| RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) | DATE<br>FEBRUARY 2005 |
|---|---|
| APPROPRIATION / BUDGET ACTIVITY<br>RDT&E, DEFENSE-WIDE / 3 | R-1 ITEM NOMENCLATURE / PROJECT NO.<br>PE 1160402BB Special Operations (SO) Advanced Technology Development |

| COST (Dollars in Millions) | FY04 | FY05 | FY06 | FY07 | FY08 | FY09 | FY10 | FY11 | Cost to Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| PE1160402BB | 109.800 | 99.689 | 104.315 | 91.459 | 108.874 | 91.530 | 86.495 | 57.681 | Cont. | Cont. |
| S200, SO SPECIAL TECHNOLOGY | 109.800 | 99.689 | 104.315 | 91.459 | 108.874 | 91.530 | 86.495 | 57.681 | Cont. | Cont. |

A. Mission Description and Budget Item Justification:

This program element conducts rapid prototyping and Advanced Technology Demonstrations. It provides a means for demonstrating and evaluating emerging/advanced technologies in as realistic an operational environment as possible by Special Operations Forces users. Evaluation results are included in a transition package which assists in the initiation of or insertion into an acquisition program. The program element also addresses projects that are a result of unique joint, special mission, or area-specific needs for which a few-of-a-kind prototypes must be developed on a rapid response basis, or are of sufficient time sensitivity to accelerate the prototyping effort of a normal acquisition program in any phase.

B. Program Change Summary:

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Previous President's Budget | 105.320 | 48.803 | 71.194 | 54.841 |
| Current President's Budget | 109.800 | 99.689 | 104.315 | 91.459 |
| Total Adjustments | 4.480 | 50.886 | 33.121 | 36.618 |
| Congressional Reductions | | -2.013 | | |
| Congressional Rescissions | | | | |
| Congressional Increases | 0.968 | 59.100 | | |
| Reprogrammings | 3.512 | -3.810 | | |
| SBIR | | -2.391 | | |

Funding:

FY04
- Net increase reflects $.968 million Congressional add for the Long Range Target Biometric ID program that was transferred from the Army and ($3.810) million that was reprogrammed to the Gunship ACTD and a net decrease of ($0.298) that was reprogrammed to higher command priorities.

FY05 Reflects $59.100 for Congressionally added programs as follows:
- Snapshot Synthetic Aperture Radar ($1.000)
- Battery-Free Remote Sensing ($1.500)
- Surveillance Augmentation Vehicle ($1.000)
- Remote Video Weapon Site ($1.700)
- Advanced Multi-Purpose Micro Display System ($1.500)
- Compact Three-Dimensional Imaging ($1.000)
- Angelfire Active Protection ($7.000)
- Long Range Biometric Target ID System ($2.000)
- Autonomous Navigation Sensor Suite ($1.300)
- Foliage Penetrating Solid State Synthetic Radar ($5.100)
- ID Friend or FOE (IFF) Advance Target ($1.300)
- MK V Patrol Replacement Craft ($2.500)
- SOF Exp Technology Integration ($2.000)
- SOF Rotary Wing UAV ($22.000)
- Maritime Tagging, Tracking and Locking ($1.000)
- Foreign Language Translator ($1.400)
- SMAX ($1.700)

- SOF Teletraining System ($1.000)
- TACTICOMP ($1.400)
- Land and Sea Operational Mobility System ($1.700)

Congressional Sectionals decrease ($2.013)
Reprogrammed from the Gunship ACTD ($3.810)

FY06
- Increase reflects additional funds required to begin the flight test of the Advanced Tactical Laser (ATL) Advanced Concept Technology Demonstration (ACTD) System and to begin to evaluate the use of the Viper Strike munitions for the AC-103 Gunship.

FY07
- Increase reflects additional funds required to complete the ATL ACTD flight tests, to begin acquiring the operational Spiral 1 ATL weapon system, and to continue to develop and adapt the Viper Strike munitions.

Schedule: None.

Technical: None.

| Exhibit R-2a, RDT&E Project Justification | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E BA # 3 | Special Operations Special Technology Project S200 |

| Cost ($ in millions) | FY04 | FY05 | FY06 | FY07 | FY08 | FY09 | FY10 | FY11 |
|---|---|---|---|---|---|---|---|---|
| Special Operations Special Technology | 109.800 | 99.689 | 104.315 | 91.459 | 108.874 | 91.530 | 86.495 | 57.681 |
| RDT&E Articles Quantity | | | | | | | | |

A. Mission Description and Budget Item Justification: This project conducts rapid prototyping and Advanced Technology Demonstrations (ATDs). It provides a means for demonstrating and evaluating the utility of emerging/advanced technologies in as realistic an operational environment as possible by Special Operations Forces (SOF) users. This project integrates efforts with each other and conducts technology demonstrations in conjunction with joint experiments and other assessment events. Evaluation results are included in a transition package, which assists in the initiation of or insertion into an acquisition program. The project also addresses unique joint, special mission, or area-specific needs for which a few-of-a-kind prototypes must be developed on a rapid response basis, or are of sufficient time sensitivity to accelerate the prototyping effort of a normal acquisition program in any phase. Efforts include:

- SOF Command, Control, Communications, Computers, and Intelligence (C4I) ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Exploit emerging technologies to conduct ATDs that provide SOF with increased sensory performance. Exploit emerging technologies to locate and track targets or items of interest. Exploit emerging technologies to produce new and improved capabilities in information operations and psychological operations.

- SOF Mobility ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with survivable mobility capabilities in high threat areas and with enhanced situational awareness. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms.

- SOF Weapons ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy. Demonstrate capabilities of smart munitions and fire-and-forget capability. Exploit technologies to increase standoff from threat weapons systems. Decrease cost and logistic support requirements for SOF weapons systems.

- SOF Sustainment/Warrior ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with increased survivability and performance. Exploit emerging technologies to counter the threat of electro-optical devices and devices that detect human presence, and to enhance individual operator capabilities.

- Technology Exploitation Initiative. Exploit emerging technologies to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.

- Advanced Tactical Laser (ATL) Advanced Concept Technology Demonstration (ACTD). The ATL ACTD was started in FY 02 through funding provided by DUSD (AS&C) and the Joint Non-Lethal Weapons Directorate. The intent of the ATL ACTD is to evaluate the military utility of a tactical directed energy weapon on the battlefield to provide direct support to the warfighter. A directed energy weapon has an inherent performance capability (i.e., extremely precise covert strike, selectable effects and lethality, multi-axis engagement) that has the potential to enhance the effectiveness of SOF operators. The ATL ACTD will develop and employ a modular, high-energy laser weapon system on a C-130 platform, capable of conducting ultra-precision strike engagements to enhance mission accomplishment of the warfighter and conduct a military utility assessment of this weapon system.

The steps toward assessing the military utility of a high-energy laser weapon are:

a. Demonstrate weaponization of the sealed-exhaust Chemical Oxygen Iodine Laser in a modular system, capable of employment on a C-130.
b. Demonstrate the ability to acquire and engage tactical targets in an air-to-ground system test.
c. Utilize joint/service exercises to the fullest extent possible, focusing on matching the objectives of the ACTD with those of the desired exercises and demonstrations.

At the completion of the ACTD, leave behind one fully-operational laser system consisting of the laser and beam director, surveillance and acquisition sensors to support employment of the laser system, software, an operator workstation and portable ground support equipment. The system will include documentation required to operate and maintain the ATL system.

- Psychological Operations (PSYOP) “Global Reach” ACTD. Seeks technologies which will transform current PSYOP capabilities through two major objectives: 1) extension of PSYOP product dissemination to reach target audiences in denied areas at a range up to 800 Nautical Miles (NM), and 2) automation (software and hardware) of the PSYOP planning and analysis process.

- PSYOP Modernization. This initiative will explore emergent technologies available in the marketplace to modernize the PSYOP Broadcast System (POBS) and the PSYOP Print System (PPS).
- Special Operations Precision Guided Munition. This initiative will evaluate the use of Viper Strike munitions to provide enhanced capability for the AC-130 Gunship.

Additionally, the project executes the following efforts added by Congress:

- Land and Sea Special Operations (LASSO) Mobility System. Design, integrate, build and evaluate advanced soldier mobility and rural terrain vehicle prototypes.

- Remote Sensor Power Source. Battery-free system to provide long-term, reliable power for a variety of remote sensors and other remote operations that support command and control.

- Foreign Language Translator. Enhancement of voice command function, integrate versatile headset capability and develop an operator level capability to build mission specific translations

- Snapshot Synthetic Apperture Radar. Demonstrate a radar array processor fabricated from COTS micro-processors.

- ANGELFIRE Active Protection. Investigate, develop and demonstrate prototype system, for Full-Spectrum, Close-in Active Protection (FCLAS) that will protect SOF assets from Rocket Propelled Grenades (RPGs) using counter-munitions

- Surveillance Augmentation Vehicle. Integrate Ultra wide band intrusion detection sensors that can be deployed to provide an ad-hoc network for image / data / voice communications and will also provide the ability to cordon an area to protect and monitor any intrusions or device tampering

- Remote Video Weapon Site. A Phase III SBIR contract will be awarded with these funds for the continued development.

- Advanced Multi-Purpose Micro-Display System. This effort will integrate highly efficient display component technology into several SOF applications

- SOF Experimental Technology Integration. Develop and demonstrate a prototype integrated system to support Special Operations Forces (SOF) unique missions in low to moderate threat environments.
- Mark V Patrol Boat Replacement Craft Prototype. Develop composite combatant craft design/fabrication techniques

- TACTICOMP. This effort integrates laser range-finding and precision inertial navigation into commercial PDAs

- Foliage Penetrating Solid State Synthetic Aperture Radar. The intent is to develop and demonstrate on an RC-12M aircraft a purpose-built radar to detect and identify buried objects.

- Maritime Tagging, Tracking & Locating. Demonstrates and evaluates available technologies to support and enable SOF maritime tagging, tracking and locating capabilities.

- Autonomous Navigation Sensor Suite. Sensor development program coupled with laboratory evaluation of unique sensors types for robotic vehicles.

- Compact Three-Dimensional Imaging. Provide robust target identification capability, develop technology for individual user to interpret and take advantage of 3D imaging.

- SOF Teletraining. Special Operations Forces Teletraining System (SOFTS) is a means of delivering training using personal computers and broadband internet connections

- Rotary Wing Unmanned Aerial Vehicle (UAV). Enhance intelligence gathering and dissemination capabilities for urban and complex terrain environments.

- Affordable Access to Night Vision Equipment (NVE). Provide calibration, standardization and characterization of night vision capabilities to the SOF Community.

- Dual Band Universal Night Sight (DUNS). Demonstrate integrated image and long-wave infrared fused system within the same aperture.

- Light Reconnaissance Vehicle. Develop and validate system concept for a family of SOF reconnaissance vehicles incorporating integrated local and global networks linked to other manned and unmanned platforms, and C4I architectures.

- SOF Unmanned Vehicle Technology Integration. Support unmanned vehicle development and integration efforts at the Prototype Maintenance Facility supporting USSOCOM projects.

- Special All Terrain Vehicle. Obtain and modify commercial personal mobility vehicles that incorporate commercially available diesel

engines.

- Advanced Target Identification. Explore vibroelectronic signature target analysis and passive acoustic reflective device technologies for AC-130U Gunship target acquisition capabilities.

- Dominant Vision. Explore advanced situational awareness and fusion technologies for enhancement of various platforms' ability to navigate and identify targets through adverse weather and obscured visual situations.

- Naval Special Warfare (NSW) Craft. Explore technologies to support future combatant craft development.

- Synthetic Aperture Radar Millimeter Forward Looking Infrared Radar (FLIR). Provide a ground map plan position indicator view that can be changed to a high resolution image using synthetic aperture radar techniques.

- SOCOM Multipurpose Antenna, X-Band (SMAX). Provide a low profile, hybrid steered antenna for easy mounting on a C-130 or CV-22.

- Long Range Biometric Target Identification System. Provide a deployable system to positively identify personnel, in all light conditions, at ranges beyond 500 meters.

B. Accomplishments/Planned Program

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SOF C4I ATDs | 1.828 | 2.324 | 2.204 | 2.511 |
| RDT&E Article Quantity | | | | |

FY04 Continued the development and evaluation of FY03 efforts. Continued Night Vision Electro-Optic Enhancements, Low Probability of Intercept/Detection (LPI/D) Imagery Forwarding, Tactical Personal Computer, Antenna Enhancements, Communications for Robotics, and Tactical Systems Specific Emitter ID.
FY05 Continue development and evaluation of FY04 efforts. Initiate SATCOM LPI/LPD with lightweight tracking antenna and two-way broadband satellite and multimedia service.
FY06 Continue development and evaluation of FY05 efforts. Continue to exploit emerging technologies to conduct ATD that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Continue to exploit emerging technologies to conduct ATDs that provide SOF with increased

sensory performance. Continue to exploit emerging technologies to locate and track targets or items of interest. Initiate Digital Direct Action Unmanned System C4I, Modular Reconnaissance and Surveillance Equipment, and Radio Frequency Tools.
FY07 Continue development and evaluation of FY06 efforts. Continue to exploit emerging technologies to conduct ATD that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Continue to exploit emerging technologies to conduct ATDs that provide SOF with increased sensory performance. Continue to exploit emerging technologies to locate and track targets or items of interest.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SOF Mobility ATDs | 2.260 | 2.367 | 2.253 | 2.512 |
| RDT&E Article Quantity | | | | |

FY04 Continued development and evaluation of FY03 efforts. Continued SOF Robotics and Conformal Load Bearing Antenna. Completed Sea, Air, Land Delivery Vehicle Airdrop.
FY05 Continue development and evaluation of FY04 efforts. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms.
FY06 Continue development and evaluation of FY05 efforts. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms. Initiate Miniature Inertial Navigation Underwater, Virtual Display for Combatant Craft.
FY07 Continue development and evaluation of FY06 efforts. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SOF Weapons ATDs | 2.225 | 2.358 | 2.363 | 2.211 |
| RDT&E Article Quantity | | | | |

FY04 Continued development and evaluation of FY03 efforts. Continued Underwater Adhesives and Remote Operated Small Arms Mount. Initiated the Naval Special Warfare Combatant Craft Weapons, Enhanced Small Arms Technologies, and SOF Combat Weapon Shot Counter.

Completed Anti-Material Payload Rifle.

FY05 Continue development and evaluation of FY04 efforts. Initiate Enhanced Signature Suppression for lightweight machine guns and Enhanced Performance long range ammunition.

FY06 Continue development and evaluation of FY05 efforts. Continue to exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy. Exploit technologies to increase standoff from threat weapons systems. Decrease cost and logistic support requirements for SOF weapons systems. Initiate SOF Combat Assault Rifle Technology.

FY07 Continue development and evaluation of FY06 efforts. Continue to exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SOF Sustainment/Warrior ATDs | 2.000 | 1.475 | 1.963 | 1.939 |
| RDT&E Article Quantity | | | | |

FY04 Continued development and evaluation of FY03 efforts. Continued Intrusion Sensor System, Military Free Fall Advanced Navigation System and Battery Recharging System. Initiated development of Directional Axial Magnetic Propulsion System.

FY05 Continue development and evaluation of FY04 efforts. Initiate Integrating Capabilities into Materials.

FY06 Continue development and evaluation of FY05 efforts. Continue to exploit emerging technologies to conduct ATD's that provide SOF with increased survivability, performance and countermeasures technologies. Continue evaluation of alternative power sources. Initiate SOF Warrior Technology, Improved Cratering Device.

FY07 Continue development and evaluation of FY06 efforts. Continue to exploit emerging technologies to conduct ATD's that provide SOF with increased survivability, performance and countermeasures technologies. Continue evaluation of alternative power sources.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Technology Exploitation Initiative (TEI) | .255 | .710 | .750 | .800 |
| RDT&E Article Quantity | | | | |

FY04 Continued to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. Initiated Improved Underwater Explosive Demonstration.

FY05 Continue to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.

FY06 Continue to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.

FY07 Continue to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| ATL/ACTD | 55.566 | 23.639 | 61.763 | 57.183 |
| RDT&E Article Quantity | | | | |

FY04 Completed the design and began the build-up of the ATL ACTD system. Continued the system/subsystem design experimentation and analysis. Accomplished the subsystem and system Critical Design Reviews, the final reviews of the system designs before component fabrication, assembly and check out. Procured long-lead components and began acquisition and delivery of ATL ACTD system hardware and software. Began the Military Utility Assessment using ATL simulations and/or component hardware testing in conjunction with military exercises.

FY05 Continue to procure hardware and complete initial software development. Begin testing the ATL ACTD subsystems and continue the Military Utility Assessment. Begin component integration (e.g., optics module and laser generation module), component testing, and subsystem integration and testing. Begin modification of the ATL ACTD host aircraft. Begin ground test of the Integrated Battle Management and Optical Control Systems. Begin ground assembly, integration and test of the high-power flight test laser module. Complete modifications of the integration and test facilities.

FY06 Continue the Military Utility Assessment. Complete build-up, integration and ground test of the high-power flight test laser module and integrate the entire ATL ACTD system on the C-130 host aircraft. Complete ground verification test of the entire integrated ATL system. Complete preparation for flight testing and begin flight tests.

FY07 Complete the ATL ACTD flight tests, demonstrate the Design Reference Missions, and complete the Military Utility Assessment. Begin acquisition of the operational Spiral-1 ATL weapon system.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| PSYOP “Global Reach” ACTD | 2.795 | 2.878 | 5.973 | 5.981 |
| RDT&E Article Quantity | | | | |

FY04 Exploited mature and evolving technologies to address specific PSYOP deficiencies and provide the Combatant Commander with organic rapid-response PSYOP assets to meet evolving mission needs. The ACTD commenced transformation of current PSYOP capabilities in two major areas: 1) extension of PSYOP broadcast range (AM/FM/TV) in a standoff mode to reach target audiences deep in hostile territory and denied areas, and 2) automation (software & hardware) of the PSYOP planning and analysis process. Funding managed design, engineering and technical integration of multiple technologies for UAV PSYOP broadcast payloads and the PSYOP Planning and Analysis System.

FY05 Continue management of the spiral design, engineering, technical integration and demonstrations of multiple technologies for UAV payloads, scatterable media (to include hardened/air-droppable satellite radios, miniaturized AM/FM broadcast transmitters, miniaturized loudspeakers, talking leaflets, and media such as internet broadcast and cellular telephones), and PSYOP Planning and Analysis System.

FY06 Continue management of the spiral design, engineering and technical integration of multiple technologies culminating with military utility assessments for UAV payloads, scatterable media, and a PSYOP Planning and Analysis System.
FY07 Continue management of the spiral design, engineering and technical integration of multiple technologies as the variants become more robust culminating with further military utility assessments for UAV payloads, scatterable media, and a PSYOP Planning and Analysis.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| PSYOP Modernization | | 4.621 | 9.954 | 5.981 |
| RDT&E Article Quantity | | | | |

FY05 Explore emergent technologies to extend the reach of USSOCOM PSYOP products and their distribution channels. Such technologies may include Long Range Broadcast Systems, Scatterable Media, Telephone and Internet Broadcast Media, space-based dissemination systems, and other technologies which will give USSOCOM a stand-off capability to deliver multi-media PSYOP products to target audiences in denied areas or over long range distances (over 850 miles) in near-real-time.
FY06 Continues exploration of emergent technologies to extend USSOCOM PSYOP product reach.
FY07 Continues exploration of emergent technologies to extend USSOCOM PSYOP product reach.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Classified | .600 | 2.661 | 3.934 | 6.583 |
| RDT&E Article Quantity | | | | |

FY04 Details provided under separate cover.
FY05 Details provided under separate cover.
FY06 Details provided under separate cover.
FY07 Details provided under separate cover.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Special Operations Precision Guided Munition | | | 13.158 | 5.758 |
| RDT&E Article Quantity | | | | |

FY06 Initiate effort to evaluate use of Viper Strike munitions to provide enhanced capability for the AC-130 Gunship, operating at higher altitudes, against a range of threats. Integrate and adapt the Viper Strike munitions for use in the AC-130 Gunship. Support U.S. Army Tactical Missile System development of the Viper Strike warhead to ensure compatibility of the enhanced Viper Strike warhead (P3I to engage stationary targets, and time critical mobile targets) with AC-130 employment.
FY07 Continue to develop and adapt Viper Strike munitions for use in AC-130 Gunship. Conduct military utility assessment of the Viper Strike in an AC-130 Gunship. Investigate use of Viper Strike in AC-130 flying at higher orbits (pressurized environment).

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Rotary Wing UAV | 14.721 | 21.086 | | |
| RDT&E Article Quantity | 4 | | | |

FY04 This initiative was a Congressional Plus-up. Continued to identify and develop SOF-unique capabilities on the baseline aircraft developing concept of operations and payloads that address critical needs of the SOF warfighter. Support Defense Advanced Research Projects Agency/Army platform development and maturation program through ground and flight testing.
FY05 This is a Congressional Plus-Up. Procure 7 prototype rotary wing aircraft for extensive Test, Analyze, Fix/Tactics, Techniques, and Procedures as per Congressional direction. Support the SOF Long Endurance (SLED) ACTD, developing payloads and concepts of operation for the A-160. Continue to support platform development and maturation program through ground and flight evaluation.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Long Range Biometric Target Identification System | .968 | 1.918 | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Development effort continued to investigate and evaluate biometric feature measurement techniques that can be incorporated in a deployable system supporting SOF missions.
FY05 This is a Congressional Plus-Up. Continues to investigate and evaluate biometric feature measurement techniques. Develop a prototype system to remotely validate identities of specified persons. Support ongoing biometric efforts within the Department of Defense for Special Operations Forces applications.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Dominant Vision | 4.620 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Development effort explored Advanced Situational Awareness and Sensor Fusion Technologies for enhancement of SOF platform's ability to navigate and identify targets through adverse weather and obscured visual situation. Analysis of Multi-spectral and Hyper-spectral techniques will be evaluated.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Affordable Access to NVE | 1.635 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Supported a pilot project that will provide calibration, standardization, and characterization of NV capabilities for the SOF community.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Advanced Target ID for AC-130U Gunship | 3.704 | 1.247 | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Development effort continued to explore Vibro Electronic Signature Target Analysis (VESTA) and Passive Acoustic Reflective Device (PARD) technologies for enhancement of the AC-130U Gunship target acquisition capabilities. Enhancements to the Gunships' ability to align the weapons at night and over water were also being evaluated.
FY05 This is a Congressional Plus-Up. Continue to explore Vibro Electronic Signature Target Analysis (VESTA) and Passive Acoustic Reflective Device (PARD) technologies for enhancement of the AC-130U Gunship target acquisition capability and Special Operations Forces (SOF) enhanced beacon systems. Also plan to conduct analysis of VESTA with a more advanced Solid State Synthetic Aperture Radar (SSSAR) for next generation Gunship Applications.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Dual Band Universal Night Sight | 1.635 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Technology demonstrated an integrated image intensified and long-wave infrared fused system within the same aperture.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Synthetic Aperture Radar (Millimeter FLIR) | 4.090 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. The Synthetic Aperture Radar provides a ground map plan position indicator view, which can be changed to a high resolution image using synthetic aperture radar techniques that will allow for unassisted instrument landings and target classification capabilities. Technology demonstrated and integrated package on a light twin civil aircraft suitable for use on a C-130 or rotary wing platform.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Light Reconnaissance Vehicle | 2.309 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Continued development of a system concept for the Lightweight Reconnaissance Vehicle (LRV). Investigated potential near-term hybrid diesel/electric powerplants for the LRV.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SMAX | .965 | 1.631 | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. The SMAX is an innovative antenna derived from the Navy's Cooperative Engagement Capability design. Developed a hybrid steered antenna that provides a low profile for easy mounting on a C-130 or CV-22 along with light civil aircraft and rotary wing assets.
FY05 This is a Congressional Plus-Up. The FY05 activity takes the brass-board technology demonstration item and fabricates a flight-worthy test article. The test article is integrated with the Solid State Synthetic Aperture Radar that was developed as an FY02 Congressional Plus-up. The new system performance will be measured on an RC-12M aircraft and provided to PEO(FW) for targeting radar risk reduction and radar system procurement option.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SOF Unmanned Vehicle Technology Integration | 2.695 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Supported unmanned vehicle development and integration efforts at the Prototype Maintenance Facility supporting Special Operations Technology Development and Special Operations Advanced Technology Development projects.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Special All Terrain Vehicle | 2.043 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Technology development effort obtained and modified commercial personal mobility vehicles to produce diesel fueled militarized prototypes for initial evaluation by SOCOM.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| NSW Craft | 2.886 | | | |
| RDT&E Article Quantity | | | | |

FY04 This initiative was a Congressional Plus-up. Explored technologies to support future combatant craft development.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Land and Sea Special Operations (LASSO) Mobility System | | 1.631 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. Design, integrate, build and evaluate advanced soldier mobility and rural terrain vehicle prototypes.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Remote Sensor Power Source | | 1.437 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. Develop a battery-free, self-replenishing, energy management platform that will power remote sensors and other remote operations for over 20 years under severe environmental conditions, such as temperature and pressure extremes. This proposed battery-free system would provide long-term, reliable power for a variety of remote sensors and other remote operations that support command and control.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Foreign Language Translator | | 1.342 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. Conduct improvements based on FY04 military utility assessment and user evaluation of the Voice Response Translator. Effort will include enhancement of voice command function, integrate versatile headset capability and develop an operator level capability to build mission specific translations. Five initial prototypes will undergo lab and field evaluation followed by fifty units in an extended user evaluation in multiple situations.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Snapshot Synthetic Apperture Radar | | .959 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. The intent of this effort is to demonstrate a radar array processor fabricated from COTS micro-processors. Micro-processors have evolved to the point that expensive, one of a kind special purpose array processors can be replaced with much lower cost COTS arrays to perform “typical” radar signal processing.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| ANGELFIRE Active Protection | | 6.709 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. Investigate, develop and demonstrate prototype system, in concert with the U.S. Army Science and Technology Objective for Full-Spectrum, Close-in Active Protection (FCLAS) that will protect Special Operations Forces (SOF) and SOF assets from Rocket Propelled Grenades (RPGs) using counter-munitions.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Surveillance Augmentation Vehicle | | .959 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. The funding provided by Congress will purchase and integrate real time, tiled mosaic displays that have 10 million mega pixels providing the soldier with the capability of facial and scripted recognition at very long distances. Funding would integrate Ultra wide band intrusion detection sensors that can be deployed to provide an ad-hoc network for image / data / voice communications and will also provide the ability to cordon an area to protect and monitor any intrusions or device tampering. The funding will give us the capability to integrate all these cutting edge technologies into a standard military vehicle therefore taking the SOF warrior off the ground of a hostile environment and placing him in a safer and more technologically advanced war fighting vehicle.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Remote Video Weapon Site | | 1.631 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. A remote video weapon site is currently being developed by USSOCOM under a FY03 SBIR Phase II contract. The FY05 funds will be used to mature the design to a Technology Readiness Level (TRL) 7. A Phase III SBIR contract will be awarded with these funds for the continued development.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Advanced Multi-Purpose Micro-Display System | | 1.437 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. This effort will integrate highly efficient display component technology into several SOF applications to reduce power consumption while improving readability.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SOF Experimental Technology Integration | | 1.918 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. Develop and demonstrate a prototype integrated system incorporating unmanned systems,

command and control, tactical networks, reconnaissance equipment and user interfaces to support Special Operations Forces (SOF) unique missions in low to moderate threat environments.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Mark V Patrol Boat Replacement Craft Prototype | | 2.396 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. This effort will develop composite combatant craft design/fabrication techniques, and, using the aluminum-hulled MK V as a benchmark, quantify through testing advantages in the areas of shock mitigation, sea-keeping, and life cycle cost reduction.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| TACTICOMP | | 1.342 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. This effort integrates laser range-finding and precision inertial navigation into commercial PDAs providing a compact, wireless, and secure means to provide individual operator network stand-alone and networked communications, situation awareness, and command and control capabilities.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Foliage Penetrating Solid State Synthetic Aperture Radar | | 4.889 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. The intent is to develop and demonstrate on an RC-12M aircraft a purpose-built radar to detect and identify buried objects. Radars pressed into service in Iraq were designed for drug interdiction in the jungle foliage of South America. These systems are not suitable for detecting objects buried in dry, sand environments as they employ very low power and very wide bandwidths. This system will utilize existing radar frequencies that permit very high radiated power to overcome ground losses and provide deeper penetration than existing systems.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Maritime Tagging, Tracking & Locating | | .959 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. This effort demonstrates and evaluates available technologies to support and enable SOF maritime tagging, tracking and locating capabilities. The emphasis will be on overall system architecture, connectivity with SOF, conventional and national resources, and innovative platforms, sensors and supporting infrastructure.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Autonomous Navigation Sensor Suite | | 1.247 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. Sensor development program coupled with laboratory evaluation of unique sensors types for robotic vehicles.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| Compact Three-Dimensional Imaging | | .959 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. Provide robust target identification capability, develop technology for individual user to interpret and take advantage of 3D imaging.

| | FY04 | FY05 | FY06 | FY07 |
|---|---|---|---|---|
| SOF Teletraining | | .959 | | |
| RDT&E Article Quantity | | | | |

FY05 This initiative is a Congressional Plus-Up. The Special Operations Forces Teletraining System (SOFTS) is a means of delivering training using personal computers and broadband internet connections. This training solution is a PC-based teletraining technology that enables all students and instructors to see each other on screen and hear each other. There are other web-based and on-screen technologies that facilitate document sharing, testing. Additionally, provides pilot courses in target languages to determine the effectiveness of SOFTS as a training delivery means for initial acquisition foreign language training for USASOC, NAVSPECWARCOM, and AFSOC.

B. Other Program Funding Summary: None.

C. Acquisition Strategy. N/A.