

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

February 2003

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303142A - SATCOM Ground Environment (SPACE)

| COST (In Thousands) | FY 2002 Actual | FY 2003 Estimate | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | Cost to Complete | Total Cost |
|----------------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|
| Total Program Element (PE) Cost | 43059 | 68915 | 87352 | 64538 | 62205 | 105953 | 101596 | 95958 | Continuing | Continuing |
| 253 DSCS-DCS (PHASE II) | 12673 | 11618 | 13545 | 13385 | 13756 | 10665 | 9346 | 9526 | Continuing | Continuing |
| 384 SMART -T | 18376 | 16596 | 26201 | 12802 | 0 | 0 | 0 | 0 | 0 | 90647 |
| 456 MILSATCOM SYSTEM ENGINEERING | 12010 | 40701 | 47606 | 38351 | 48449 | 81808 | 75613 | 74482 | Continuing | Continuing |
| 562 MBAND INT SAT TERM MIST | 0 | 0 | 0 | 0 | 0 | 13480 | 16637 | 11950 | 0 | 13942 |

A. Mission Description and Budget Item Justification: Military Satellite Communication (MILSATCOM) systems are joint program/project efforts to satisfy ground mobile requirements for each Service, the Joint Chiefs of Staff (JCS), the National Command Authority, the combatant commanders, the National Security Agency, the Office of the Secretary of Defense, and other governmental, non-DoD users. The worldwide MILSATCOM systems are: Ultra High Frequency (UHF) Follow-On Satellite System; Air Force Satellite (FLTSAT/AFSAT) system; the Mobile User Objective System (MUOS); the Super High Frequency (SHF) Defense Satellite Communications System (DSCS); the Wideband Gapfiller System (WGS), the Extremely High Frequency (EHF) and Advanced Extremely High Frequency (AEHF) MILSTAR system; the MILSTAR Communication Planning Tool-integrated (MCPT-I); the Joint SATCOM Planning and Tools; and the Transformation Communication System (TCS), all of these systems are required to support legacy, interim and emerging communication space architectures and Objective Force requirements. The Army is responsible for developing and procuring satellite terminals, satellite control subsystems, communication subsystems, and all related equipment. This responsibility also includes maintaining the life cycle logistics support required to achieve end-to-end connectivity and interoperability, satisfying JCS Command, Control, Communications and Intelligence (C3I) in support of the President, JCS, combatant commanders, Military Departments, Department of State, and other government Departments and Agencies.

This program is designated as a DoD Space Program

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)**February 2003**

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303142A - SATCOM Ground Environment (SPACE)

| <u>B. Program Change Summary</u> | FY 2002 | FY 2003 | FY 2004 | FY 2005 |
|---|---------|---------|---------|---------|
| Previous President's Budget (FY 2003) | 44647 | 72244 | 80999 | 53676 |
| Current Budget (FY 2004/2005 PB) | 43059 | 68915 | 87352 | 64538 |
| Total Adjustments | -1588 | -3329 | 6353 | 10862 |
| Congressional program reductions | | -990 | | |
| Congressional rescissions | | | | |
| Congressional increases | | | | |
| Reprogrammings | -397 | -396 | | |
| SBIR/STTR Transfer | -1191 | -1943 | | |
| Adjustments to Budget Years | | | 6353 | 10862 |

FY04 increase of 6.563M and FY05 increase of 12.096M in Project 384 (SMART-T) to fund AEHF development effort.

| ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) | | | | | | | | February 2003 | | |
|--|-------------------|---------------------|---------------------|--|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | PROJECT 253 | | |
| COST (In Thousands) | FY 2002 Actual | FY 2003 Estimate | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | Cost to Complete | Total Cost |
| 253 DSCS-DCS (PHASE II) | 12673 | 11618 | 13545 | 13385 | 13756 | 10665 | 9346 | 9526 | Continuing | Continuing |
| <p><u>A. Mission Description and Budget Item Justification:</u> This project provides funds to develop strategic and tactical Ground Subsystem equipment in support of Joint Chiefs of Staff (JCS) validated Command, Control, Communications and Intelligence (C3I) requirements for the worldwide Super High Frequency (SHF) Defense Satellite Communications System (DSCS), Wideband Gapfiller System (WGS), and the Transformational Communications (TC) SATCOM programs. Continuing upgrades for the DSCS, WGS, and TC SATCOM are vital to support the emerging power projection and rapid deployment role of the Armed Forces. DSCS, WGS, and TC SATCOM provide warfighters multiple channels of tactical connectivity as well as interfaces with strategic networks and national decision-makers. This system supports the legacy transition path of the Transformation Campaign Plan (TCP). No Defense Emergency Response Funds (DERF) were provided to this project.</p> | | | | | | | | | | |
| <u>Accomplishments/Planned Program</u> | | | | | | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | |
| Continue the development of the DSCS Integrated Management System (DIMS) Interface Software program | | | | | | 3429 | 4344 | 5283 | 4880 | |
| Continue the development of the Common Network Planning Software (CNPS) program | | | | | | 7193 | 5105 | 5743 | 4354 | |
| TCS-SATCOM architecture | | | | | | 0 | 0 | 274 | 1764 | |
| Continue SATCOM Engineering Lab (SEL), PM Admin, and Systems Engineering Technical Assistance (SETA) efforts | | | | | | 2051 | 2169 | 2245 | 2387 | |
| Totals | | | | | | 12673 | 11618 | 13545 | 13385 | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|--------|-------|-------|-------|--|-------|-------|----------------------|-----------------------|------------|-----------------------------|--------|-------|-------|-------|-------|-------|-------|-------|------------|------------|
| ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) | | | | | | | | February 2003 | | | | | | | | | | | | | |
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | PROJECT 253 | | | | | | | | | | | | |
| <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; margin-bottom: 10px;"> <div style="width: 30%;">B. Other Program Funding Summary</div> <div style="width: 15%; text-align: center;"><u>FY 2002</u></div> <div style="width: 10%; text-align: center;"><u>FY 2003</u></div> <div style="width: 10%; text-align: center;"><u>FY 2004</u></div> <div style="width: 10%; text-align: center;"><u>FY 2005</u></div> <div style="width: 10%; text-align: center;"><u>FY 2006</u></div> <div style="width: 10%; text-align: center;"><u>FY 2007</u></div> <div style="width: 10%; text-align: center;"><u>FY 2008</u></div> <div style="width: 10%; text-align: center;"><u>FY 2009</u></div> <div style="width: 10%; text-align: center;"><u>To Compl</u></div> <div style="width: 10%; text-align: center;"><u>Total Cost</u></div> </div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">DSCS Other Procurement Army</td> <td style="width: 15%; text-align: center;">104784</td> <td style="width: 10%; text-align: center;">87376</td> <td style="width: 10%; text-align: center;">98272</td> <td style="width: 10%; text-align: center;">94475</td> <td style="width: 10%; text-align: center;">55381</td> <td style="width: 10%; text-align: center;">51587</td> <td style="width: 10%; text-align: center;">85242</td> <td style="width: 10%; text-align: center;">95499</td> <td style="width: 10%; text-align: center;">Continuing</td> <td style="width: 10%; text-align: center;">Continuing</td> </tr> </table> <div style="margin-top: 20px;"> <p>C. Acquisition Strategy: The DSCS Integrated Management System (DIMS) and Common Network Planning Software (CNPS) are software programs and will not have follow-on production programs. DIMS provides the capability to electronically disseminate network plans to the monitoring and controlling DSCS Operations Control System (DOCS) subsystems, and retrieve and display subsystem monitoring data. It also provides a comprehensive view of network operations at DSCS Operations Centers and DISA management sites. CNPS will plan strategic and Ground Mobile Forces (GMF) satellite communication networks for DSCS, Wideband Gapfiller, and commercial satellites. DIMS and CNPS will be installed at DSCS Operations Centers and DISA Management Sites at worldwide locations. A Transformational Communications (TC) SATCOM architecture will be prepared prior to development of any TC SATCOM equipments.</p> </div> | | | | | | | | | | | DSCS Other Procurement Army | 104784 | 87376 | 98272 | 94475 | 55381 | 51587 | 85242 | 95499 | Continuing | Continuing |
| DSCS Other Procurement Army | 104784 | 87376 | 98272 | 94475 | 55381 | 51587 | 85242 | 95499 | Continuing | Continuing | | | | | | | | | | | |

| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | February 2003 | | | |
|--|------------------------|--------------------------------|----------------|--------------|--|--------------|--------------------|--------------|--------------------|-----------------------|------------|--------------------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 253 | | |
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . DIMS Software | C / CPFF | JHU/APL, Laurel, MD | 15838 | 3886 | 2Q | 4766 | 1-2Q | 4305 | 1-2Q | Continue | Continue | Continue |
| b . CNPS | C / FFP | Logicon, Winter Park, FL | 14418 | 4231 | 2Q | 4843 | 1-2Q | 3454 | 1-2Q | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| Subtotal: | | | 30256 | 8117 | | 9609 | | 7759 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| II. Support Cost | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Matrix Support | MIPR | Fort Monmouth, NJ | 2279 | 802 | 1-2Q | 1089 | 1-2Q | 1450 | 1-2Q | Continue | Continue | Continue |
| b . SETA Support | C / CPFF | Fort Monmouth, NJ | 774 | 430 | 1-2Q | 400 | 1-2Q | 925 | 1-2Q | Continue | Continue | Continue |
| c . Engineering Support | C / CPFF | JHU/APL, Laurel, MD | 100 | 100 | 1-2Q | 200 | 1-2Q | 864 | 1-2Q | Continue | Continue | Continue |
| d . Core Support | Various | Fort Monmouth, NJ | 1404 | 542 | 1-4Q | 522 | 1-4Q | 540 | 1-4Q | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| Subtotal: | | | 4557 | 1874 | | 2211 | | 3779 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |

| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | February 2003 | | | |
|---|------------------------|--------------------------------|----------------|--------------|---|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 253 | | |
| III. Test and Evaluation | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . SEL | MIPR | Fort Monmouth, NJ | 3241 | 1027 | 2Q | 1125 | 2Q | 1200 | 2Q | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| Subtotal: | | | 3241 | 1027 | | 1125 | | 1200 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| IV. Management Services | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . PM Admin | Various | Fort Monmouth, NJ | 2384 | 600 | 1-4Q | 600 | 1-4Q | 647 | 1-4Q | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| Subtotal: | | | 2384 | 600 | | 600 | | 647 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| Project Total Cost: | | | 40438 | 11618 | | 13545 | | 13385 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |

| Schedule Profile Detail (R-4a Exhibit) | | | | | | | February 2003 | |
|--|----------------|----------------|----------------|--|----------------|----------------|-----------------------|----------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | PROJECT 253 | |
| <u>Schedule Detail</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>FY 2008</u> | <u>FY 2009</u> |
| Start CNPS V1.0 Testing | | 3Q | | | | | | |
| Complete CNPS V1.0 Testing | | | 3Q | | | | | |
| CNPS V1.0 Materiel Release | | | 3Q | | | | | |
| DIMS Version 4.01 Materiel Release | 3Q | | | | | | | |
| Award Wideband Gapfiller/CNPS Mod | 2Q | | | | | | | |
| DIMS Version 5.0 Software Testing - Beginning | 4Q | | | | | | | |
| DIMS Version 5.0 Software Testing - Ending | | 2Q | | | | | | |
| DIMS Version 5.0 Materiel Release | | 3Q | | | | | | |
| DIMS Version 5.1 Software Testing - Beginning | | | 1Q | | | | | |
| DIMS Version 5.1 Software Testing - Ending | | | 2Q | | | | | |
| DIMS Version 5.1 Materiel Release | | | 3Q | | | | | |
| DIMS Version 6.0 Software Testing - Beginning | | | | | 1Q | | | |
| DIMS Version 6.0 Software Testing - Ending | | | | | 3Q | | | |
| DIMS Version 6.0 Materiel Release | | | | | | 1Q | | |
| CNPS V1.1 Testing - Beginning | | | | 2Q | | | | |
| CNPS V1.1 Testing - Ending | | | | 4Q | | | | |
| CNPS V1.1 Materiel Release | | | | | 1Q | | | |
| CNPS V1.2 Materiel Release | | | | | | 1Q | | |
| CNPS V1.3 Materiel Release | | | | | | | 1Q | |

| ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) | | | | | | | February 2003 | | | |
|--|-------------------|---------------------|---------------------|--|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | PROJECT 384 | | |
| COST (In Thousands) | FY 2002 Actual | FY 2003 Estimate | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | Cost to Complete | Total Cost |
| 384 SMART-T | 18376 | 16596 | 26201 | 12802 | 0 | 0 | 0 | 0 | 0 | 90647 |
| <p><u>A. Mission Description and Budget Item Justification:</u>The Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) provides a range extension capability for the Army's Mobile Subscriber Equipment (MSE) and emerging Warfighter Information Network - Tactical. Specifically, the SMART-T provides a satellite interface to permit uninterrupted communications as our advancing forces move beyond the line-of-sight of terrestrial systems. The SMART-T communicates at both low and medium data rates (LDR/MDR) over the MILSTAR satellite constellation. It is compatible with the UHF Follow-On (UFO), the Navy Fleet SATCOM EHF satellite packages, and MIL-STD-1582C compatible payloads. SMART-T provides the security, mobility, and anti-jam capability required to defeat the threat to assured communications and satisfy the critical need for robust, secure, beyond line of sight communications. The SMART-T provides Low Probability of Interception and Low Probability of Detection (LPI/LPD), avoiding being targeted for destruction, jamming, or intercept. The prime mover is a High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) configured with all the electronics and the self-erectable antenna.</p> <p>This program is the developmental effort to allow SMART-T to operate over the Advanced Extremely High Frequency (AEHF) satellite constellation. The AEHF upgrade modification is under development. The upgrade provides a four-fold increase in communication capacity over the current SMART-T. Three satellite payload simulators are being developed to support the AEHF RDTE activities. A simulator will also be developed to facilitate the training mission. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).</p> | | | | | | | | | | |
| <u>Accomplishments/Planned Program</u> | | | | | | <u>FY 2002</u> | <u>FY 2003</u> | <u>FY 2004</u> | <u>FY 2005</u> | |
| Payload specification change development | | | | | | 594 | 500 | 483 | 487 | |
| Development of AEHF satellite payload simulators | | | | | | 2416 | 2138 | 2256 | 578 | |
| AEHF development efforts | | | | | | 15366 | 13958 | 23462 | 11737 | |
| Totals | | | | | | 18376 | 16596 | 26201 | 12802 | |

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

February 2003

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0303142A - SATCOM Ground Environment
(SPACE)

PROJECT

384

B. Other Program Funding Summary

| | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | To Compl | Total Cost |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|------------|------------|
| BC4002 - SMART-T | 21395 | 11935 | 48585 | 57412 | 68648 | 48647 | 49312 | 5079 | Continuing | Continuing |
| BS9720 - Spares | 508 | 14 | 1033 | 1555 | 4618 | 5655 | 10283 | 7095 | Continuing | Continuing |

C. Acquisition Strategy: The SMART-T terminal is currently being upgraded to be compatible with the emerging Advanced EHF (AEHF) satellites being developed by the Air Force. The SMART-T AEHF terminal development effort is synchronized with the Air Force satellite development effort to insure that AEHF terminals are available when the AEHF satellites are operationally available. As part of the AEHF upgrade effort, satellite simulators are being developed for testing of the AEHF waveform and terminal integration efforts. A total of 210 SMART-T terminals (129 Army, 29 Air Force, 36 Marines, 4 JCSE and 12 other DoD) have been procured to date. A Follow-on Production contract is currently in place to procure the remaining Army and other Service requirements. Contract options can be exercised through FY06. All SMART-T terminals currently being procured will be upgraded to provide the AEHF capability following completion of the development effort.

| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | February 2003 | | | |
|---|------------------------|--|----------------|--------------|---|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 384 | | |
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Dual Development Contracts | C / CPIF | Rockwell - Richardson, TX / Raytheon - Marlborough, MA | 117173 | 0 | | 0 | | 0 | | 0 | 117173 | 0 |
| b . Baseline Mods | SS / CPFF | Raytheon - Marlborough, MA | 85255 | 14008 | 2Q | 20775 | 1Q | 8237 | 1Q | 0 | 128275 | 0 |
| c . Transmitter Development | SS / CPFF | Raytheon - Marlborough, MA | 0 | 0 | | 2210 | 1Q | 2210 | 1Q | 0 | 4420 | 0 |
| d . Govt Support | MIPR | Various | 14321 | 164 | 2Q | 179 | 1Q | 187 | 1Q | 0 | 14851 | 0 |
| e . GFE | MIPR | Various | 149 | 0 | | 0 | | 0 | | 0 | 149 | 0 |
| | | | | | | | | | | | | |
| Subtotal: | | | 216898 | 14172 | | 23164 | | 10634 | | 0 | 264868 | 0 |
| | | | | | | | | | | | | |

| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | February 2003 | | | |
|--|------------------------|--------------------------------|----------------|--------------|--|--------------|--------------------|--------------|--------------------|-----------------------|------------|--------------------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 384 | | |
| II. Support Cost | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Other Contracts | MIPR | Various | 11290 | 0 | | 0 | | 0 | | 0 | 11290 | 0 |
| b . Core Support | N/A | PM WIN-T - Fort Monmouth, NJ | 5347 | 112 | 1Q | 125 | 1Q | 130 | 1Q | 0 | 5714 | 0 |
| c . Lab Activities | MIPR | Various | 7340 | 236 | 2Q | 260 | 1Q | 270 | 1Q | 0 | 8106 | 0 |
| | | | | | | | | | | | | |
| Subtotal: | | | 23977 | 348 | | 385 | | 400 | | 0 | 25110 | 0 |
| | | | | | | | | | | | | |
| III. Test and Evaluation | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Simulator Development | MIPR | Lincoln Labs - Lexington, MA | 20775 | 2076 | 1Q | 2210 | 1Q | 552 | 1Q | 0 | 25613 | 0 |
| b . DT&OT Test Support | MIPR | Various | 6700 | 0 | | 442 | 3Q | 1216 | 1Q | 0 | 8358 | 0 |
| c . Test Bed Development | MIPR | Lincoln Labs Lexington, MA | 2980 | 0 | | 0 | | 0 | | 0 | 2980 | 0 |
| | | | | | | | | | | | | |
| Subtotal: | | | 30455 | 2076 | | 2652 | | 1768 | | 0 | 36951 | 0 |
| | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|--|------------------------|--------------------------------|----------------|--------------|--|--------------|--------------------|--------------|--------------------|-----------------------|------------|--------------------------|
| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | | February 2003 | | |
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 384 | | |
| | | | | | | | | | | | | |
| IV. Management Services | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Tech Support of SMART-T Development | MIPR | Lincoln Labs Lexington, MA | 7900 | 0 | | 0 | | 0 | | 0 | 7900 | 0 |
| | | | | | | | | | | | | |
| Subtotal: | | | 7900 | 0 | | 0 | | 0 | | 0 | 7900 | 0 |
| | | | | | | | | | | | | |
| Project Total Cost: | | | 279230 | 16596 | | 26201 | | 12802 | | 0 | 334829 | 0 |
| | | | | | | | | | | | | |

| Schedule Profile Detail (R-4a Exhibit) | | | | | | | February 2003 | |
|--|----------------|----------------|----------------|--|----------------|----------------|-----------------------|----------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | PROJECT 384 | |
| <u>Schedule Detail</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>FY 2008</u> | <u>FY 2009</u> |
| Continue AEHF Simulator Development | 1-4Q | 1-4Q | 1-3Q | | | | | |
| AEHF Simulator Development Completed | | | 4Q | | | | | |
| Continue AEHF Development | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | | |
| AEHF Development Completed | | | | | 1Q | | | |
| Developmental Testing Completed | | | | | 1Q | | | |
| Award Production AEHF Mod Contract | | | | | 2Q | | | |
| Interoperability Testing Events | | | | | 1-4Q | 1-4Q | | |
| Fielding of AEHF Retrofit Kits | | | | | | | 1-4Q | 1-4Q |
| Multi Service Operational Test & Evaluation | | | | | | | 2-4Q | |

| ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) | | | | | | | | February 2003 | | | |
|---|------------------------------|-------------------|---------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | PROJECT 456 | | | |
| COST (In Thousands) | | FY 2002 Actual | FY 2003 Estimate | FY 2004 Estimate | FY 2005 Estimate | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | Cost to Complete | Total Cost |
| 456 | MILSATCOM SYSTEM ENGINEERING | 12010 | 40701 | 47606 | 38351 | 48449 | 81808 | 75613 | 74482 | Continuing | Continuing |
| <p>A. Mission Description and Budget Item Justification:The Army is responsible for developing, procuring, and maintaining the life cycle logistics support for satellite terminals, satellite control subsystems, communications subsystems, and all related equipment required to achieve end-to-end connectivity satisfying Joint Chiefs of Staff Command, Control, Communications, and Intelligence (C3I) requirements. SATCOM assets also support the President, JCS, combatant commanders, Military Departments, Department of State, and other government Departments and Agencies. This project provides centralized funding for advanced systems engineering, analysis, research, development, test, and evaluation of new and emerging technologies, optimizing terminal performance and interoperability on the digitized battlefield. This system supports the Legacy transition path of the Transformation Campaign Plan (TCP).</p> | | | | | | | | | | | |
| Accomplishments/Planned Program | | | | | | | FY 2002 | FY 2003 | FY 2004 | FY 2005 | |
| Conduct various developmental efforts or analysis to provide enhanced terminal capability and Joint interoperability (EHF, SHF and Commercial Bands) | | | | | | | 1200 | 2000 | 2500 | 4101 | |
| Continue Battlefield Digitization Architecture efforts in support of Army Transformation and the Objective Force | | | | | | | 1241 | 1500 | 3843 | 4200 | |
| Conduct development, integration and fielding of interim SATCOM networking management tools and support the AEHF Management Planning Element (AMPE) development process | | | | | | | 1315 | 2324 | 3100 | 3100 | |
| Continue system engineering development test and experimental support | | | | | | | 1434 | 1752 | 2363 | 2450 | |
| Advanced SATCOM architecture development and System Engineering Support (EHF, SHF, and Commercial Bands) | | | | | | | 1520 | 2037 | 3200 | 3500 | |
| System Engineering IAW the DoD Transformation Communication System (TCS) analysis and technology development efforts | | | | | | | 0 | 5000 | 13000 | 19000 | |
| Development of SHF Ka band augmentation (KaSAT) | | | | | | | 5300 | 15800 | 8600 | 2000 | |
| Development of an integrated Ka band capability for Army SHF terminals | | | | | | | 0 | 9000 | 11000 | 0 | |
| ABCS System Engineering and Integration Efforts (SE&I) | | | | | | | 0 | 1288 | 0 | 0 | |
| Totals | | | | | | | 12010 | 40701 | 47606 | 38351 | |

| ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) | | | | | | | February 2003 | | | | |
|--|----------------------------------|---------|---------|--|---------|---------|---------------|----------------|----------|------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | PROJECT 456 | | | |
| | | | | | | | | | | | |
| B. Other Program Funding Summary | FY 2002 | FY 2003 | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | To Compl | Total Cost | |
| | BB8417 - MOD OF IN-SVC (TAC SAT) | 11390 | 10704 | 10668 | 9303 | 10148 | 10196 | 1251 | 0 | 0 | 63660 |
| | BA9350 - SHF TERM | 9540 | 24193 | 17492 | 17553 | 4885 | 2929 | 0 | 0 | 0 | 76592 |
| | BC4002 - SMART-T | 21395 | 11935 | 48585 | 57412 | 68648 | 48647 | 49312 | 5079 | Continuing | Continuing |
| | | | | | | | | | | | |
| C. Acquisition Strategy: This project funds advanced systems engineering, research, development, test and evaluation of new and emerging technologies to optimize terminal performance and communications control. Once the technologies are mature and deemed feasible, funding and management responsibility for implementation of the technology will transition to cognizant WIN-T SATCOM programs. | | | | | | | | | | | |

| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | February 2003 | | | |
|--|------------------------|---|----------------|--------------|--|--------------|--------------------|--------------|--------------------|-----------------------|------------|--------------------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 456 | | |
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Terminal Upgrades | Various | Various | 1524 | 0 | | 0 | | 0 | | 0 | 1524 | 0 |
| b . Ka Band Integration | Various | TBS | 0 | 9000 | 2Q | 11000 | 2Q | 0 | | 0 | 20000 | 0 |
| c . Ka Band Augmentation | SS/CPAF | Titan Corporation - San Diego, CA | 5300 | 15800 | 2Q | 8600 | 2Q | 2000 | 2Q | 0 | 31700 | 0 |
| d . Advanced Wideband / TCS | Various | TBS | 0 | 5000 | 2Q | 13000 | 2Q | 19000 | 2Q | Continue | Continue | Continue |
| e . ABCS SE&I | MIPR | TBS | 0 | 1288 | 2Q | 0 | | 0 | | 0 | 1288 | 0 |
| | | | | | | | | | | | | |
| Subtotal: | | | 6824 | 31088 | | 32600 | | 21000 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| II. Support Cost | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Engineering (In-House) | MIPR | Various | 6467 | 2052 | 2Q | 3148 | 2Q | 3833 | 2Q | Continue | 15500 | Continue |
| b . Engineering (Contract) | Various | Various | 5661 | 2319 | 2Q | 4008 | 2Q | 4168 | 2Q | Continue | 16156 | Continue |
| c . System Architecture & Analysis | Various | MIT Lincoln Labs - Lexington, MA; Mitre | 900 | 2950 | 2Q | 3200 | 2Q | 3500 | 2Q | Continue | Continue | Continue |
| | | | | | | | | | | | | |

| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | February 2003 | | | |
|--|------------------------------|-----------------------------------|-------------------|-----------------|--|-----------------|--------------------------|-----------------|--------------------------|-----------------------|---------------|--------------------------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 456 | | |
| II. Support Cost (continued) | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| | | | | | | | | | | | | |
| Subtotal: | | | 13028 | 7321 | | 10356 | | 11501 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| III. Test and Evaluation | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Test Support | MIPR | Lincoln Labs, Lexington, MA | 2669 | 500 | 1Q | 0 | | 0 | | 0 | 3169 | 0 |
| b . Test Support | Various | Various | 2194 | 1292 | 2Q | 4000 | 1Q | 4500 | 1Q | Continue | Continue | Continue |
| | | | | | | | | | | | | |
| Subtotal: | | | 4863 | 1792 | | 4000 | | 4500 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|--|------------------------|--------------------------------|----------------|--------------|--|--------------|--------------------|--------------|----------------------|-----------------------|------------|--------------------------|
| ARMY RDT&E COST ANALYSIS(R-3) | | | | | | | | | February 2003 | | | |
| BUDGET ACTIVITY 7 - Operational system development | | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | | | PROJECT 456 | | |
| IV. Management Services | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2003 Cost | FY 2003 Award Date | FY 2004 Cost | FY 2004 Award Date | FY 2005 Cost | FY 2005 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| a . Advanced EHF & Architecture | MIPR | Lincoln Labs Lexington, MA | 6190 | 0 | | 0 | | 0 | | 0 | 6190 | 0 |
| b . Advanced Wideband System Architecture | MIPR | Various | 500 | 500 | 2Q | 650 | 2Q | 1350 | 1Q | 0 | 3000 | 0 |
| | | | | | | | | | | | | |
| Subtotal: | | | 6690 | 500 | | 650 | | 1350 | | 0 | 9190 | 0 |
| | | | | | | | | | | | | |
| Project Total Cost: | | | 31405 | 40701 | | 47606 | | 38351 | | Continue | Continue | Continue |
| | | | | | | | | | | | | |

| Schedule Profile Detail (R-4a Exhibit) | | | | | | | February 2003 | |
|--|----------------|----------------|----------------|--|----------------|----------------|-----------------------|----------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0303142A - SATCOM Ground Environment (SPACE) | | | PROJECT 456 | |
| <u>Schedule Detail</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>FY 2008</u> | <u>FY 2009</u> |
| Intersegment Post Launch Verification (Flight 5) | 2-4Q | | | | | | | |
| Intersegment Post Launch Verification (Flight 6) | | 2Q | | | | | | |
| Initiate System Engineering IAW TCS Study | | 1Q | | | | | | |
| Support System Engineering IAW TCS Study | | 2-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | |
| Initiate Development of Army Tactical Terminals IAW DoD TCS Requirements | | | 2Q | | | | | |
| Initiate Ka Band Augmentation Development (KaSAT) | 4Q | | | | | | | |
| Initiate Ka Band Prototype Testing | | | 2Q | | | | | |
| Initiate Ka Band Integration Development | | 4Q | | | | | | |
| Support KaSAT Factory Testing | | | 1-2Q | | | | | |
| Support KaSAT On-Orbit Testing | | | 4Q | | | | | |
| Support WGS System Test / Launch | | 3Q | 2Q | | | | | |
| Support WGS On-Orbit Testing | | | | 1Q | | | | |
| Support AEHF System CDR | | | 3Q | | | | | |
| Support Management Planning Element (MPE) System Design Development | | 3-4Q | 1-2Q | | | | | |
| Support MPE Initial Delivery | | | | 3Q | | | | |
| Support MPE Testing | | | | | 2Q | | | |
| Support MPE Upgrade for AEHF | | | | | | 2Q | | |
| Support MPE Follow-On Deliveries and New Requirements | | | | | | | 2Q | |
| Support AEHF AEST 8000 (System Test) | | | | | | 2-3Q | | |
| Support New Terminal Requirements | | | | | | | | 1Q |
| Initiate Waveform Development | | | 1Q | | | | | |
| Support Waveform Development | | | 2-4Q | 1-4Q | | | | |