WORK:</b> Expand existing facility to accommodate test mission and construct a new facility to replace existing munitions test trailers.					
<b>11. REQUIREMENT:</b> Unspecified Minor Construction (13.15.4).					
<b>PROJECT:</b> Multiple Construction projects as described above					
<b>REQUIREMENT:</b> Construction to add new bay for bathrooms and office areas, a new parking lot and loading ramp to accommodate additional munitions test personnel. Construct a new facility to replace three doublewide trailers to support munitions test personnel.					
<b>CURRENT SITUATION:</b> Existing facility cannot accommodate additional personnel and trailers are a very inefficient and costly alternative to a permanent facility.					
<b>IMPACT IF NOT PROVIDED:</b> Test customers cannot be supported and munitions personnel will continue to operate out of inefficient trailer space.					

**COMBATING TERRORISM**  
**DEPARTMENT OF THE AIR FORCE**  
**Research, Development, Test and Evaluation**

**APPROPRIATION SUMMARY**

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Budget Activity 5 - Engineering & Manufacturing Development (EMD)	4.644	5.645	5.560
Budget Activity 5 - Management Support	-	1.011	1.755
Budget Activity 7 - Operational System Development	1.407	0.463	0.472
	<b>6.051</b>	<b>7.119</b>	<b>7.787</b>
Physical Security Equipment			
Budget Activity 5, PE 0604617F	-	1.011	1.755
Security and Investigative Matters			
Budget Activity 7, PE 0305128F	1.407	0.463	0.472
Security Forces/Technicians	4.644	5.645	5.560
Budget Activity 5, Management Support			
<b>TOTAL FUNDING</b>	<b>6.051</b>	<b>7.119</b>	<b>7.787</b>

CbT-1 Exhibit (AF RDTE extract)