

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

| BUDGET ACTIVITY 7 - Operational system development | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | |
|--|-------------------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------|
| COST (In Thousands) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total Cost |
| Total Program Element (PE) Cost | 144801 | 153227 | 97947 | 62836 | 35224 | 24439 | 27976 | 28564 | Continuing | Continuing |
| 114 Tactical Unmanned Aerial Vehicle (TUAV) (JMIP) | 24000 | 15945 | 7950 | 8209 | 7854 | 8123 | 9100 | 9375 | Continuing | Continuing |
| 11A Advanced Payload Develop & Spt (JMIP) | 9336 | 6804 | 40531 | 17440 | 18955 | 7654 | 7945 | 8005 | Continuing | Continuing |
| 11B TSP DEVELOPMENT (JMIP) | 16908 | 7134 | | | | | | | | 39510 |
| 123 JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (JMIP) | 2318 | 2411 | 2245 | 2359 | 2483 | 2538 | 2506 | 2559 | Continuing | Continuing |
| D09 EXTENDED RANGE UAV (JMIP) | 92239 | 120933 | 45236 | 32832 | 3932 | 4124 | 6425 | 6625 | Continuing | Continuing |
| D10 SUAV (JMIP) | | | 1985 | 1996 | 2000 | 2000 | 2000 | 2000 | | 11981 |

A. Mission Description and Budget Item Justification: Project 114 TUAV Shadow provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The Shadow system air vehicle meets the required range of 50 km and remains on station for up to five hours. The baseline fielded payload is electro-optic infrared (EO/IR). The TUAV Shadow system consists of four air vehicles, (each configured with an EO/IR sensor payload), launcher and ground control and support equipment including: power generation, communications equipment, automated recovery equipment, remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) Vehicle and is supported at the division level by a Mobile Maintenance Facility (MMF). The TUAV Shadow has logged over 123,000 flight hours.

Project 11A Advance Payload Development supports the Army's transformation by developing payloads for brigade combat team, division, and corps UASs in accordance with Headquarters Department of the Army and Training and Doctrine Command UAS priorities. The Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload will provide a wide-area search capability with a built-in imaging mode that provides essential all-weather surveillance and increased situational awareness. The SAR/GMTI payload is a complementary system of the Army's Future Combat System (FCS) Class IV UAV and is a principal payload for the Extended Range Multi-Purpose (ERMP) UAS. The EO/IR w/Laser Designator (LD) is currently in development for the ERMP system and has potential application to other platforms. The EO/IR/LD will provide a day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the Army's Current and Future Force.

Project 11B Tactical SIGINT Payload (TSP) is an Unmanned Aerial Vehicle (UAV) mounted SIGINT sensor that detects radio frequency (RF) emitters. TSP, a key FCS component, is capable of providing the Brigade Combat Team (BCT) Land Commander with an overwatch and a penetrating SIGINT system capable of detecting, identifying, locating, and providing geolocation information on RF emitters throughout the Area of Operations (AO). The BCT commander will deploy TSP to provide sensor coverage where FCS ground vehicles cannot perform the SIGINT mission due to radio line of sight blockage. TSP is developing sensors for BCT applications to detect low-power radio emitters. The SIGINT payload is scalable and designed to provide maximum flexibility for the BCT mission profile. TSP will provide near real time (NRT) actionable intelligence that can

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immediately be used in the commanders' decision cycle. The TSP electronic emitter information will be correlated with data from other systems, e.g. Prophet and Aerial Common Sensor (ACS) to provide precise targeting information for immediate engagement. The TSP sensors are critical to providing full coverage Intelligence, Surveillance and Reconnaissance (ISR) information for Future Force capabilities for FCS and contributing to the Joint ISR net.

Project 123 JTC/SIL is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development (i.e. TUAV Tactical Unmanned Control System (TUCS), TUAV Institutional Mission Simulation (IMS) Trainer, TUAV C4I module), modeling and simulation support. The MUSE develops real-time, operator in-the-loop simulations that are capable of tactical Hardware-In-the-Loop (HWIL) interoperability for multiple intelligence systems, that may be integrated with larger simulations in support of Service training and exercises. MUSE provides a realistic operational environment, supporting a wide range of C4I applications. This project funds the management of the JTC/SIL and MUSE enhancements.

Project D09 Extended Range Multi-Purpose (ERMP) UAS provides much improved real-time responsive capability to conduct long-dwell, wide area reconnaissance, surveillance, target acquisition, communications relay, and attack missions (4 HELLFIRE). ERMP addresses an ever-increasing demand for greater range, altitude, endurance and payload flexibility and allows for mission change while in flight. ERMP will be fielded as a system to a company level organization with one company being assigned to each of the 10 Army Divisions. This will provide a capability that is responsive to the lowest level of command facilitating dynamic re-tasking. The ERMP system consists of 12 aircraft with Electro-Optical/Infrared, Synthetic Aperture Radar, and communications relay payloads, Ground equipment includes 5 Ground Control Stations, 5 Ground Data Terminals, 2 Portable Ground Control Stations, 2 Portable Ground Data Terminals, and other associated ground support equipment. The acquisition strategy capitalized upon competitive forces, bringing cutting-edge improvements at the best cost and value that support the major thrusts of the DoD UAS Roadmap, and the imperatives of Army modernization and Army Aviation Transformation. The ERMP system includes a heavy fuel engine, endurance of 30 hours, TC DL, network connectivity that reduces information cycle time and enhances overall battlespace awareness through liberal dissemination, teaming with manned platforms, and steps toward integration of UAS into national and international airspace. ERMP has a 3,200 pound gross take off weight (with growth to 3,600 pounds), Fowler flaps which improve take-off and landing performance, Automatic Take-off and Landing (ATLS) and the flexibility to operate with or without SATCOM data links. The ERMP One System Ground Control Station has the ability to operate multiple ERMP aircraft simultaneously and is interoperable with the Shadow UAS. With more weapons, payloads, and endurance than any other current system in its class, ERMP gives the Army the required capability defined by years of wartime experience and codified by the Joint Requirement Oversight Council (JROC).

Project D10 The Small Unmanned Aircraft System (SUAS) program provides the ground maneuver battalions and below with unprecedented situational awareness and enhanced force protection. SUAS is a man portable unmanned aircraft system capable of handling a wide variety of ISR tasks at Battalion and below. The SUAS aircraft has a wingspan of 4.5 feet and weighs 4.2 pounds. It is hand-launched, and provides aerial observation, day or night, at line-of-sight ranges up to 10 kilometers. The aircraft has an endurance rate of 90 minutes and can deliver color or infrared imagery in real time to the ground control and remote viewing stations. SUAS obtained Milestone C approval on 6 Oct 05 and successfully completed IOT&E June 06. The program obtained Full Rate Production authority on 5 Oct 06.

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B. Program Change Summary

| | FY 2006 | FY 2007 | FY 2008 | FY 2009 |
|---|---------|---------|---------|---------|
| Previous President's Budget (FY 2007) | 147040 | 114087 | 49403 | 15520 |
| Current BES/President's Budget (FY 2008/2009) | 144801 | 153227 | 97947 | 62836 |
| Total Adjustments | -2239 | 39140 | 48544 | 47316 |
| Congressional Program Reductions | | -1710 | | |
| Congressional Rescissions | | | | |
| Congressional Increases | | 40850 | | |
| Reprogrammings | -2239 | | | |
| SBIR/STTR Transfer | | | | |
| Adjustments to Budget Years | | | 9244 | 31116 |

Change Summary Explanation:

FY 07: Project 114 Congressional plus up of \$3.2 million for Heavy Fuel Engine. Project 11A Congressional plus up of \$2.6 million for Tactical Signals Intelligence Payload. Project D09 Congressional plus up of \$35 million

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| | | | | | | | | | | |
|---|-------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | PROJECT 114 | |
| COST (In Thousands) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total Cost |
| 114 Tactical Unmanned Aerial Vehicle (TUAV) (JMIP) | 24000 | 15945 | 7950 | 8209 | 7854 | 8123 | 9100 | 9375 | Continuing | Continuing |

A. Mission Description and Budget Item Justification: The Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system air vehicle meets the required operating range of 50 kilometers and remains on station for up to five hours. The baseline fielded payload is electro-optic infrared (EO/IR). Procurement of attrition air vehicles originated in FY 2001 and was re-established in FY 2006. The TUAV Shadow system consists of four air vehicles, (each configured with an EO/IR sensor payload), launcher and ground control and support equipment including: power generation, communications equipment, automated recovery equipment, remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) Vehicle and is supported at the division level by a Mobile Maintenance Facility (MMF). The TUAV Shadow has logged over 123,000 flight hours since June 2001 most of which were flown in support of Operation Iraqi Freedom and Operation Enduring Freedom.

| <u>Accomplishments/Planned Program:</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
|---|----------------|----------------|----------------|----------------|
| Program Management Support | 2100 | 848 | 438 | 396 |
| Block Upgrades, 1101 Engineering Development and Test | 1728 | 2500 | 1200 | 1400 |
| Tactical Common Data Link (TCDL) | 11714 | | | |
| Laser Designator | 3117 | 3245 | | |
| Blue Force Tracking Integration | 486 | 306 | | |
| Heavy Fuel Engine | | 3250 | | 4150 |
| Tactical Hyperspectral Imaging System | 1800 | | | |
| Communications Relay | | 2000 | | |
| Test Support | 493 | 1588 | 1892 | 2032 |
| Common System Integration | 2562 | 1208 | 750 | 231 |
| Rolling Take Off | | 1000 | 2170 | |
| Increment WX Capability | | | 1500 | |
| Total | 24000 | 15945 | 7950 | 8209 |

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| | | | | | | | | | | | | |
|--|--|--|--|---------|---------|---------|---------|-----------------------|---------|---------|------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | PROJECT 114 | | | | |
| <u>B. Other Program Funding Summary</u> | | | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 | FY 2012 | FY 2013 | To Compl | Total Cost |
| TUAV Procurement (BA0330) | | | 305174 | 35985 | 39527 | 215736 | 245656 | 60039 | | | Continuing | Continuing |
| Initial Spares - TUAV (BS9738) | | | 3000 | 2823 | 3000 | 3000 | 3000 | 2850 | | | Continuing | Continuing |

Comment:

C. Acquisition Strategy A System Capability Demonstration (SCD) was conducted with four contractors. The results from the SCD in conjunction with proposal evaluations resulted in the competitive down select of a Best Value TUAV system. A successful Milestone II ASARC was conducted 21 December 1999, and a TUAV LRIP contract was awarded to AAI Corporation 27 December 1999. In order to accelerate fielding of the TUAV system, a second LRIP for four systems was awarded 30 March 2001 following a successful OPTEMPO test. In order to maintain accelerated fielding and continue ramp up to full rate production, a third LRIP was awarded in March 2002. A successful LRIP program led to a MS III decision 25 September 2002. The full rate production contract was awarded on 27 December 2002. Continued development of the selected TUAV system will be accomplished through a series of modifications and retrofits such as Tactical Common Data Link (TCDL), Laser Designator, and reliability upgrades for the engine and fuel system.

ARMY RDT&E COST ANALYSIS (R3)

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| BUDGET ACTIVITY 7 - Operational system development | | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | PROJECT 114 | | |
|---|------------------------|--|--|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|-----------------------|------------|--------------------------|
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| TUAV LRIP Program | Comp / FPIF | AAI Corporation, MD | 63965 | | | | | | | | | | 63965 | 63965 |
| C4I Maintenance / Improvements / Communications Relay | MIPR / PWD | Various | 2875 | | | | | | | | | | 2875 | 2875 |
| TAFT System Support | CPFF | AAI Corporation, MD | 3375 | | | | | | | | | | 3375 | 3375 |
| Ground Control Station and Trailers | CPFF | AAI Corporation, MD & Northrop Grumman, CA | 11808 | | | | | | | | | | 11808 | 11808 |
| I-GNAT | CPFF | General Atomics | 11809 | | | | | | | | | | 11809 | 11809 |
| Government Furnished Equipment | MIPR | Various | 2036 | | | | | | | | | | 2036 | 2036 |
| SIL/MUSE | MIPR | Sys Integration Lab, AMCOM Redstone, AL | 1500 | | | | | | | | | | 1500 | 1500 |
| Tactical Control System | PWD | AMCOM RDEC Redstone, AL | 700 | | | | | | | | | | 700 | 700 |
| Advanced Payload Development/Modification/Integration | MIPR | PM UAV Payloads, Huntsville, AL | 4118 | | | | | | | | | | 4118 | 4118 |
| Institutional Mission Simulator | MIPR | Sys Integration Lab, AMCOM Redstone, AL | 2910 | | | | | | | | | | 2910 | 2910 |
| Objective Capability Assessment/Development / C4I | Comp/FPIF | AAI Corporation, MD | 3044 | | | | | | | | | | 3044 | 3044 |
| Improved EO/IR Payload Modification/Integration Assessment for Demo on Hunter | Comp/Opt | AMCOM RDEC Redstone, AL | 200 | | | | | | | | | | 200 | 200 |
| TUAV Ground Control Station Architecture | MIPR | Sys Integration Lab, AMCOM Redstone, AL | 7275 | | | | | | | | | | 7275 | 7275 |
| Outrider Advance Concept Technology Demonstration Bridge Contract | SS/FPIF | Alliant Techsystems, Hopkins, MN | 10600 | | | | | | | | | | 10600 | 10600 |
| TUAV Source Selection/System Capabilities Demo | MIPR/PWD | Various | 7200 | | | | | | | | | | 7200 | 7200 |
| Target Location Error (TLE) / | MIPR/PWD | Various | 19293 | 14831 | 3-4Q | 3245 | 2Q | | | | | | 37369 | 36593 |

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| BUDGET ACTIVITY | | | PE NUMBER AND TITLE | | | | | | | | | PROJECT | | |
|--|-------------------|---|---|-------|------|-------|----|------|----|------|----|------------|--------|--------|
| 7 - Operational system development | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | 114 | | |
| TCDL/JTRS / Laser Designator | | | | | | | | | | | | | | |
| Army Apache/UAS Interoperability Demonstration | MIPR | AMCOM RDEC Redstone, AL | 350 | | | | | | | | | | 350 | 350 |
| Corrective Actions/Engineering Support | CPFF / PWD | AAI Corporation, MD | 10375 | | | | | | | | | | 10375 | 10375 |
| Hunter UAS non-recurring support | SS/FPIF | TRW, Sierra Vista, AZ | 4140 | | | | | | | | | | 4140 | 4140 |
| Hardware cost for GCS's (2) to be integrated into the selected AV's for the ER req. | CPFF | Northrop Grumman, CA | 2000 | | | | | | | | | | 2000 | 2000 |
| OIF Reliability Upgrade | CPFF / PWD | AAI Corporation, MD | 6200 | | | | | | | | | | 6200 | 4100 |
| OIF Improvements (Blue Force Tracker, 1101 Engine Upgrade, System Upgrades/Block Upgrades) | CPFF / PWD | AAI Corporation, MD | 5284 | 2214 | 3-4Q | 2806 | 2Q | 1200 | 2Q | 1400 | 2Q | | 12904 | 12358 |
| Airframe Optimization | CPFF / PWD | AAI Corporation, MD | 5300 | | | | | | | | | | 5300 | 5300 |
| Tactical Hyperspectral Imaging System | CPFF / PWD | AAI Corporation, MD | | 1800 | 2-3Q | | | | | | | | 1800 | 1800 |
| Communications Relay | CPFF / PWD | AAI Corporation, MD / Other Government Agency | | | | 2000 | 2Q | | | | | | 2000 | 1500 |
| Common System Integration | MIPR/PWD | Various Other Government Agencies | | 2562 | 1-4Q | 1208 | 2Q | 750 | 2Q | 231 | 2Q | | 4751 | |
| Heavy Fuel Engine | CPFF / PWD / MIPR | AAI Corporation, MD / Other Government Agency | | | | 3250 | 2Q | | | 4150 | 2Q | | 7400 | |
| Subtotal: | | | 186357 | 21407 | | 12509 | | 1950 | | 5781 | | | 228004 | 211931 |

| II. Support Costs | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------------|------------------------|--------------------------------|----------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| Contractor Engineering Support | CPFF | Various | 8656 | 845 | 1-2Q | 365 | 1Q | 170 | 1-2Q | | | Cont. | Cont. | Cont. |
| Government Engineering Support | PWD | AMCOM Redstone, AL | 5677 | 872 | 1Q | 283 | 1Q | 118 | 1-2Q | | | Cont. | Cont. | Cont. |
| Government Engineering Support - | PWD | AMCOM Redstone, AL | 1476 | | | | | | | | | | 1476 | 1476 |

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| BUDGET ACTIVITY | | | | PE NUMBER AND TITLE | | | | | | | | PROJECT | | | |
|--|--------------------------------|------------------------------------|---------------|---|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|--------------|--------------------------|--------------|-------|
| 7 - Operational system development | | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | 114 | | | |
| Extended Range | | | | | | | | | | | | | | | |
| Subtotal: | | | | 15809 | 1717 | | | 648 | | | 288 | | Cont. | Cont. | Cont. |
| III. Test And Evaluation | | | | | | | | | | | | | | | |
| Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract | | |
| Risk Reduction Testing/ST&E / Rolling Take Off | MIPR | Various | 15345 | | 1000 | 2Q | 2170 | 2Q | | | Cont. | Cont. | Cont. | | |
| Development Testing/ OPTEMPO Testing / Risk Reduction Testing / ST&E / Inclement WX Capability | MIPR | Various | 4354 | 493 | 1-3Q | 1588 | 2Q | 3392 | 2Q | 2032 | 2Q | 11859 | 4354 | | |
| C4I Testing | MIPR | Various | 1980 | | | | | | | | | 1980 | 1980 | | |
| OPTEMPO Demo | MIPR | Various | 1000 | | | | | | | | | 1000 | 1000 | | |
| Data Acquisition System (DAS) Instrumentation Van | MIPR | Redstone Technical Test Center, AL | 810 | | | | | | | | | 810 | 810 | | |
| IOT&E Preparation and Support/Travel | MIPR | ATEC/PM/OGA Ft. Hood, TX | 750 | | | | | | | | | 750 | 750 | | |
| Subtotal: | | | 24239 | 493 | | 2588 | | 5562 | | 2032 | | Cont. | Cont. | Cont. | |
| IV. Management Services | | | | | | | | | | | | | | | |
| Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract | | |
| Program Mgt Personnel | MIPR | PM UAS Redstone, AL | 8056 | 383 | 1-4Q | 200 | 1-4Q | 150 | 1-4Q | 396 | 1-4Q | Cont. | Cont. | Cont. | |
| Subtotal: | | | 8056 | 383 | | 200 | | 150 | | 396 | | Cont. | Cont. | Cont. | |
| Project Total Cost: | | | 234461 | 24000 | | 15945 | | 7950 | | 8209 | | Cont. | Cont. | Cont. | |

Schedule Profile (R4 Exhibit)

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| BUDGET ACTIVITY | | PE NUMBER AND TITLE | | | | | | | | | | | | PROJECT | | | | | | | | | | | | | | | | | | |
|--|-------|---|---|---|-------|---|---|---|-------|---|---|---|-------|------------|---|---|-------|---|---|---|-------|---|---|---|-------|---|---|---|-------|---|---|---|
| 7 - Operational system development | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | | | | 114 | | | | | | | | | | | | | | | | | | |
| Event Name | FY 06 | | | | FY 07 | | | | FY 08 | | | | FY 09 | | | | FY 10 | | | | FY 11 | | | | FY 12 | | | | FY 13 | | | |
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| OIF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C4I Maintenance/Improvements | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Development Testing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Ownership Cost Reduction Initiatives | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Schedule Detail (R4a Exhibit)

February 2007

| BUDGET ACTIVITY 7 - Operational system development | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | PROJECT 114 | | |
|--|----------------|--|----------------|----------------|----------------|----------------|-----------------------|----------------|--|
| <u>Schedule Detail</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> | <u>FY 2012</u> | <u>FY 2013</u> | |
| OIF | 1Q - 4Q | 1Q - 4Q | | | | | | | |
| C4I Maintenance/Improvements | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | |
| Development Testing | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | |
| Total Ownership Cost Reduction Initiatives | | | | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | |
| C4I Maintenance/ Improvements (ABCS 4.3, 6.2, | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q | | | | |
| TLE / TCDL / JTRS / Laser Designator | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q | | | | | |
| Total Ownership Cost Reduction Initiative | | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | |
| P3I | | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | |
| OIF Improvements | 1Q - 3Q | | | | | | | | |
| Heavy Fuel Engine | | 2Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q | | | | |

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| BUDGET ACTIVITY 7 - Operational system development | | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | PROJECT 11A | |
| COST (In Thousands) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total Cost |
| 11A Advanced Payload Develop & Spt (JMIP) | 9336 | 6804 | 40531 | 17440 | 18955 | 7654 | 7945 | 8005 | Continuing | Continuing |

A. Mission Description and Budget Item Justification: This project supports the Army's transformation by developing payloads for brigade combat team, division, and corps Unmanned Air Vehicles (UAV) and unmanned systems in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) UAV priorities. The Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload will provide a wide-area search capability with a built-in imaging mode that provides essential all-weather surveillance and increased situational awareness. The SAR/GMTI payload is a complementary system of the Army's Future Combat System (FCS) Class IV UAV and is a principal payload for the Extended Range/Multi-Purpose (ER/MP) UAV. The Electro Optical Infra Red w/Laser Designator (EO/IR/LD) is currently in development for the ER/MP system and has potential application to other platforms. The EO/IR/LD will provide a day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the Army's Current and Future Force.

The Common Sensor Payload effort was initiated by decision in FY 2007, at the direction of the Vice Chief of Staff of the Army. This effort will combine existing separate payload efforts into a single common payload with a single logistics tail to support the Extended Range/Multi-Purpose (ER/MP) UAV as well as the Armed Reconnaissance Helicopter (ARH) ARH-70A Helicopter.

FY2008/2009 funding continues the system integration and refurbishment of UAV payloads for follow on testing.

| <u>Accomplishments/Planned Program:</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
|--|----------------|----------------|----------------|----------------|
| SAR/GMTI Development and Integration - includes Development Test. | 3482 | 3042 | 631 | 640 |
| EO/IR/LD development includes engineering/program management support | 5854 | 1238 | 600 | 600 |
| Tactical Sigint Payload | | 2524 | | |
| Common Sensor Payload Effort, includes NRE, prototypes, integration and testing efforts. | | | 39300 | 16200 |
| Total | 9336 | 6804 | 40531 | 17440 |

| <u>B. Other Program Funding Summary</u> | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 | FY 2012 | FY 2013 | To Compl | Total Cost |
|---|---------|---------|---------|---------|---------|---------|---------|---------|------------|------------|
| Advanced TUAV Payloads (B00302) | | 33328 | 38415 | 142924 | 164096 | 150709 | 124184 | 117688 | Continuing | Continuing |

Comment: Comment: Common Sensor Payload RDTE funds were added to this PE, Common Sensor Payload PA funds were added to SSN B00302.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0305204A - Tactical Unmanned Aerial Vehicles

PROJECT

11A

C. Acquisition Strategy The System Development and Demonstration (SDD) contract for the SAR/GMTI Payload was competitively awarded 1QFY04 for the design/modification and fabrication of SDD articles. The SAR/GMTI SDD articles will be refurbished and provided to ER/MP for integration and testing and participation in the ER/MP Limited User Test (LUT). Additional capabilities will be added via spiral development depending on need and technology maturity. An additional two (2) units have been procured under the existing contract to support ER/MP system integration and test.

The SDD contract for the ER/MP EO/IR/LD was competitively awarded in 3rd quarter FY05 for 10 test articles. After combined development and operational testing, the SDD articles will be provided to the ER/MP program for system integration and test. After the ER/MP Limited User Test, the SDD units will be refurbished and used to support the platform during Initial Operational Test & Evaluation (IOT&E).

A draft acquisition strategy based on a competitive award is in process for the Army Common Sensor Payload program.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| BUDGET ACTIVITY | | | PE NUMBER AND TITLE | | | | | | | | | PROJECT | | |
|---|------------------------|-----------------------------------|--|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| 7 - Operational system development | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | 11A | | |
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| SAR/GMTI System Development & Demonstration/Refurbishment and Integration | COMP/CPIF | General Atomics, San Diego, CA | 23336 | 500 | 2-3Q | 1750 | 2-3Q | 631 | 2Q | 640 | 2Q | | 26857 | 26869 |
| EO/IR/LD System Development & Demonstration/Refurbishment and Integration | COMP/FFP/C PFF | Raytheon, McKinney, TX | 8589 | 2485 | 1-2Q | | | 600 | 2Q | 600 | 2Q | | 12274 | 12274 |
| Tactical Sigint Payload | | | | | | 1564 | | | | | | | 1564 | |
| Common Sensor Payload NRE and Hardware | C/FFP/CPFF | TBD | | | | | | 36928 | 2Q | 12963 | 2Q | Cont. | Cont. | |
| Subtotal: | | | 31925 | 2985 | | 3314 | | 38159 | | 14203 | | Cont. | Cont. | 39143 |
| | | | | | | | | | | | | | | |
| II. Support Costs | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Engineering Support | MIPR | Various | 8558 | 2386 | 1-4Q | 1797 | 1-4Q | | | | | | 12741 | |
| Subtotal: | | | 8558 | 2386 | | 1797 | | | | | | | 12741 | |
| | | | | | | | | | | | | | | |
| III. Test And Evaluation | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| SAR/GMTI Developmental Test Support | MIPR | DTC, Aberdeen Proving Grounds, MD | 297 | 500 | 1-2Q | | | | | | | | 797 | |
| SAR/GMTI Operational Testing | MIPR | IEWTD, Fort Huachuca, AZ | 390 | 940 | 1-2Q | | | | | | | | 1330 | |
| EO/IR/LD Developmental Testing | MIPR | DTC, Aberdeen Proving Grounds, MD | | 835 | 2-3Q | | | | | | | | 835 | |
| | | | | | | | | | | | | | | |

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| | | | | | | | | | | | | | | |
|--|------|--------------------------|--|------|------|--|--|-----|----|------|------|-------|-----------------------|--|
| BUDGET ACTIVITY 7 - Operational system development | | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | | PROJECT 11A | |
| EO/IR/LD Operational Testing | MIPR | IEWTD, Fort Huachuca, AZ | | 993 | 2-3Q | | | | | | | | 993 | |
| Common Sensor Payload Testing | MIPR | TBD | | | | | | 488 | 3Q | 1395 | 1-3Q | Cont. | Cont. | |
| Subtotal: | | | 687 | 3268 | | | | 488 | | 1395 | | Cont. | Cont. | |

Remarks: Government, contractor, and test support for UAV testing contained in the ER/MP Platform.

| IV. Management Services | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
|-------------------------|------------------------|--------------------------------|----------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| Program Mgt Personnel | In House | PM RUS, Ft. Monmouth, NJ | 1350 | 697 | 1-4Q | 1693 | 1-4Q | | | | | | 3740 | |
| Common Sensor Mgmt | MIPR | TBD | | | | | | 1884 | 1-4Q | 1842 | 1-4Q | Cont. | Cont. | |
| Subtotal: | | | 1350 | 697 | | 1693 | | 1884 | | 1842 | | Cont. | Cont. | |

Project Total Cost: 42520 9336 6804 40531 17440 Cont. Cont. 39143

Schedule Profile (R4 Exhibit)

February 2007

| Event Name | FY 06 | | | | FY 07 | | | | FY 08 | | | | FY 09 | | | | FY 10 | | | | FY 11 | | | | FY 12 | | | | FY 13 | | | |
|---|--------------|---|---|---|-------|---|---|---|-------|---|---|---|-------|---|---|---|-------|---|---|---|-------|---|---|---|-------|---|---|---|-------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| | SAR/GMTI SDD | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAR/GMTI DT | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAR/GMTI OTE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UAV Systems Integration & Test Support for SAR/GMTI (and Refurbishment) | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | |
| (1) SAR/GMTI MS C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2) Award SAR/GMTI LRIP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EO/IR/LD SDD | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UAV Systems Integration & Test for ER/MP (and Refurbishment) | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | |
| ER/MP System LUT (PM MAE program event) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Emerging Technology transition initiatives | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | |
| (3) Common Sensor Payload Award | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Common Sensor Payload Incr 1 Engr/Hdwe Efforts | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | |
| Common Sensor Payload Incr 2 Decision & Engr/Hdwe Efforts | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | |

Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT
11A

| <u>Schedule Detail</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> | <u>FY 2012</u> | <u>FY 2013</u> |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| SAR/GMTI SDD | 1Q - 4Q | 1Q - 4Q | | | | | | |
| SAR/GMTI DT | 1Q - 4Q | | | | | | | |
| SAR/GMTI OTE | 4Q | | | | | | | |
| UAV Systems Integration & Test Support for SAR/GMTI (and Refurbishment) | 2Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | | | | |
| SAR/GMTI MS C | | 3Q | | | | | | |
| Award SAR/GMTI LRIP | | 4Q | | | | | | |
| EO/IR/LD SDD | 1Q - 4Q | 1Q - 4Q | | | | | | |
| UAV Systems Integration & Test for ER/MP (and Refurbishment) | 2Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | | | | |
| ER/MP System LUT (PM MAE program event) | | | 3Q | | | | | |
| Emerging Technology transition initiatives | | | | | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q |
| Common Sensor Payload Award | | | 1Q | | | | | |
| Common Sensor Payload Incr 1 Engr/Hdwe Efforts | | | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | | | |
| Common Sensor Payload Incr 2 Decision & Engr/Hdwe Efforts | | | 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q | 1Q - 4Q |

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

| | | | | | | | | | | |
|---|-------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | PROJECT 123 | |
| COST (In Thousands) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total Cost |
| 123 JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (JMIP) | 2318 | 2411 | 2245 | 2359 | 2483 | 2538 | 2506 | 2559 | Continuing | Continuing |

A. Mission Description and Budget Item Justification: The Joint Technology Center/System Integration Laboratory (JTC/SIL) is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development (i.e. TUAV Tactical Unmanned Control System (TUCS), TUAV Institutional Mission Simulation (IMS) Trainer, TUAV C4I module), modeling and simulation support. The MUSE develops real-time, operator in-the-loop simulations that are capable of tactical Hardware-In-the-Loop (HWIL) interoperability for multiple intelligence systems, that may be integrated with larger simulations in support of Service training and exercises. MUSE provides a realistic operational environment, supporting a wide range of C4I applications. This project funds the management of the JTC/SIL and MUSE enhancements.

| <u>Accomplishments/Planned Program:</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
|--|----------------|----------------|----------------|----------------|
| Implement Tactical Common Datalink Model | 100 | | 50 | 50 |
| Develop and upgrade Terrain and Target databases | 80 | 80 | 80 | 80 |
| Implement Advanced Sensor / Payload Simulations | 50 | 75 | 75 | 75 |
| Implement / Integration Weapons Simulation for Weaponized UAV | 75 | 50 | 50 | 50 |
| Incorporate STANAG 4586 Datalike Interface Standard | 82 | 61 | 50 | 60 |
| Evaluate and integrate New Visualization Technologies into MUSE | 75 | 75 | 75 | 75 |
| Technical support of MUSE integration with IEWTPT | 40 | 40 | 40 | 40 |
| Enhance VTUAV Models | 50 | 50 | 50 | 50 |
| Provide MUSE Configuration Management and Help Desk Services | 250 | 250 | 250 | 250 |
| MUSE Equipment | 328 | 348 | 300 | 338 |
| JTC/SIL Management | 308 | 394 | 400 | 400 |
| Initial development of Multi-Spectral and Hyper-Spectral simulations | | | 25 | 50 |
| Enhance IR and SAR model sets | 100 | 100 | 50 | 50 |
| Update interfaces to DoD models | 80 | 80 | 50 | 50 |
| Integrate UAV Survivability Models and Attributes | | 80 | | |
| Enhance Fixed Wing UAV Models | 50 | 75 | 75 | 75 |
| Update MUSE HLA and DITSCAP | 100 | 100 | 100 | 100 |

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

| BUDGET ACTIVITY | PE NUMBER AND TITLE | | | | PROJECT | |
|--|---|-------------|-------------|-------------|-------------|-------------|
| 7 - Operational system development | 0305204A - Tactical Unmanned Aerial Vehicles | | | | 123 | |
| Enhance of Fixed Target Models | 75 | 75 | 72 | 75 | 75 | 75 |
| Common UAV Trainer Enhancements | 80 | 80 | 80 | 80 | 80 | 80 |
| Implement Tailored Auto Track and Auto Search Models | | 75 | 75 | 75 | 75 | 75 |
| Incorporate Effects of Digital Payload Imagery | 80 | 35 | 50 | 50 | 50 | 50 |
| Continue C4I Enhancements | 90 | 72 | 73 | 86 | 86 | 86 |
| Continue OneSAF Vignette development | 75 | 75 | 50 | 50 | 50 | 50 |
| Continue Usability Enhancements | 100 | 91 | 75 | 100 | 100 | 100 |
| Enhance Small UAV Models | 50 | 50 | 50 | 50 | 50 | 50 |
| Total | 2318 | 2411 | 2245 | 2359 | 2359 | 2359 |

| <u>B. Other Program Funding Summary</u> | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 | FY 2012 | FY 2013 | To Compl | Total Cost |
|--|---------|---------|---------|---------|---------|---------|---------|---------|----------|------------|
| PE 0305204N Navy | 1700 | 1700 | | | | | | | | 3400 |
| PE 0305205F Air Force | 2000 | 2000 | | | | | | | | 4000 |

Comment:

C. Acquisition Strategy Continued MUSE development will be accomplished through a combination of Government in-house functional directorate support and contractor support using a variety of existing contract vehicles.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| BUDGET ACTIVITY | | | PE NUMBER AND TITLE | | | | | | | | | | PROJECT | |
|--|------------------------|--|--|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| 7 - Operational system development | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | | 123 | |
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Initiate MTI/FTI Sensor Sim Develop/Upgrade SAR | SS/CPFF | AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL | 143 | | | | | | | | | | 143 | 143 |
| MUSE Remote Support Capability | SS/CPFF | GDIS/Arlington, VA | 415 | | | | | | | | | | 415 | 415 |
| Develop MUSE Fixed Target Damage Site Visualization | SS/CPFF | GDIS/Arlington, VA | 235 | | | | | 72 | 1Q | 75 | 1Q | | 382 | 235 |
| Upgrade HLA Certification and DITSCAP | SS/CPFF | AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL | 692 | 100 | 1Q | 100 | 1Q | 100 | 1Q | 100 | 1Q | | 1092 | 892 |
| MUSE Equipment | C/FFP | Various | 1921 | 328 | 1Q | 348 | 1Q | 300 | 1Q | 338 | 1Q | | 3235 | 2597 |
| MUSE Hardware Consolidation into Single PC-Based Platform | SS/CPFF | GDIS/Arlington, VA | 237 | | | | | | | | | | 237 | 237 |
| Develop / Integrate and Implement TCDL into MUSE in Support of TUAUV ORD | SS/CPFF | GDIS/Arlington, VA | 150 | 100 | 1Q | | | 50 | 1Q | 50 | 1Q | | 350 | 250 |
| Develop & Upgrade Terrain & Target Databases | SS/CPFF | Quality Research Institute/HSV, AL | 1039 | 80 | 1Q | 80 | 2Q | 80 | 1Q | 80 | 1Q | | 1359 | 1199 |
| Incorporate New Technology Sensors & Platforms into the MUSE | SS/CPFF | GDIS/Arlington, VA | 275 | | | | | | | | | | 275 | 275 |
| Integrate Weapon Employment Capabilities into MUSE | C/FFP | TBD | 124 | | | | | | | | | | 124 | 124 |
| Evaluate and Integrate New Visualization Technologies into MUSE | C/FFP | TBD | 105 | 75 | 1Q | 75 | 2Q | 75 | 1Q | 75 | 1Q | | 405 | 105 |
| Link Fixed Target Database with DIA MIDB | SS/CPFF | TBD | 245 | 50 | 1Q | 75 | 1Q | | | | | | 370 | 370 |
| Initial VTUAUV/UCARS Vehicle models | SS/CPFF | TBD | 165 | 50 | 1Q | 50 | 2Q | 50 | 1Q | 50 | 1Q | | 365 | 265 |
| Initial ATARS & TARPS Simulation model | SS/CPFF | SAIC/HSV, AL. | 235 | | | | | | | | | | 235 | 235 |

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| BUDGET ACTIVITY | | | PE NUMBER AND TITLE | | | | | | | | | | PROJECT | | |
|---|---------|--------------------|--|------|----|------|----|------|----|------|------|--|---------|-------|------|
| 7 - Operational system development | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | | 123 | | |
| Initial effects-based fixed target behavior model | SS/CPFF | SAIC/HSV, AL. | 190 | | | | | | | | | | | 190 | 190 |
| Initial development of Multi-spectral & Hyper-spectral simulation | SS/CPFF | GDIS/Arlington, VA | 206 | | | | | | | | | | | 206 | 206 |
| Prototype FIA interfaces & capabilities | | | 120 | | | | | | | | | | | 120 | 120 |
| Imagery generation upgrade conversion | SS/CPFF | GDIS/Arlington, VA | 160 | | | | | | | | | | | 160 | 160 |
| Enhance IR & SAR model sets | SS/CPFF | GDIS/Arlington, VA | 90 | 100 | 1Q | 100 | 1Q | 50 | 1Q | 50 | 1Q | | | 390 | 90 |
| Implement Advanced Sensor / Payload | SS/CPFF | GDIS/Arlington, VA | | 50 | 1Q | 75 | 2Q | 75 | 1Q | 75 | 1Q | | | 275 | 125 |
| Implement / Integration Weapons Simulation for Weaponized UAV | SS/CPFF | GDIS/Arlington, VA | | 75 | 1Q | 50 | 2Q | 50 | 1Q | 50 | 1Q | | | 225 | 125 |
| Incorporate STANAG 4586 Datalink Interface Standard | SS/CPFF | GDIS/Arlington, VA | | 82 | 1Q | 61 | 2Q | 50 | 1Q | 60 | 1Q | | | 253 | 143 |
| Enhance Small UAV / IR / SAR & Fixed Target Models | SS/CPFF | GDIS/Arlington, VA | | 50 | 1Q | 50 | 2Q | 50 | 1Q | 50 | 1Q | | | 200 | 450 |
| Integrate UAV Survivability Models and Attributes | SS/CPFF | GDIS/Arlington, VA | | | | 80 | 2Q | | | | | | | 80 | 80 |
| Evaluate and Integrate new Visualization Technology / System | SS/CPFF | GDIS/Arlington, VA | | 75 | 1Q | 75 | 2Q | 75 | 1Q | 75 | 1Q | | | 300 | 150 |
| Common UAV Trainer Enhancements | SS/CPFF | GDIS/Arlington, VA | | 80 | 1Q | 80 | 2Q | 80 | 1Q | 80 | 1Q | | | 320 | 160 |
| Incorporate Effects of Digital Payload Imagery | SS/CPFF | GDIS/Arlington, VA | | 80 | 1Q | 35 | 2Q | 50 | 1Q | 50 | 1Q | | | 215 | 115 |
| OneSAF Vignette development | SS/CPFF | GDIS/Arlington, VA | | 75 | 1Q | 75 | 2Q | 50 | 1Q | 50 | 1Q | | | 250 | 150 |
| Usability Enhancements | SS/CPFF | GDIS/Arlington, VA | | 100 | 1Q | 91 | 2Q | 75 | 1Q | 100 | 1-2Q | | | 366 | 200 |
| Initial Development of Multi-Spectral and Hyperspectral Simulations | SS/CPFF | GDIS/Arlington, VA | | | | | | 25 | 1Q | 50 | 1Q | | | 75 | |
| Implement Tailored Auto Track and Auto Search | SS/CPFF | GDIS/Arlington, VA | | | | 75 | 2Q | 75 | 1Q | 75 | 1Q | | | 225 | |
| Subtotal: | | | 6747 | 1550 | | 1575 | | 1432 | | 1533 | | | | 12837 | 9806 |

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| | | |
|--|--|-----------------------|
| BUDGET ACTIVITY 7 - Operational system development | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | PROJECT 123 |
|--|--|-----------------------|

| II. Support Costs | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--|----------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| Provide Direct JSTARS CGS Interface | SS/CPFF | GDIS/Arlington, VA | 75 | | | | | | | | | | 75 | 75 |
| Technical Support of MUSE Integration with IEWTPT | C/CPFF | GDIS/Arlington, VA | 175 | 40 | 1Q | 40 | 2Q | 40 | 1Q | 40 | 1Q | | 335 | 255 |
| Initiate MUSE TUAV Flight Performance Model Verification & Validation Process | C/CPFF | Dynetics/Huntsville, AL | 465 | | | | | | | | | | 465 | 465 |
| Provide MUSE Configuration Mgt and Help Desk Services | C/CPFF | GDIS, Arlington, VA | 1162 | 250 | 1Q | 250 | 1Q | 250 | 1Q | 250 | 1Q | | 2162 | 1662 |
| JTC/SIL Management | C/CPFF | TBD | 280 | | | | | | | | | | 280 | 280 |
| MUSE Equipment | C/CPFF | AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL | 761 | | | | | | | | | | 761 | 761 |
| Incorporate New Technology Sensors & Platforms into the MUSE | C/CPFF | SAIC/Huntsville, AL | 275 | | | | | | | | | | 275 | 275 |
| Update interfaces to DoD models | C/CPFF | GDIS/Arlington, VA | 215 | 80 | 1Q | 80 | 2Q | 50 | 1Q | 50 | 1Q | | 475 | 375 |
| Subtotal: | | | 3408 | 370 | | 370 | | 340 | | 340 | | | 4828 | 4148 |

| III. Test And Evaluation | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
|--------------------------|------------------------|--------------------------------|----------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| C4I Enhancements | SS/CPFF | GDIS/Arlington, VA | | 90 | 1Q | 72 | 2Q | 73 | 1Q | 86 | 1Q | | 321 | 180 |
| Subtotal: | | | | 90 | | 72 | | 73 | | 86 | | | 321 | 180 |

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| BUDGET ACTIVITY 7 - Operational system development | | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | PROJECT 123 | | |
|--|------------------------|--------------------------------|--|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|-----------------------|--------------|--------------------------|
| IV. Management Services | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| JTC/SIL Management Personnel | In House | JTC/SIL/Redstone Arsenal, AL | 1104 | 308 | 1-4Q | 394 | 1-4Q | 400 | 1-4Q | 400 | 1-4Q | | 2606 | 1806 |
| Subtotal: | | | 1104 | 308 | | 394 | | 400 | | 400 | | | 2606 | 1806 |
| Project Total Cost: | | | 11259 | 2318 | | 2411 | | 2245 | | 2359 | | | 20592 | 15940 |

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

| | | | | | | | | | | |
|---|-------------------|---------------------|---|---------------------|---------------------|---------------------|---------------------|------------------------------|---------------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | PROJECT D09 | | |
| COST (In Thousands) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total Cost |
| D09 EXTENDED RANGE UAV (JMIP) | 92239 | 120933 | 45236 | 32832 | 3932 | 4124 | 6425 | 6625 | Continuing | Continuing |

A. Mission Description and Budget Item Justification: The Extended Range Multi-Purpose (ERMP) Unmanned Aircraft System (UAS) provides a much improved real-time responsive capability to conduct long-dwell, wide area reconnaissance, surveillance, target acquisition, communications relay, and attack missions (4 HELLFIRE). ERMP addresses an ever-increasing demand for greater range, altitude, endurance and payload flexibility and allows for mission change while in flight. ERMP will be fielded as a system to a company level organization with one company being assigned to each of the 10 Army Divisions providing a capability that is responsive to the lowest level of command facilitating dynamic re-tasking. The ERMP system consists of 12 aircraft with Electro-Optical/Infrared, Synthetic Aperture Radar, and communications relay payloads, Ground equipment includes 5 Ground Control Stations, 5 Ground Data Terminals, 2 Portable Ground Control Stations, 2 Portable Ground Data Terminals, and other associated ground support equipment. The acquisition strategy capitalized upon competitive forces, bringing cutting-edge improvements at the best cost and value that support the major thrusts of the DoD UAS Roadmap, and the imperatives of Army modernization and Army Aviation Transformation. The ERMP system includes a heavy fuel engine, endurance of 30 mission hours, Tactical Common Data Link (TCDL) technology, network connectivity that reduces information cycle time and enhances overall battlespace awareness through liberal dissemination, teaming with manned platforms, and steps toward integration of UAS into national and international airspace. ERMP has a 3,200 pound gross take off weight (with growth to 3,600 pounds), Fowler flaps which improve take-off and landing performance, Automatic Take-off and Landing (ATLS) and the flexibility to operate with or without SATCOM data links. The ERMP One System Ground Control Station has the ability to operate multiple ERMP aircraft simultaneously and is interoperable with the Shadow UAS. With more weapons, payloads, and endurance than any other current system in its class, ERMP gives the Army the required capability defined by years of wartime experience and codified by the Joint Requirement Oversight Council (JROC).

RDT&E funds continue to resource the System Development and Demonstration (SDD) phase for ERMP, as well as continuing improvements after SDD. Engineering developmental tests and pre-production testing frame the major FY 07 activities. The Critical Design Review (CDR) (Nov 06), and Design Readiness Review (DRR, Dec 06) provided an assessment of the design maturity including key system characteristics and manufacturing processes. These activities prepared the system and lower risk for the Limited User Test in FY08, the Logistics Demonstration event and the OPTEMPO and IOT&E events in FY09. Testing of prototype articles includes components of E3, environmental, and NBC as well as software certification, many of which run concurrently to conserve schedule.

| <u>Accomplishments/Planned Program:</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Program Management | 6022 | 7726 | 3846 | 2027 |
| Government Furnished Equipment | 4215 | 1057 | | |
| Development Engineering & Prototype Manufacturing | 75570 | 98894 | 18717 | 14181 |
| System Test & Evaluation | 3819 | 2673 | 15792 | 14690 |
| Common System Integration | 2613 | 4498 | 3293 | |
| Launcher Software Development | | 3300 | 1688 | 1414 |

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

| | | | | |
|---|---|------------------------------|-------|-------|
| BUDGET ACTIVITY 7 - Operational system development | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | PROJECT D09 | | |
| Aviation Mission Planning Systems | | 2785 | 1900 | 520 |
| Total | 92239 | 120933 | 45236 | 32832 |

| <u>B. Other Program Funding Summary</u> | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 | FY 2012 | FY 2013 | To Compl | Total Cost |
|--|---------|---------|---------|---------|---------|---------|---------|---------|------------|------------|
| TUAV - Extended Range / Multi-Purpose (B00305) | | 9367 | 118477 | 175758 | 326861 | 303467 | 124895 | 129995 | Continuing | Continuing |
| Extended Range / Multi-Purpose - Weapons Capability Modifications (B10307) | | 1654 | 15207 | 15224 | 15244 | 15272 | | | Continuing | Continuing |
| I-GNAT (B00305) | 42500 | | | | | | | | Continuing | 42500 |

Comment:

C. Acquisition Strategy The ERMP ORD was approved by the JROC 6 April 2005, Milestone B occurred 20 April, and the System Development and Demonstration contract was awarded 8 August 2005 as a result of a competitive solicitation which included a vendor system capabilities demonstration. To meet the required capability, evolutionary acquisition has been employed to implement the incremental approach outlined in the ORD. The ERMP UAS will be matured during the System Development and Demonstration (SDD) phase, which includes the development and integration of key components such as the Tactical Common Data Link (TCDL), Link-16, and integration of Government Furnished Equipment, payloads, appropriate Common Aviation Ground Support Equipment and the One System GCS. PM JAMS will develop the P+ model of the HELLFIRE missile and participate in the integration and test activities for the entire ERMP system. PM JAMS will budget for the procurement of missiles for the fielded systems. Field Tests at the Electronic Proving Grounds in Ft. Huachuca, AZ, and integration tests at the Central Technical Support Facility in Ft. Hood, TX, are examples of the tests planned to reduce risk in the SDD phase. A favorable Milestone C decision will permit award of the LRIP contract and Production and Deployment phase. The LRIP will:

- a. Establish an effective and efficient production base for the system required to provide a solid foundation on which to build FRP systems.
- b. Permit an orderly increase in production rate to mitigate risk.
- c. Procure production representative equipment to support test & evaluation.
- d. Support Doctrine, Training, Leadership Development, Organization, Materiel, Personnel and Facilities (DTLOMPF) and Tactics, Techniques and Procedures (TTP) development.
- e. Provide an opportunity to incorporate lessons learned from the comprehensive test and evaluation program into the production baseline.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| BUDGET ACTIVITY | | | PE NUMBER AND TITLE | | | | | | | | | PROJECT | | |
|---|----------------------------|---|--|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|------------|--------------------------|
| 7 - Operational system development | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | D09 | | |
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Target Location Error / OIF TUAV Enhancements | Procurement Work Directive | AAI, MD | 2350 | | | | | | | | | | 2350 | 2350 |
| Acquisition Simulation & Demonstration | MIPR | Camber, Huntsville, AL | 1000 | | | | | | | | | | 1000 | 1000 |
| Long Lead Items for One System Integration & Test | Procurement Work Directive | Various Contractors | 7633 | | | | | | | | | | 7633 | 7633 |
| Tactical Common Data Link Initial Integration | TBD | Various Contractors | 4113 | | | | | | | | | | 4113 | 4113 |
| One System Initial Integration with Prime AV Vendor | TBD | Various Contractors | 3651 | | | | | | | | | | 3651 | 3651 |
| Source Selection | TBD | Other Government Agencies | 2146 | | | | | | | | | | 2146 | 2146 |
| Development Engineering & Prototype Manufacturing | CPIF/AF | General Atomics / ASI - San Diego, CA | | 75570 | 2-3Q | 98894 | 1-3Q | 18717 | 1-2Q | 14181 | 1-2Q | | 207362 | 60826 |
| Government Furnished Equipment | MIPR | | | 4215 | 2-3Q | 1057 | 1-3Q | | | | | | 5272 | 8494 |
| Common System Integration | Procurement Work Directive | Various Contractors and Other Government Agencies | | 2613 | 3Q | 4498 | 2Q | 3293 | 1-3Q | | | | 10404 | |
| Launcher Software Development | MIPR | Other Government Agency | | | | 3300 | 2Q | 1688 | 1-2Q | 1414 | 1-2Q | | 6402 | |
| Aviation Mission Planning Systems | MIPR | Other Government Agency | | | | 2785 | 2Q | 1900 | 1-2Q | 520 | 1-2Q | | 5205 | |
| Subtotal: | | | 20893 | 82398 | | 110534 | | 25598 | | 16115 | | | 255538 | 90213 |
| | | | | | | | | | | | | | | |
| II. Support Costs | Contract Method & | Performing Activity & Location | Total PYs | FY 2006 Cost | FY 2006 Award | FY 2007 Cost | FY 2007 Award | FY 2008 Cost | FY 2008 Award | FY 2009 Cost | FY 2009 Award | Cost To Complet | Total Cost | Target Value of |
| | | | | | | | | | | | | | | |

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| BUDGET ACTIVITY | | | PE NUMBER AND TITLE | | | | | | | | | PROJECT | | |
|---|------------------------|--------------------------------|---|--------------|--------------------|---------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|---------------|--------------------------|
| 7 - Operational system development | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | D09 | | |
| | Type | | Cost | | Date | | Date | | Date | | Date | e | | Contract |
| Contractor Engineering Support | MIPR / PWD | Various Contractors | 1000 | 3294 | 1-2Q | 4536 | 1-2Q | 1957 | 1-2Q | 1088 | 2Q | | 11875 | 3459 |
| Government Engineering Support | MIPR / PWD | Other Government Organizations | 330 | 2240 | 1-2Q | 2530 | 1-2Q | 1553 | 1-2Q | 772 | 2Q | | 7425 | 2730 |
| Subtotal: | | | 1330 | 5534 | | 7066 | | 3510 | | 1860 | | | 19300 | 6189 |
| | | | | | | | | | | | | | | |
| III. Test And Evaluation | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| System Test and Evaluation | | TBD | | 3819 | 2-3Q | 2673 | 2-3Q | 15792 | 2-3Q | 14690 | 2Q | | 36974 | 11115 |
| Subtotal: | | | | 3819 | | 2673 | | 15792 | | 14690 | | | 36974 | 11115 |
| | | | | | | | | | | | | | | |
| IV. Management Services | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Program management | MIPR / PWD | PM UAS, Redstone Arsenal, AL | 400 | 488 | 1-4Q | 660 | 1-4Q | 336 | 1-4Q | 167 | 1-2Q | | 2051 | 1716 |
| Subtotal: | | | 400 | 488 | | 660 | | 336 | | 167 | | | 2051 | 1716 |
| | | | | | | | | | | | | | | |
| Project Total Cost: | | | 22623 | 92239 | | 120933 | | 45236 | | 32832 | | | 313863 | 109233 |

| | |
|--------------------------------------|----------------------|
| Schedule Detail (R4a Exhibit) | February 2007 |
|--------------------------------------|----------------------|

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|--|--|-----------------------|
| BUDGET ACTIVITY 7 - Operational system development | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | PROJECT D09 |
|--|--|-----------------------|

Schedule Detail: Not applicable for this item.

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

| | | | | | | | | | | |
|---|-------------------|---------------------|---------------------|---|---------------------|---------------------|---------------------|---------------------|------------------------------|------------|
| BUDGET ACTIVITY 7 - Operational system development | | | | PE NUMBER AND TITLE 0305204A - Tactical Unmanned Aerial Vehicles | | | | | PROJECT D10 | |
| COST (In Thousands) | FY 2006 Actual | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | FY 2012 Estimate | FY 2013 Estimate | Cost to Complete | Total Cost |
| D10 SUAV (JMIP) | | | 1985 | 1996 | 2000 | 2000 | 2000 | 2000 | | 11981 |

A. Mission Description and Budget Item Justification: The Small Unmanned Aircraft System (SUAS) program provides the ground maneuver battalions and below with unprecedented situational awareness and enhanced force protection. SUAS is a man portable unmanned aircraft system capable of handling a wide variety of Intelligence, Surveillance & Reconnaissance (ISR) tasks at Battalion and below. The SUAS aircraft has a wingspan of 4.5 feet and weighs 4.2 pounds. It is hand-launched, and provides aerial observation, day or night, at line-of-sight ranges up to 10 kilometers. The aircraft has an endurance rate of 90 minutes and can deliver color or infrared imagery in real time to the ground control and remote viewing stations. SUAS obtained Milestone C approval on 6 Oct 05 and successfully completed IOT&E June 06. The program obtained Full Rate Production authority on 5 Oct 06.

Funding will provide product improvements studies/plans that include: digital data link, noise reduction, integral radio location beacon, endurance and target location error. Effort will result in identification and implementation of technical solutions and product improvements to enhance the warfighting capability of the SUAV system. Additional efforts will focus on the identification, integration, and test of block II/III payloads.

| | | | | |
|--|----------------|----------------|----------------|----------------|
| Accomplishments/Planned Program: | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
| SUAV Product Improvement Studies and Plans | | | 1985 | 1996 |
| Total | | | 1985 | 1996 |

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

| BUDGET ACTIVITY | | | PE NUMBER AND TITLE | | | | | | | | | PROJECT | | |
|---------------------------------------|------------------------|--|--|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|------------------|-------------|--------------------------|
| 7 - Operational system development | | | 0305204A - Tactical Unmanned Aerial Vehicles | | | | | | | | | D10 | | |
| I. Product Development | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Product Improvement Studies and Plans | CPFF | AeroVironment, Simi Valley, California | | | | | | 1985 | 2Q | 1996 | 2Q | | 3981 | |
| Subtotal: | | | | | | | | 1985 | | 1996 | | | 3981 | |
| | | | | | | | | | | | | | | |
| II. Support Costs | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Subtotal: | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| III. Test And Evaluation | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Subtotal: | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| IV. Management Services | Contract Method & Type | Performing Activity & Location | Total PYs Cost | FY 2006 Cost | FY 2006 Award Date | FY 2007 Cost | FY 2007 Award Date | FY 2008 Cost | FY 2008 Award Date | FY 2009 Cost | FY 2009 Award Date | Cost To Complete | Total Cost | Target Value of Contract |
| Subtotal: | | | | | | | | | | | | | | |
| Project Total Cost: | | | | | | | | 1985 | | 1996 | | | 3981 | |