UNited States Special Operations Command

FISCAL YEAR (FY) 2005

BUDGET ESTIMATES

RDT&E, DEFENSE-WIDE

FEBRUARY 2004
## ORGANIZATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>AFSOC</td>
<td>Air Force Special Operations Command</td>
</tr>
<tr>
<td>NAVSPECWARCOM</td>
<td>Naval Special Warfare Command</td>
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<tr>
<td>TSOC</td>
<td>Theater Special Operations Command</td>
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<td>USASOC</td>
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<td>ARSOA</td>
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<td>160th SOAR</td>
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## ACRONYMS

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<th>Army Aviation Command &amp; Control System</th>
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<td>All Light Level Television</td>
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<td>Integrated Defensive Armed Penetrator</td>
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### ACRONYMS

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<th>Acronym</th>
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<td>Improved Special Operations Communications Assemblage</td>
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<td>Integrated Technical Management Plan</td>
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<td>JBS</td>
<td>Joint Base Station</td>
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<td>Joint Deployable Intelligence Support System</td>
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<td>JMPS</td>
<td>Joint Mission Planning System</td>
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<td>JSTAR</td>
<td>Joint Surveillance and Target Attack Radar System</td>
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<td>JOS</td>
<td>Joint Operational Stocks</td>
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<td>LASIK</td>
<td>Laser-Assisted IN-Situ Keratomileusis</td>
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<td>Miniature Multiband Beacon</td>
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<td>Non-Gasoline Burning Outboard Engine</td>
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<td>Precision Laser Targeting Device</td>
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<td>Swimming Induced Pulmonary Edema</td>
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**ACRONYMS**

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<td>SOMS-B</td>
<td>Special Operations Media Systems B</td>
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<tr>
<td>SOPMOD</td>
<td>SOF Peculiar Modification</td>
</tr>
<tr>
<td>SOPMODM-4</td>
<td>SOF Peculiar Modification-M4 Carbine</td>
</tr>
<tr>
<td>SOST</td>
<td>Special Operations Special Technology</td>
</tr>
<tr>
<td>SOTD</td>
<td>Special Operations Technology Development</td>
</tr>
<tr>
<td>SOTVS</td>
<td>Special Operations Tactical Video System</td>
</tr>
<tr>
<td>SPEAR</td>
<td>SOF Personal Equipment Advanced Requirements</td>
</tr>
<tr>
<td>SPIKE</td>
<td>Shoulder Fired Smart Round</td>
</tr>
<tr>
<td>SRC</td>
<td>Systems Readiness Center</td>
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<td>SRC</td>
<td>Special Reconnaissance Capabilities</td>
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<tr>
<td>SSSAR</td>
<td>Solid State Synthetic Aperture Radar</td>
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<tr>
<td>START</td>
<td>Special Threat Awareness receiver/Transmitter</td>
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<tr>
<td>STD</td>
<td>Swimmer Transport Device</td>
</tr>
<tr>
<td>SYDET</td>
<td>Sympathetic Detonator</td>
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<tr>
<td>TACLAN</td>
<td>Tactical Local Area Network</td>
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<tr>
<td>TDFD</td>
<td>Time Delay Firing Device</td>
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<tr>
<td>ACRONYM</td>
<td>Description</td>
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<tr>
<td>------------</td>
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<tr>
<td>TEI</td>
<td>Technology Exploitation Initiative</td>
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<tr>
<td>TF/TA</td>
<td>Terrain Following/Terrain Avoidance</td>
</tr>
<tr>
<td>TRS</td>
<td>Tactical Radio System</td>
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<tr>
<td>TTHM</td>
<td>Titanium Tilting Helmet Mount</td>
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<tr>
<td>UARRSI</td>
<td>Universal Aerial Refueling Receptacle Slipaway</td>
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<td>UAV</td>
<td>Unmanned Aerial Vehicle</td>
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<td>UBA</td>
<td>Underwater Breathing Apparatus</td>
</tr>
<tr>
<td>UHF</td>
<td>Ultra High Frequency</td>
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<td>UK</td>
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<td>VESTA</td>
<td>Vibro-Electronic Signature Target Analysis</td>
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<tr>
<td>VHF</td>
<td>Very High Frequency</td>
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<tr>
<td>VSWMCM</td>
<td>Very Shallow Water Mine Countermeasures</td>
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<tr>
<td>VTC</td>
<td>Video Teleconferencing</td>
</tr>
<tr>
<td>WIRED</td>
<td>Wind Tunnel Integrated Real Time In the Cockpit/Real Time Out of the Cockpit Experiments and Demonstrations</td>
</tr>
<tr>
<td>WMD</td>
<td>Weapons of Mass Destruction</td>
</tr>
<tr>
<td>WSADS</td>
<td>Wind Supported Air Delivery System</td>
</tr>
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</table>
# SPECIAL OPERATIONS COMMAND RDT&E PROGRAM

<table>
<thead>
<tr>
<th>Program</th>
<th>Item</th>
<th>Budget Activity</th>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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<td>SOF Medical Technology Development</td>
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<td>151</td>
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<td>196</td>
<td>Small Business Innovative Research</td>
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<td>11.546</td>
<td>13.498</td>
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<td>200</td>
<td>Spec Operations Intelligence Systems Development</td>
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<td>6.670</td>
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<td>SOF Medical Technology Development</td>
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<td>202</td>
<td>SOF Operational Enhancements</td>
<td>1</td>
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<td>86.902</td>
<td>81.683</td>
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</table>

1 - Details are classified and will be provided under separate cover.
2 - Funding levels and details are classified and will be provided under separate cover.

## Total Special Operations Command:

|                  | 484.565 | 594.630 | 481.817 |

Page 1 of 1

UNCLASSIFIED
Note: In FY 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 2.

A. Mission Description and Budget Item Justification

This program element enables USSOCOM to conduct studies and develops laboratory prototypes for applied research and advanced technology development, as well as leverage other organizations' technology projects that may not otherwise be affordable within MFP-11. Applying small incremental amounts of investments to DOD, other government agencies, and commercial organizations allows the Commander, USSOCOM to influence the direction of technology development or the schedule against which it is being pursued, and to acquire emerging technology for Special Operations Forces. This project provides an investment strategy for USSOCOM to link technology opportunities with USSOCOM capability deficiencies, capability objectives, technology thrust areas, and technology development objectives.
### B. Change Summary Explanation:

<table>
<thead>
<tr>
<th></th>
<th>FY2003</th>
<th>FY2004</th>
<th>FY2005</th>
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</thead>
<tbody>
<tr>
<td>Previous President's Budget</td>
<td>18.006</td>
<td>9.715</td>
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<td>Current President's Budget</td>
<td>17.914</td>
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<td>13.109</td>
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<td>Total Adjustment's</td>
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<td>-.033</td>
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<tr>
<td>Congressional Program Reductions</td>
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<td>-.211</td>
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<td>Congressional Rescissions</td>
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<tr>
<td>Congressional Increases</td>
<td></td>
<td>10.225</td>
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<tr>
<td>Reprogrammings</td>
<td>-.064</td>
<td></td>
<td>-.033</td>
</tr>
<tr>
<td>SBIR Transfer</td>
<td></td>
<td>-.455</td>
<td></td>
</tr>
</tbody>
</table>

FY03
Decrease of $.064 million reflects USSOCOM realignment of resources to support higher command priorities.

FY04
Reflects $10.225 million for Congressionally added programs as follows:
- SPIKE Urban Warfare System ($3.000)
- Sensors for Autonomous Navigation ($2.550)
- Automated Assembly ($2.550)
- Image Fusion Common Aperture System Development ($2.125)

FY05
Decrease of $.033 million is based on current inflation factors.

Schedule: None.

Technical: None.
Appropriation/Budget Activity
RDT&E  BA # 2
Special Operations Technology Development/Project S100

<table>
<thead>
<tr>
<th>Cost ($ in millions)</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
</tr>
</thead>
</table>

**Note:** In FY 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 2.

A. Mission Description and Budget Item Justification: This project conducts studies and develops laboratory prototypes for applied research and advanced technology development, as well as leverages other organizations' technology projects that may not otherwise be affordable within MFP-11. Applying small incremental amounts of investments to DOD, other government agencies, and commercial organizations allows the Commander USSOCOM to influence the direction of technology development or the schedule against which it is being pursued, and to acquire emerging technology for Special Operations Forces (SOF). This project provides an investment strategy for USSOCOM to link technology opportunities with USSOCOM capability deficiencies, capability objectives, technology thrust areas, and technology objectives. Efforts include:

- **SOF Command, Control, Communications, Computers, and Intelligence (C4I) Technologies.** Exploit technologies that provide SOF with improved situational awareness and communications in all environments. Develop technologies to provide significant improvements to SOF’s capability to accurately detect and track threats or targets. Exploit and demonstrate technologies that provide enhanced sensors and command and control. Develop technologies to provide new and improved capabilities in information operations and psychological operations.

- **SOF Mobility Technologies.** Exploit technologies to improve the performance and survivability, and reduce the detectability of SOF mobility assets. Exploit and develop technologies to provide SOF the capability to conduct ground, air, and sea mobility operations in denied areas. Exploit and develop technologies to enhance logistics support, reduce cost and improve the performance of SOF mobility platforms.
• SOF Weapons Technologies. Exploit technologies to provide SOF with standoff capabilities for targeting and locating personnel and equipment. Exploit technologies to discriminate targets and provide real-time active decision-making capabilities. Exploit technologies that enhance logistics, reduce cost and enhance performance of SOF weapons and munitions. Exploit technologies to provide multipurpose, adaptable weapons applicable to SOF platform and missions.

• SOF Sustainment Technologies. Exploit technologies to increase SOF’s survivability and performance. Exploit technologies to improve the human endurance and sensory performance without interfering with normal sensory functions. Exploit and develop technologies to counter the threat of electro-optical devices, devices that detect human presence, and enhance individual operator capabilities.

• Concept Exploration Studies. Explore and validate concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities.

• Technology Development Exploitation. Exploit technologies to meet critical SOF capability objectives. Requirements in these areas may be advertised to industry and government research and development agencies via broad area announcements and calls for white papers.

Additionally, these efforts were added by Congress:

• Shoulder Fired Smart Round (SPIKE) Urban Warfare System. Congressional add for a man-portable fire-and-forget rocket for anti-material use. Possible maritime platform applications.

• Sensors for Autonomous Navigation. Congressional add that will demonstrate a sensor suite for autonomous vehicle navigation.

• Automated Assembly (of Electro-Optic Sensors and Devices). Congressional add to apply reconfigurable robotic assembly techniques to improve design of components and assembly of electro-optic devices.

• Image Fusion Common Aperture Systems Development. Congressional add for development of a common aperture for the dual band systems (intensified and thermal).
• Knowledge Superiority. Congressional add for knowledge superiority for transitional warfighter.

• Large Format Uncooled Infrared Sensors. Congressional add for development of larger format arrays to enhance surveillance systems.

• Imaging Auto Sensors For Autonomous Vehicles. Congressional add to incorporate unique microelectronics and opto-electronic processing in low cost micro-sensors.

• Shortwave Infrared Imagers. Congressional add to develop large area focal plane arrays and cameras for unattended sensors and navigation in difficult terrain.

• Night Vision Fusion & Rapid Transmission. Congressional add to integrate near infrared and long wave infrared sensors coupled to a covert long range communications device.

B. Accomplishments/Planned Program

<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOF Command, Control, Communications, Computers, and Intelligence (C4I) Technologies.</td>
<td>1.123</td>
<td>2.550</td>
<td>3.180</td>
</tr>
<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FY03  Continued development of FY02 efforts. Continued Color Night Vision Fusion, Reconnaissance Technologies, Undersea Master Communications Node, and Enhanced Situational Awareness. Completed PSYOP Extended-Range Broadcast and Man-Portable Counter Mortar System.</td>
</tr>
<tr>
<td>FY04  Continue development of FY03 efforts. Initiate Antenna Enhancements and Small Hand-held Night Vision Devices.</td>
</tr>
<tr>
<td>FY05  Continue development of FY04 efforts. Continue to exploit, develop and demonstrate technologies that provide SOF with improved situational awareness and communications in all environments, the capability to accurately detect and track threats or targets, provide enhanced sensors and command and control, and continue investigations of technology thrust areas. Planned efforts include illumination technologies for tagging and tracking.</td>
</tr>
</tbody>
</table>
## Exhibit R-2a, RDT&E Project Justification

**Appropriation/Budget Activity**

<table>
<thead>
<tr>
<th>RDT&amp;E</th>
<th>BA # 2</th>
<th>Special Operations Technology Development/Project S100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: FEBRUARY 2004</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SOF Mobility Technologies

<table>
<thead>
<tr>
<th>FY03</th>
<th>FY04</th>
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</thead>
<tbody>
<tr>
<td>1.502</td>
<td>2.161</td>
<td>3.080</td>
</tr>
</tbody>
</table>

**RDT&E Articles Quantity**


FY05  Continue development of FY04 efforts.  Continue to exploit technologies to improve the performance and survivability, and reduce the detection of SOF mobility assets.  Continue to exploit and develop technologies to provide SOF the capability to conduct ground, air, and sea mobility operations in denied areas and continue investigations of technology thrust areas.  Continue to exploit and develop technologies to enhance logistics support, reduce cost and improve the performance of SOF mobility platforms.

### SOF Weapons Technologies

<table>
<thead>
<tr>
<th>FY03</th>
<th>FY04</th>
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</thead>
<tbody>
<tr>
<td>.881</td>
<td>.874</td>
<td>1.817</td>
</tr>
</tbody>
</table>

**RDT&E Articles Quantity**

FY03  Continued development of FY02 efforts.  Continued the development of the SOF Demolitions Kit Enhancements and Universal Initiator.  Completed Enhanced Small Arms Technology.

FY04  Continue development of FY03 efforts.  Continue Universal Initiator and SOF Demolitions Kit Enhancements.

FY05  Continue development of FY04 efforts.  Continue to exploit technologies to provide SOF with standoff capabilities for targeting and locating personnel and equipment.  Exploit technologies to discriminate targets and provide real-time active decision-making capabilities.  Exploit technologies that enhance logistics, reduce cost and enhance performance of SOF weapons and munitions.  Exploit technologies to provide multipurpose, adaptable weapons applicable to SOF platforms and missions.  Continue investigations of technology thrust areas.

### SOF Sustainment Technologies

<table>
<thead>
<tr>
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<th>FY04</th>
<th>FY05</th>
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</thead>
<tbody>
<tr>
<td>.341</td>
<td>1.516</td>
<td>1.600</td>
</tr>
</tbody>
</table>

**RDT&E Articles Quantity**

FY03  Continued development of FY02 efforts.  Continued Special Tactics Rappel/Fast Rope and GEO Survey Kit.  Completed Active Noise Cancellation and Accurate Tactical Navigation System.
<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
<th>Exhibit R-2a, RDT&amp;E Project Justification</th>
<th>Date: FEBRUARY 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDT&amp;E BA # 2</td>
<td>Special Operations Technology Development/Project S100</td>
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<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY04  Continue development of FY03 efforts. Initiate the Special Reconnaissance Simulator.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY05  Continue development of FY04 efforts. Continue to exploit technologies to increase SOF’s survivability and performance. Continue to exploit technologies to improve the human endurance and sensory performance. Continue investigations of technology thrust areas.</td>
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<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
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<tr>
<td>Concept Exploration Studies</td>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
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</tr>
<tr>
<td>FY03  Continued to conduct concept studies to explore/validate projects which support USSOCOM desired operational capabilities. Completed Shock Mitigation Maritime Studies. Initiated Low Cost Autonomous Attack System AC-130 concept to address SOF aircraft using a small UAV for armed reconnaissance, Mission Configurable Modified SOF Combatant Craft Study and ASDS Optics Study.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY04  Continue to conduct concept studies to explore/validate projects which support USSOCOM desired operational capabilities.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY05  Continue to conduct concept studies to explore/validate projects which support USSOCOM desired operational capabilities.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Technology Development Exploitation</td>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY03  Continued to exploit technologies to meet critical SOF capability objectives. Initiated Virtual Periscope Study for algorithm development of above water data collection from below the surface, Technology Roadmaps for the technology thrust areas, and a multi-frequency underwater secure homing system for combat swimmers.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FY04  Continue to exploit technologies to meet critical SOF capability objectives. Continue Technology Roadmaps for technology thrust areas. Initiate a study to evaluate a new and revolutionary flameproof textile material.</td>
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</tr>
<tr>
<td>FY05  Continue to exploit technologies to meet critical SOF capability objectives. Continue Technology Roadmaps for technology thrust areas.</td>
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</tr>
<tr>
<td>Appropriation/Budget Activity</td>
<td>FY03</td>
<td>FY04</td>
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<tr>
<td>RDT&amp;E    BA # 2</td>
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**Classified**

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<td>1.186</td>
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**RDT&E Articles Quantity**

**FY03** Details provided under separate cover.
**FY04** Details provided under separate cover.
**FY05** Details provided under separate cover.

**SPIKE Urban Warfare System**

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</thead>
<tbody>
<tr>
<td>3.321</td>
<td>2.899</td>
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</table>

**RDT&E Articles Quantity**

**FY03** This initiative was a congressional plus-up. Continued to develop technologies for SPIKE, and refine the guidance system for more accurate prosecution of hardened targets. Work continued to refine target tracking sub-system and warhead development.
**FY04** This initiative is a congressional plus-up. Continue development of FY03 efforts and work toward conducting live fire test.

**Sensors for Autonomous Navigation**

<table>
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<th>FY03</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.465</td>
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</tbody>
</table>

**RDT&E Articles Quantity**

**FY04** This initiative is a congressional plus-up. This program will demonstrate a sensor suite for autonomous vehicle navigation across difficult terrain, both day and night, and in a wide range of environmental conditions.

**Automated Assembly of Electro-Optic Sensors and Devices**

<table>
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<th>FY04</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.465</td>
<td>2.465</td>
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</table>

**RDT&E Articles Quantity**

**FY04** This initiative is a congressional plus-up. Improve design of components and assembly of electro-optic devices for robotic assemblies to reduce cost and enhance performance.
<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
<th>Exhibit R-2a, RDT&amp;E Project Justification</th>
<th>Date: FEBRUARY 2004</th>
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<tbody>
<tr>
<td>RDT&amp;E BA # 2</td>
<td>Special Operations Technology Development/Project S100</td>
<td></td>
</tr>
</tbody>
</table>

| Image Fusion Common Aperture Systems Development | FY03 | FY04 | FY05 |
| RDT&E Articles Quantity | 2.053 |      |      |

FY04 This initiative is a congressional plus-up. This development effort will be the first common aperture which allows a natural bore sight for the dual band systems (intensified and thermal).

| Knowledge Superiority | FY03 | FY04 | FY05 |
| RDT&E Articles Quantity | 1.612 |      |      |

FY03 This initiative was a congressional plus-up. Improved methods and tools used to increase operational efficiency and performance while providing access to tactical data.

| Large Format Uncooled Infrared Sensors | FY03 | FY04 | FY05 |
| RDT&E Articles Quantity | .949 |      |      |

FY03 This initiative was a congressional plus-up. Developed larger format arrays to enhance surveillance systems. Issues to be addressed include uniformity of very thin layers over a large area, deposition and processing of thin micro-support structures, and understanding fundamental issues associated with semi-crystalline and amorphous infrared materials.

| Imaging Auto Sensors For Autonomous Vehicles | FY03 | FY04 | FY05 |
| RDT&E Articles Quantity | 1.614 |      |      |

FY03 This initiative was a congressional plus-up. Developed and designed miniature sensor packages to incorporate parallel processing which significantly increases processing power that supports autonomous vehicles. This development explored low cost micro-sensors with a focused effort to incorporate unique microelectronics and opto-electronic processing.
<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
<th>Exhibit R-2a, RDT&amp;E Project Justification</th>
<th>Date: FEBRUARY 2004</th>
</tr>
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<tbody>
<tr>
<td>RDT&amp;E BA # 2</td>
<td>Special Operations Technology Development/Project S100</td>
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</table>

<table>
<thead>
<tr>
<th>Shortwave Infrared Imagers</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDT&amp;E Articles Quantity</td>
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<td></td>
<td>1.614</td>
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</tbody>
</table>

FY03  This initiative was a congressional plus-up. Developed large area Short Wave Infrared focal plane arrays and cameras for unattended sensors and navigation in difficult terrain. Expanded the camera’s capability by extension of the spectral response to full 1.0 to 2.0 micron spectral region and expansion of the array size to 480 x 640 and 960 x 1280 elements, providing a low cost, large area array for a wide range of systems.

<table>
<thead>
<tr>
<th>Night Vision Fusion &amp; Rapid Transmission</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
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<tbody>
<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
<td>2.469</td>
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</tbody>
</table>

FY03  This initiative was a congressional plus-up. Developed novel lens assemblies which are smaller and lighter and prototype night vision systems and assemblies for a variety of warfighter applications including reconnaissance, battlefield imaging, situational awareness, and night sights.

C. Other Program Funding Summary: None.

D. Acquisition Strategy: N/A.
A. Mission Description and Budget Item Justification:

This program element provides studies, non-system exploratory advanced technology development and evaluations. The focus is on medical technologies, centering on physiologic, psychologic, and ergonomic factors affecting the ability of Special Operations Forces (SOF) to perform their missions. Current equipment and technology does not meet force requirements. The unique nature of special operations requires unique approaches to combat casualty care, medical equipment and other life support capabilities including life support for high altitude parachuting, combat swimming and other SOF unique missions. This program provides guidelines for the development of selection and conditioning criteria, thermal protection, decompression procedures, combat casualty procedures and life support systems. The program supports the development and evaluation of biomedical enhancements for the unique requirements of all SOF in the conduct of their diverse missions.

B. Program Change Summary:

<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<td>Current President's Budget</td>
<td>3.317</td>
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<td>Total Adjustments</td>
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<td>Congressional Program Reductions</td>
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<td>Reprogrammings</td>
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<tr>
<td>SBIR Transfer</td>
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</table>

Note: In FY 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 2.
### Funding:

**FY04**
Reflects $3.400 million for Rebreather, a Congressionally added program.
- SBIR (-$.077M)
- Congressional Sectionals (-$.036M)

**FY05**
Decrease of $.005 million is based on current inflation factors.

**Schedule:** N/A.

**Technical:** N/A.
A. Mission Description and Budget Item Justification: This project provides studies, non-system exploratory advanced technology development and evaluations. The focus is on medical technologies, centering on physiologic, psychologic, and ergonomic factors affecting the ability of Special Operations Forces (SOF) to perform their missions. Current equipment and technology does not meet force requirements. The unique nature of special operations requires unique approaches to combat casualty care, medical equipment and other life support capabilities including life support for high altitude parachuting, combat swimming and other SOF unique missions. This project provides guidelines for the development of selection and conditioning criteria, thermal protection, decompression procedures, combat casualty procedures and life support systems. The project supports the development and evaluation of biomedical enhancements for the unique requirements of all SOF in the conduct of their diverse missions. This effort is defined by the following seven areas of investigation:

- Combat casualty management will: (1) review the emergency medical equipment currently used in the SOF community and compare it to currently available civilian technology, and provide field testing of emergency medical equipment in the adverse environmental conditions encountered by SOF; (2) evaluate current tactical combat casualty care doctrine to ensure consideration of the wide variety of tactical scenarios encountered and apply the latest concepts in casualty care to these circumstances; and (3) develop CD-ROM and internet compatible automated programs to support SOF medical personnel information needs while operating in austere locations and medical interviews in multiple foreign languages.

- Decompression procedures for SOF diving operations will: (1) decrease the decompression obligation in SOF diving operations through the use of surface-interval oxygen breathing; and (2) investigate pre-oxygenation requirements for high-altitude SOF parachute operations.

- Exercise-related injuries will evaluate the effectiveness of applying sports medicine diagnostic, therapeutic and rehabilitative techniques in management of the traumatic and overuse injuries commonly encountered among SOF.

- Inhaled gas toxicology will evaluate the feasibility of using pharmacologic intervention to reduce or eliminate the possibility of central nervous system toxicity.
Medical sustainment training techniques will: (1) examine novel ways of providing and documenting medical sustainment training for SOF corpsmen and physicians; and (2) develop a system for constantly upgrading the medical expertise of SOF medical personnel by incorporating new research reports and clinical information into a CD-ROM based computer system which can be used by medical personnel in isolated duty circumstances.

Thermal protection will evaluate the efficacy of current thermal protective measures in maintaining combat swimmer performance.

Mission-related physiology will: (1) develop accurate measures to evaluate SOF mission-related performance; (2) delineate nutritional strategies designed to help personnel apply known nutritional concepts to optimize performance in mission and training scenarios; (3) evaluate potential ergogenic agents as they apply to enhancing mission-related performance; (4) study the safety and efficacy of various substances to increase performance in sustained operations; (5) develop a quantitative test for night vision suitable for screening SOF candidates and study ways to enhance unaided night vision; and (6) study pharmacologic measures to prevent acute mountain sickness in high altitude SOF operations.

<table>
<thead>
<tr>
<th>B. Accomplishments/Planned Program</th>
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</table>

<table>
<thead>
<tr>
<th>RDT&amp;E Articles Quantity</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<tr>
<td>Ongoing Studies</td>
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<td>.798</td>
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<table>
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<tr>
<th>New Studies</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<tbody>
<tr>
<td>FY03 Initiated new studies as follows:</td>
<td></td>
<td></td>
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<tr>
<td>Evaluation of HydroTech Aqua Heat System during</td>
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<tr>
<td>SDV Operations, Medical Support of High Speed</td>
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<td>Boat Shock Mitigation, Development of Algorithms</td>
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<tr>
<td>for Remote Triage, Stress Fractures in BUD/S</td>
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<tr>
<td>Training, Computer-Assisted Thermal Protection</td>
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<tr>
<td>Training in SOF, Full Face Purging Procedures for</td>
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<tr>
<td>the MK25 UBA, Effects of Low Grade Hypoxia at</td>
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<tr>
<td>Night in SOF Aircraft Operations, Evaluation of</td>
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<tr>
<td>Nasal Ketamine for Pain Control, and Effects of</td>
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<td>Post-Stress Carbohydrate Administration on</td>
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<td>Recovery.</td>
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<td>Completed new studies as follows: Full Face</td>
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<tr>
<td>Purging Procedures for the MK25 UBA.</td>
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<td>FY04 Initiate new studies as follows: Hypoxic</td>
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<td>Exposures to Improve Performance at Altitude,</td>
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<td>Comparison of Wavefront-Guided Photo-Refractive</td>
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<td>Keratomileusis (LASEK), SOF Performance</td>
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<td>Enhancing Drug Protocols, Cold Sterilization,</td>
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<td>Tympanic Membrane Injuries, and Combat Casualty</td>
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<td>Care Research After-Action Review.</td>
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<td>FY05 Initiate new studies as follows: Combat</td>
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<tr>
<td>Casualty Care Pain Management Protocols, Efficacy</td>
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<td>of Dehydro-Epi-Androsterone (DHEA) Administration</td>
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<td>to Protect Soldiers against Stress-Induced</td>
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<tr>
<td>Deficits in Memory and Cognition, Protocols and</td>
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<tr>
<td>Techniques for New Equipment and Technologies</td>
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<td>within SOF, Hypobaric Medicine, Performance</td>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
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<tr>
<td>FY03 This initiative was a Congressional Plus-Up. Continued development of a closed circuit UBA control unit, and novel oxygen and carbon dioxide sensors based on new technologies.</td>
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<tr>
<td>FY04 This initiative is a Congressional Plus-Up. Continues development of underlying technologies that will support the Advanced Technology underwater breathing apparatus project.</td>
<td></td>
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<tr>
<td>SO Medical Diagnostic System</td>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
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<tr>
<td>FY03 This initiative was a Congressional Plus-Up. Initiated a program of Knowledge Based Rules to assist in providing SOF medics with an automated diagnostic decision tree. Complete integration of diagnostics included Gastrointestinal, Respiratory, Dermatology and Musculoskeletal/Sports Medicine algorithms, and incorporation into a hand-held device.</td>
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</table>

C. Other Program Funding Summary. None.

D. Acquisition Strategy. N/A.
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:

<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
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</table>

**Note:** In FY 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 3.
Funding:

FY03
- Reprogrammed additional funds into the Gunship Advanced Concept Technology Demonstration (ACTD).

FY04
- Reflects $42.925 million for Congressionally added programs as follows:
  - Rotary Wing Unmanned Aerial Vehicle ($15.300)
  - Affordable Access to Night Vision ($1.700)
  - Dual Band Universal Night Sight ($1.700)
  - Light Reconnaissance Vehicle ($2.400)
  - SOF Unmanned Vehicle Technology Integration ($2.800)
  - Special All Terrain Vehicle ($2.125)
  - Advanced Target ID for AC-130U Gunships ($3.850)
  - Dominant Vision ($4.800)
  - Naval Special Warfare Craft ($3.000)
  - Synthetic Aperture Radar (Millimeter FLIR) ($4.250)
  - SOCOM Multipurpose Antenna, X-Band (SMAX) ($1.000)
- Reprogrammings to Advanced Seal Delivery System (-$1.000) and into the Gunship ACTD ($0.055) resulted in a net decrease of $.945.

FY05
Decrease of $.122 million is based on current inflation factors.

Schedule: None.

Technical: None.
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 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” Advanced Concept Technology Demonstration (ACTD). Design, fabricate and demonstrate military utility of space based and advanced global reach broadcasts.

• 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).
Additionally, the project executes the following efforts added by Congress:

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

- **Robot Reconnaissance & Surveillance.** Evaluate emerging ground robotic platforms and payloads for special operations utility.

- **Foreign Language Translator.** Develop, demonstrate, and evaluate advanced hand-held voice-response translation device with on-board high-speed processing and speech algorithms.

- **Adaptive Deployable Sensor Suite.** Fabricate and evaluate network-based sensors and sensor architectures.

- **Affordable Access to Night Vision Equipment.** 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 a prototype manned vehicle for internal transport in the CV-22.

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

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

- **Advanced Target Identification.** Explore vibro electronic 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 Craft. Explore technologies to support future combatant craft development.

Synthetic Aperture Radar Millimeter 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.

B. Accomplishments/Planned Program

<table>
<thead>
<tr>
<th>SOF Command, Control, Communications, Computers, and Intelligence (C4I) ATDs</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<tbody>
<tr>
<td>RDT&amp;E Article Quantity</td>
<td>2.192</td>
<td>1.789</td>
<td>2.450</td>
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</tbody>
</table>


FY04 Continue the development and evaluation of FY03 efforts. Initiate Night Vision Compatible Head Mounted Display, Enhanced Tactical Antenna Suite, Reconnaissance Technologies, and Software Definable Receiver Size Reduction.

FY05 Continue development and evaluation of FY04 efforts. Continue to exploit emerging technologies to conduct Advanced Technology Demonstrations (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.
## FY03 FY04 FY05
### SOF Mobility ATDs
| RDT&E Article Quantity | 1.180 | 2.260 | 3.121 |

**FY03** Continued SDV Airdrop and SOF Robotics. Initiated Conformal Load Bearing Antenna. Completed Vehicle Camouflage system.

**FY04** Continue development and evaluation of FY03 efforts.

**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.

<table>
<thead>
<tr>
<th>SOF Weapon ATDs</th>
<th>FY03</th>
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<th>FY05</th>
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<tr>
<td>RDT&amp;E Article Quantity</td>
<td>.938</td>
<td>2.225</td>
<td>3.169</td>
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</tbody>
</table>

**FY03** Continued development and evaluation of FY02 efforts. Continued development of Anti-Materiel Payload Rifle, Underwater Adhesives, and Remote Operated Small Arms Mount.

**FY04** Continue development and evaluation of FY03 efforts. Initiate the NSW Combatant Craft Weapons, Enhanced Small Arms Technologies, and SOF Combat Weapon Shot Counter.

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

<table>
<thead>
<tr>
<th>SOF Sustainment ATDs</th>
<th>FY03</th>
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<td>RDT&amp;E Article Quantity</td>
<td>.757</td>
<td>2.000</td>
<td>1.468</td>
</tr>
</tbody>
</table>

**FY03** Continued development and evaluation of FY02 efforts. Continued Intrusion Sensor System, Military Free Fall Advanced Navigation System and Battery Recharging System. Completed Equipment Waterproofing.

**FY04** Continue development and evaluation of FY03 efforts. Initiate development of Directional Axial Magnetic Propulsion System.

**FY05** Continue development and evaluation of FY04 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. Planned efforts include the All Terrain and All Environment Kit to Negotiate Obstacles.

<table>
<thead>
<tr>
<th>Technology Exploitation Initiative (TEI)</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDT&amp;E Article Quantity</td>
<td>.639</td>
<td>.600</td>
<td>.850</td>
</tr>
</tbody>
</table>

FY03 Exploited emerging technologies to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. Initiated Directional Axial Magnetic Propulsion System. Completed SOF Visualization to develop and demonstrate C3 software tools, NSW Combatant Craft Weapon exploitation initiative, and Polymer Ammunition.

FY04 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.

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.

<table>
<thead>
<tr>
<th>Advanced Tactical Laser (ATL) Advanced Concepts Technology Demonstration (ACTD)</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDT&amp;E Article Quantity</td>
<td>46.924</td>
<td>51.507</td>
<td>28.649</td>
</tr>
</tbody>
</table>

FY03 Continued the development of the ATL ACTD system. Completed the Systems Engineering Management Plan and Integrated Technical and Management Plan. The System Baseline Review established the technical baseline for the ATL system, allowing us to allocate performance requirements and system integration constraints to the various ATL ACTD system components. Began design of the system hardware for the Laser device (e.g., fluid supply system, resonator cavity and optics, and energy flow path elements), surveillance and beam control (e.g., acquisition system, laser beam turret, beam control mirrors and sensors and software), and the hardware/software for the operator workstation. Conducted system/subsystem design experiments in the laser, optical control, aircraft integration and battle management control system. In the fourth quarter, completed most subsystem Preliminary Design Reviews (PDR) of the ATL hardware and software. The PDR is an intermediate review to verify that the subsystem components and requirements allocations will allow the ATL system to continue to meet program objectives. Extensive work was accomplished to analyze and assess the ATL system lethality vs. the design reference mission targets.

FY04 Complete the design and begin the build-up of the ATL ACTD system. Continue system/subsystem design experimentation and analysis. Accomplish the subsystem and system Critical Design Reviews, the final reviews of the system component designs before assembly.
and check out. Procure long-lead components and begin acquisition and delivery of ATL ACTD system hardware and software. Begin 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.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY04 Actd</td>
<td>2.850</td>
<td>2.935</td>
<td></td>
</tr>
</tbody>
</table>

**Psychological Operations (PSYOP) “Global Reach” ACTD**

**FY04** Exploit 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 will transform current PSYOP capabilities in two major areas: 1) extension of PSYOP broadcast range (AM/FM/TV/digital) in a standoff mode to reach target audiences deep in hostile territory or denied areas, and 2) automation (software & hardware) of the PSYOP planning and analysis process. Specifically, the ACTD will manage the design, engineering and technical integration of multiple technologies for both UAV payload and a PSYOP Planning and Analysis Tool.  

**FY05** Continue management of the design, engineering and technical integration of multiple technologies culminating with a military utility assessment for both a UAV payload and a PSYOP Planning and Analysis Tool. In addition, focus on additional technologies to reach target audience through various scatterable media. Multiple solutions may include hardened and air-droppable satellite radios, miniaturized AM/FM broadcast transmitters, miniaturized loudspeakers, and media such as Internet broadcast and cellular telephones.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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</thead>
<tbody>
<tr>
<td>PSYOP Modernization</td>
<td>4.891</td>
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</table>

**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.
**Exhibit R-2a, RDT&E Project Justification**

**Appropriation/Budget Activity**

| RDT&E BA # 3 | Special Operations Special Technology Project S200 |

<table>
<thead>
<tr>
<th>FY03</th>
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**RDT&E Article Quantity**

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<th>FY03</th>
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</thead>
<tbody>
<tr>
<td>Rotary Wing Unmanned Aerial Vehicle (UAV)</td>
<td>20.985</td>
<td>14.788</td>
</tr>
</tbody>
</table>

FY03 This initiative was a Congressional Plus-Up. Fabricated four additional air vehicles (two Maverick and two Hummingbird) payloads and Miniature Ground Control Stations. Conducted maturation flight tests and participated in Joint Exercises.

FY04 Continue to identify and develop SOF-unique capabilities on the baseline aircraft developing CONOPS and payloads that address critical needs of the SOF warfighter.

<table>
<thead>
<tr>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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</thead>
<tbody>
<tr>
<td>Robot Reconnaissance &amp; Surveillance</td>
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<table>
<thead>
<tr>
<th>FY03</th>
<th>FY04</th>
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</thead>
<tbody>
<tr>
<td>Foreign Language Translator</td>
<td>.950</td>
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</table>

FY03 This initiative was a Congressional Plus-Up. Evaluated emerging ground robotic platforms and payloads for special operations utility.

FY03 This initiative was a Congressional Plus-Up. Developed, demonstrated, and evaluated advanced hand-held voice-response translation device with on-board high-speed processing and speech algorithms.
<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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</thead>
<tbody>
<tr>
<td>Adaptive Deployable Sensor Suite</td>
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<tr>
<td>RDT&amp;E Article Quantity</td>
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<tr>
<td>FY03 This initiative was a Congressional Plus-Up. Fabricated and evaluated network-based sensors and sensor architectures.</td>
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<table>
<thead>
<tr>
<th>Dominant Vision</th>
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<td>RDT&amp;E Article Quantity</td>
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<tr>
<td>FY04 This initiative was a Congressional Plus-up. Development effort will explore Advanced Situational Awareness and Sensor Fusion Technologies for enhancement of AFSOC 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.</td>
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<table>
<thead>
<tr>
<th>Affordable Access to Night Vision (NV) Equipment</th>
<th>FY03</th>
<th>FY04</th>
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<tr>
<td>RDT&amp;E Article Quantity</td>
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<td></td>
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<tr>
<td>FY04 This initiate was a Congressional Plus-up. Support a pilot project that will provide calibration, standardization, and characterization of NV capabilities for the SOF community.</td>
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<table>
<thead>
<tr>
<th>Advanced Target ID for AC-130U Gunship</th>
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<th>FY05</th>
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<tr>
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<tr>
<td>FY04 This initiative was a Congressional Plus-up. Development effort will 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 capabilities. Enhancements to the Gunships’ ability to align the weapons at night and over water are also being evaluated.</td>
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UNCLASSIFIED
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<th>Item Description</th>
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<tr>
<td>Dual Band Universal Night Sight (DUNS)</td>
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<tr>
<td>Synthetic Aperture Radar (Millimeter FLIR)</td>
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<td>Light Reconnaissance Vehicle</td>
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<td>2.319</td>
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<tr>
<td>SOCOM Multipurpose Antenna, X-Band (SMAX)</td>
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<td>.969</td>
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</tbody>
</table>

**Exhibit R-2a, RDT&E Project Justification**

**Appropriation/Budget Activity**

RDT&E   BA # 3

**Special Operations Special Technology Project S200**

**Appropriation/Budget Activity**

RDT&E   BA # 3

**Special Operations Special Technology Project S200**

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

**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 will demonstrate and integrate package on a light twin civil aircraft suitable for use on a C-130 or rotary wing platform.

**FY04** This initiative was a Congressional Plus-up. Development of a lightweight, manned vehicle for SOF.

**FY04** This initiative was a Congressional Plus-up. The SMAX is an innovative antenna derived from the Navy’s Cooperative Engagement Capability design. It is 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.
<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<tr>
<td>RDT&amp;E BA # 3</td>
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<tr>
<td>Special Operations Special Technology Project S200</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>FY04</th>
<th>This initiative was a Congressional Plus-up. Support unmanned vehicle development and integration efforts at the Prototype Maintenance Facility supporting Special Operations Technology Development and Special Operations Advanced Technology Development projects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY03</td>
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<tr>
<td>SOF Unmanned Vehicle Technology Integration</td>
<td>2.707</td>
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</table>

<table>
<thead>
<tr>
<th>FY04</th>
<th>This initiative was a Congressional Plus-up. Technology development effort will obtain and modify commercial personal mobility vehicles to produce diesel fueled militarized prototypes for initial evaluation by SOCOM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY03</td>
<td>FY04</td>
</tr>
<tr>
<td>Special All Terrain Vehicle</td>
<td>2.053</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>FY04</th>
<th>This initiative was a Congressional Plus-up. Explore technologies to support future combatant craft development.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY03</td>
<td>FY04</td>
</tr>
<tr>
<td>Naval Special Warfare Craft</td>
<td>2.899</td>
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</table>

C. Other Program Funding Summary: None.

D. Acquisition Strategy. N/A.
A. Mission Description and Budget Item Justification: The Special Applications for Contingencies (SAFC) Program develops and deploys special capabilities to perform intelligence surveillance and reconnaissance (ISR) for deployed Special Operations Forces (SOF) using non-traditional means. It provides a mechanism for SOF user combat evaluation of emerging technologies capable of detecting and locating fleeting targets. SAFC applies focused R&D for relatively low cost solutions to provide remotely controlled system emplacement and data exfiltration from denied areas. This program also specifically addresses short lead-time contingency planning requirements where focused R&D will allow for test and evaluation of leading edge solutions to an emergent problem set based on requirements validated through a specific Joint Staff/OSD chartered approval process.

B. Program Change Summary:

<table>
<thead>
<tr>
<th>Item</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
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<th>Congression Program Reductions</th>
<th>Congressional Recissions</th>
<th>Congressional Increases</th>
<th>Reprogrammings</th>
<th>SBIR Transfer</th>
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<tr>
<td>Previous President's</td>
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<td>Congressional Recissions</td>
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<tr>
<td>Reprogrammings</td>
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</tbody>
</table>
Funding:

FY03
- Funds were reprogrammed to support higher command priorities.

FY04
- Funds were reduced for congressional pro rata reductions in the FY 2004 Appropriations Conference Report and for program share of Small Business Innovative Research calculation.

FY05
- Funds were transferred to support the Defense Human Intelligence Program (-$3.7M). Funds were also adjusted based on current inflation factors (-$.053M).

Schedule: None.

Technical: None.
A. Mission Description and Budget Item Justification: The Special Applications for Contingencies (SAFC) Program develops and deploys special capabilities to perform intelligence surveillance and reconnaissance (ISR) for deployed Special Operations Forces (SOF) using non-traditional means. It provides a mechanism for SOF user combat evaluation of emerging technologies capable of detecting and locating fleeting targets. SAFC applies focused R&D for relatively low cost solutions to provide remotely controlled system emplacement and data exfiltration from denied areas. This program also specifically addresses short lead-time contingency planning requirements where focused R&D will allow for test and evaluation of leading edge solutions to an emergent problem set based on requirements validated through a specific Joint Staff/OSD chartered approval process.

B. Accomplishments/Planned Program

<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFC</td>
<td>22.782</td>
<td>23.764</td>
<td>20.758</td>
</tr>
<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FY03</td>
<td>Developed, deployed and evaluated selected unmanned delivery platforms and mounted or deliverable ISR sensor systems. Developed, deployed and evaluated advanced auto-pilot technologies. Performed research on advanced mobile secure networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Developed and evaluated a common ground station. Researched and assessed emerging ISR technologies. Researched, evaluated and integrated red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement. Conducted Federally Funded Research and Development in support of a Joint Staff approved requirement for data mining.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY04</td>
<td>Continue development and combat evaluation of selected unmanned delivery platforms and mounted or deliverable ISR sensor systems. Continue to develop, deploy and evaluate advanced auto-pilot technologies. Continue research and development of advanced mobile secure networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Continue to enhance and evaluate a common ground station. Continue research and assessment of emerging ISR technologies. Continue to research, evaluate and integrate red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement.</td>
<td></td>
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</tr>
<tr>
<td>FY05</td>
<td>Continue development and combat evaluation of selected unmanned delivery platforms and mounted or deliverable ISR sensor systems. Continue to develop, deploy and evaluate advanced auto-pilot technologies. Continue research and development of advanced mobile secure networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Continue to enhance and evaluate a common ground station. Continue research and assessment of emerging ISR technologies. Continue to research, evaluate and integrate red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement.</td>
<td></td>
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</tbody>
</table>
networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Continue to enhance and evaluate a common ground station. Continue research and assessment of emerging ISR technologies. Continue to research, evaluate and integrate red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement.

C. Other Program Funding Summary:

<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
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<tr>
<td>SAFC</td>
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<td>16.184</td>
<td>16.144</td>
<td>16.152</td>
<td>18.447</td>
<td>18.849</td>
<td>N/A</td>
<td>N/A</td>
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</table>

D. Acquisition Strategy:

SAFC acquisition strategy is evolutionary and spiral-based for technology insertion and low volume procurement. As a non-standard DOD acquisition program, it allows for maximum flexibility to respond to quickly emerging, short lead time, contingency based requirements that have been approved through an Executive Integrated Product Team chaired by the Joint Staff at national level.
### Exhibit R-3  COST ANALYSIS

**APPROPRIATION / BUDGET ACTIVITY**
RDT&E DEFENSE-WIDE / 7

**SPECIAL APPLICATIONS FOR CONTINGENCIES PE0304210BB/C3I**

<table>
<thead>
<tr>
<th>Cost Categories</th>
<th>Contract Method &amp; Type</th>
<th>Performing Activity &amp; Location</th>
<th>FYs Cost</th>
<th>Budget Award FY04</th>
<th>Date FY04</th>
<th>Cost Award FY05</th>
<th>Date FY05</th>
<th>To Complete</th>
<th>Total Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFRDC Support to SOJCC</td>
<td>MIPR MITRE CECOM</td>
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<td>1.001</td>
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</tr>
<tr>
<td>FFRDC Support to SOJCC</td>
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**Remarks:**

**Actual or Budget Value ($ in millions)**

**UNCLASSIFIED**
### Exhibit R-4, Schedule Profile

**Date:** FEBRUARY 2004

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Date: FEBRUARY 2004
A. Mission Description and Budget Item Justification:

The Small Business Innovative Research (SBIR) program element consists of a highly competitive three-phase award system which provides qualified small business concerns with the opportunity to propose high quality innovative ideas that meet specific research and development needs of USSOCOM. SBIR is a result of the Small Business Development Act of 1992. It was enacted by Congress in Public Law 97-219, reenacted by Public Law 99-443, and reauthorized by the SBIR Program Reauthorization Act of 2001. Starting in FY 1994, the SBIR program was refocused toward dual use and defense reinvestment efforts. Phase I projects evaluate the scientific technical merit and feasibility of an idea. Awards are up to $1.00M with a maximum six-month period of performance. Phase II projects expand the results of, and further pursue, the developments of Phase I. Awards are up to $750M with a maximum two-year period of performance. Phase III is for commercialization of the results of Phase II and requires the use of private or non-SBIR federal funding. DOD publishes government agency proposal projects twice per year for a consolidated DOD Request for Proposal. USSOCOM then awards its proposed SBIR projects.

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<th>COST (Dollars in Millions)</th>
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<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
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<td>Congressional Rescissions</td>
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**Funding:**

- **FY03**
  - Funding was adjusted to correct errors in the original SBIR calculation.

**Schedule:** None.

**Technical:** None.
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A. Mission Description and Budget Item Justification:

This program element provides for development, testing, and integration of specialized equipment to meet the unique requirements of Special Operations Forces (SOF). Specialized equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. These operations are generally conducted in harsh environments, for unspecified periods and in locations requiring small unit autonomy. SOF must infiltrate by land, sea, and air to conduct unconventional warfare, direct action, or deep reconnaissance operations in denied areas against insurgent units, terrorists, or highly sophisticated threat forces. The requirement to operate in denied areas controlled by a sophisticated threat mandates that SOF systems remain technologically superior to threat forces to ensure mission success.

B. Program Change Summary:

<table>
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<tr>
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<th>FY2003</th>
<th>FY2004</th>
<th>FY2005</th>
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### Funding:

**FY03**  
- Congress rescinded $25 million from this program element in the FY 2004 Appropriations Conference Report.  
- Reprogrammings to higher command priorities to support the War on Terrorism and from the Air Force and Navy to reflect proper execution of Congressional adds resulted in a net decrease of $7.478M.

**FY04**  
Reflects $19.700 million for Congressionally added programs as follows:  
- Project SF100 – Digital Auto Flight Control System ($4.200).  
- Project S1684 – MKV Computer Upgrades ($1.000).  
- Project S375 – Gunshot Detection System ($2.500).  
  - Lightweight Counter-Mortar Radar ($1.000).  
- Project S625 – ST Air-Ground Interface Simulator ($4.200).  
- Project S700 – Material Improvement & Corrosion Control ($2.550)  
  - Multi-Band Multi-Mode Radar ($4.250)

Also reflects a transfer from the Navy for Project SF200.PR (CV-22) ($34.000).

Congressional Reductions: Sections 8094 and 8126 (-$6.279)

**FY05**  
- Project 3284: The Low Band Jammer, the Towed Decoy, and the DIRCM Multi-Spectral Missile Warning System modification efforts were restructured to reflect the most recent cost estimates (+$15.8 million, +$16.0 million, and +$6.0 million, respectively).  
- Project D615: The MH-60 Service Life Extension Program (SLEP) was increased by $3 million to reflect the latest schedule, and the MH-47/MH-60 Vertical Lift Terrain Following/Terrain Avoidance modification was decreased by $11.1 million to support higher command requirements.
- Project S350: The SOFPARS program was increased to begin the development of the Theater Special Operations Commands’ command and control nodes, as well as to begin the development and modification of automated tools to meet ground mission planning requirements (+$3.6 million).
- Project S375: Funds were added to develop a laser targeting device capable of providing the geo-location of a target to support the delivery of global positioning system guided munitions (+$3.0 million).
- Project SF100: Various C-130 modification efforts were decreased to support higher command priorities (-$3.7 million), and the CAAP program was decreased to reflect an FY 2003 acceleration (-$6.6 million).
- Project SF200: The CV-22 RDT&E effort was restructured beginning in FY 2003 to better reflect execution of the Block 10 development and integration effort (+$33.7 million).

Schedule:
- Project 3284: Low Band Jammer and Towed Decoy: These programs are tied together to make the program executable. The program rebaselined aircraft from AC-130H to MC130E to use the E model first because of ease of installation. The H model already has a low band jammer. The milestone C (production) and IOC decision were both moved forward one year.
- Project SF100: CAAP buys back one year of a two year AMP schedule slip due to AMP restructure and adds RDT&E funds to the AMP/CAAP program to minimize the 24+ month schedule slip.

Technical:
- Project SF100: DIRCM Laser: An inherent design defect was discovered and deemed not cost effective. Cost and schedule impact was considered impractical. Therefore, the effort was cancelled and the lasers will not be put on the large lamp based system of SOF C-130 DIRCM.
- Project 3326: AC-130U+4: In order to complete production costs (spares, trainers, etc) of the new 30mm gun, development of enhanced survivability systems was delayed. Enhanced survivability schedules were incompatible with the Plus 4 production schedule.
A. Mission Description and Budget Item Justification: In an effort to mitigate Low Density/High Demand assets, the Department provided funding, starting in FY05, to increase USSOCOM’s MC-130H inventory by ten aircraft. This program modifies 10 C-130H2 aircraft to an MC-130H Combat Talon II configuration. These aircraft provide low level infiltration, exfiltration, and resupply of special operations forces and equipment in hostile/denied territories. Aircraft will also refuel SOF helicopters.

B. Accomplishments/Planned Program

FY05 Begin development of Electro-Optical/Infrared command sensor and nonrecurring engineering for the 10 C-130H2 aircraft being modified to MC-130H Combat Talon II.

C. Other Program Funding Summary:

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<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>To Complete</th>
<th>Total Cost</th>
</tr>
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</table>

D. Acquisition Strategy. Program procures Talon II systems and installs these in conjunction with the C-130 Avionics Modernization/Common Avionics Architecture for Penetration (AMP/CAAP) modifications (program will not procure systems replaced by AMP/CAAP). Objective is to open the aircraft once to install the MC-130H Talon II plus ten and AMP/CAAP systems.
A. Mission Description and Budget Item Justification: In an effort to mitigate Low Density/High Demand assets, the Department provided funding, starting in FY05, to increase USSOCOM’s MC-130H inventory by ten aircraft. This program modifies 10 C-130H2 aircraft to an MC-130H Combat Talon II configuration. These aircraft provide low level infiltration, exfiltration, and resupply of special operations forces and equipment in hostile/denied territories. Aircraft will also refuel SOF helicopters.

B. Accomplishments/Planned Program

C. Other Program Funding Summary:

D. Acquisition Strategy. Program procures Talon II systems and installs these in conjunction with the C-130 Avionics Modernization/Common Avionics Architecture for Penetration (AMP/CAAP) modifications (program will not procure systems replaced by AMP/CAAP). Objective is to open the aircraft once to install the MC-130H Talon II plus ten and AMP/CAAP systems.
### Exhibit R-3  COST ANALYSIS

**DATE:** FEBRUARY 2004

**APPROPRIATION / BUDGET ACTIVITY**
- RDT&E DEFENSE-WIDE / 7
  - Special Operations Tactical Systems Development/PE1160404BB
  - MC-130H Combat Talon II /3129

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**Actual or Budget Value ($ in millions)**

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- Total Program: 23.920
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Date: FEBRUARY 2004
A. Mission Description and Budget Item Justification: This project provides definition, development, prototyping and testing of aircraft defensive avionics systems. Project identifies hardware and software enhancements for each Special Operations Forces (SOF) aircraft that will reduce detection, vulnerability, and threat engagement from threat radars and Infrared (IR) missiles, thereby increasing the overall survivability of SOF assets. This project identifies and develops enhancements to each platform to meet the projected threat. Recommendations for equipment modification or replacement will be developed by each system program manager based upon the results of ongoing engineering assessments and user operational requirements. This project funds dispenser upgrade and improvement programs, threat and missile warning receiver enhancements, radio frequency jammer improvements, and enhanced IR jamming systems. Project also provides systems for SOF-unique portions of the Warner Robins-Air Logistics Center Electronic Warfare Avionics Integrated Systems Facility. Sub-projects include:

- Directional Infrared Countermeasures (DIRCM). The baseline program is a joint international cooperative United Kingdom/United States project to develop and procure an IR jammer for MC-130E/H and AC-130H/U aircraft capable of countering missile threats in the band one, two and four IR frequency spectrum.

- Next Generation Missile Warning System (NexGen MWS). Increment 3 in the spiral development of the AAQ-24 DIRCM System. Cooperative development program with Air Force to significantly extend DIRCM threat engagement range. Funds support two contracts through completion of System Design and Development (SDD) phase.

- Electronic Warfare Avionics Integrated Systems Facility (EWAISF). The EWAISF directly supports software development and testing. The EWAISF effort is a type of systems integration laboratory designed to support the incorporation of SOF aircraft defensive systems modifications into specific SOF platforms.

- High Power Fiber Optic Towed Decoys (HPFOTD) for AC-130 H/U Gunships and MC-130 E/H Talon aircraft. Program funds the testing of the HPFOTD ALE-55 that uses the ALQ-172 as a techniques generator. The HPFOTD will be installed on all AFSOC AC-130 H/U and MC-130 E/H aircraft to provide protection against monopulse and other radar guided, surface to air, and air to air missile systems.
• Low Band Jammer (LBJ). Program funds the development of the ALQ-196 LBJ modification. The LBJ will improve the capability of the ALQ-172 radio frequency jammer by adding low band jamming coverage for 13 AC-130U Gunships and 22 MC-130H Combat Talon II aircraft.

B. Accomplishments/Planned Program

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<tr>
<th>Cost ($ in million)</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<tr>
<td>DIRCM</td>
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<td>DIRCM NexGen MWS</td>
<td>14.596</td>
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<tr>
<td>DT&amp;E Articles Quantity</td>
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FY03 Continued to support a cooperative UK/US development/production program for 57 SOF C-130 aircraft and contractor engineering support and nonrecurring engineering costs. Funded development and nonrecurring engineering costs for a laser upgrade to the existing lamp system.

FY04 Continue to support a cooperative UK/US development/production program for 57 SOF C-130 aircraft and contractor engineering support fund nonrecurring engineering costs. Initiate development of an NexGen MWS as P3I for DIRCM. Exploit Tier II missiles for jam code development.

FY05 Continue to support a cooperative UK/US development/production program for 57 SOF C-130 aircraft and contractor engineering support and nonrecurring engineering costs. Continue development of an NexGen MWS as P3I for DIRCM. Exploit Tier II missiles for jam code development.

<table>
<thead>
<tr>
<th>Cost ($ in million)</th>
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<th>FY05</th>
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<td>EWAISF</td>
<td>1.397</td>
<td>1.614</td>
<td>1.880</td>
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<td>RDT&amp;E Articles Quantity</td>
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FY03 Continued to support laboratory efforts to maintain SOF aircraft defensive systems.
FY04 Continue to support laboratory efforts to maintain SOF aircraft defensive systems.
FY05 Continue to support laboratory efforts to maintain SOF aircraft defensive systems.
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<thead>
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<th>Cost ($ in million)</th>
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<td>HPFOTD</td>
<td>32.671</td>
<td>22.922</td>
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RDT&E Articles Quantity

FY03  Continued nonrecurring engineering, and initiated development and testing of aircraft integration efforts.
FY04  Continue nonrecurring engineering and development, and complete test of aircraft integration efforts.
FY05  Continue nonrecurring engineering and development, and begin developmental test/operational test and evaluation efforts for MC-130E aircraft.

<table>
<thead>
<tr>
<th>Cost ($ in million)</th>
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<th>FY05</th>
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<tr>
<td>LBJ</td>
<td>11.900</td>
<td>12.100</td>
<td>15.752</td>
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RDT&E Articles Quantity

FY03  Began development and nonrecurring engineering for the LBJ modification for AC-130U and MC-130H aircraft. Funds provided for trial installation on one aircraft from each fleet.
FY04  Continue nonrecurring engineering and development for aircraft integration efforts.
FY05  Continue nonrecurring engineering and initiate testing for aircraft integration for AC-130U aircraft.

C. Other Program Funding Summary:

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D. Acquisition Strategy:

- **DIRCM.** The memorandum of agreement between the United Kingdom (UK)/United States (US) established the cooperative international baseline DIRCM program. The UK Ministry of Defense is the lead for the program. UK law applies to all baseline acquisition actions. US Special Operations Command program manager is the US Deputy to the UK DIRCM program manager.

- **NexGenMWS.** Competitively award a contract to two contractors for the SDD phase of the program. A separate contract will be
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<th>Exhibit R-2a, RDT&amp;E Project Justification</th>
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<tr>
<td>RDT&amp;E BA # 7</td>
<td>SOF Aircraft Defensive System/Project 3284</td>
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- EWAISF. Award sole source contracts to the manufacturer of the prime mission equipment required for hardware and software integration into the EWAISF. Capability improvements are on-going system changes.

- LBJ. Program will complete modification of two remaining aircraft series (AC-130U and MC-130H) with LBJ capability. Program will capitalize on previous SOF aircraft modifications using the ALQ-196 system currently installed on MC-130E aircraft. The ALE-55 system was selected as the best value decision on all MC-130/AC-130 aircraft. Program management will be provided through an Air Force System Program Office and a pre-competed contract will be used for integration, production, and installation.

- HPFOTD. Performed a market survey of the existing Towed Decoy currently available in the US market place. Conducted an assessment to determine which non-developmental item meets operational requirements. The ALE-55 system was selected as the best value decision.
## Exhibit R-3  COST ANALYSIS

### APPROPRIATION / BUDGET ACTIVITY
**RDT&E DEFENSE-WIDE / 7**

**Special Operations Tactical Systems Development/PE1160404BB**

**Special Operations Forces Aircraft Defensive System/3284**

**DATE:** FEBRUARY 2004

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<td>Low Band Jammer</td>
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**Remarks:**

- Development Spt
  - Subtotal Spt
    - Remarks:
  - Developmental Test & Eval
    - Subtotal T&E
      - Remarks:

**Contractor Engineering Spt**

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**Remarks:**

- Total Cost
  - 220.702
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  - 58.041
  - Cont. Cont.
## Exhibit R-4, Schedule Profile

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**DIRCM**

**Production Installs**

**Missile Warning System Development**

**EWAISF Facility SDD**

**HPFOTD/LBJ**

**HPFOTD Dev**

**MC-130E**

**AC-130U**

**MC-130H**

**AC-130H**

**HPFOTD Prod**

**MC-130E**

**AC-130U**

**MC-130H**
Exhibit R-4, Schedule Profile

Date: FEBRUARY 2004

Appropriation/Budget Activity
RDT&E/7

Program Element Number and Name
PE1160404BB/Special Operations Tactical System Development

Project Number and Name
Project 3284/SOF Aircraft Defensive Systems

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<td>MC-130H</td>
<td>1-4Q</td>
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#### HPFOTD Production

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<td>MC-130E</td>
<td>4Q</td>
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<td>MC-130H</td>
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<td>AC-130H</td>
<td>4Q</td>
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#### LBJ Production

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<tr>
<td>MC-130E</td>
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<td>AC-130U</td>
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<td>MC-130H</td>
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### Exhibit R-2a, RDT&E Project Justification

**Appropriation/Budget Activity**

<table>
<thead>
<tr>
<th>AC-130U Gunship/Project 3326</th>
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<td>RDT&amp;E BA # 7</td>
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<table>
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<tr>
<th>Cost ($ in millions)</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
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<tbody>
<tr>
<td>AC-130U Gunship</td>
<td>36.292</td>
<td>1.186</td>
<td>1.288</td>
<td>2.534</td>
<td>2.580</td>
<td>2.684</td>
<td>2.767</td>
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</table>

**RDT&E Articles Quantity**

#### A. Mission Description and Budget Item Justification:

This project provides development of aircraft subsystems including precision navigation, target acquisition and strike radar, fire control computers integrated on redundant MIL-STD-1553B data buses, electronic countermeasures, infrared countermeasures, aerial refueling, covert lighting, trainable weapons, all light level television, infrared sensor, and secure communications systems. These subsystems enable the gunship to strike target with surgical accuracy, to loiter safely in the target area for extended periods, and to perform these tasks at night and in adverse weather conditions. Every effort has been made to adapt off-the-shelf equipment. To the maximum extent possible, the subsystems in the AC-130U are common with systems on other Air Force (AF) Special Operations Command aircraft.

#### B. Accomplishments/Planned Program

<table>
<thead>
<tr>
<th></th>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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</thead>
<tbody>
<tr>
<td>AC-130U Plus Four</td>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY03</td>
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<td>FY04</td>
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<td></td>
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<tr>
<td>FY05</td>
<td></td>
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<tr>
<td>FY03 Funded engineering analysis for obsolescence issues in support of the four C-130H’s added to the gunship inventory.</td>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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<tbody>
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<td></td>
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<tr>
<td>FY05</td>
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<tr>
<td>FY03 Continued weight and drag reduction designs, survivability, technical/reliability and maintainability studies, and tech order verification validation and ground flight test support.</td>
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<tr>
<td>FY04 Continue weight and drag reduction design, obsolescence engineering drawings, survivability studies, and ground/flight test support.</td>
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<tr>
<td>FY05 Continue weight and drag reduction design, obsolescence engineering drawings, survivability studies, and ground/flight test support.</td>
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### Exhibit R-2a, RDT&E Project Justification

#### Appropriation/Budget Activity

| RDT&E BA # 7 | AC-130U Gunship/Project 3326 |

#### C. Other Program Funding Summary:

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<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
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<th>Total</th>
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</table>

#### D. Acquisition Strategy.

Modify C-130H airframes into a side-firing gunship configuration on a sole-source fixed price contract. A cost plus fixed fee contract line item will be included to accommodate any required changes due to obsolescence, vanished vendors or other required changes. The AC-130U is logistically supported at organizational, intermediate and depot levels. Initial operational capability occurred in March 1996, and full operational capability was declared March 2002.
### Exhibit R-3  COST ANALYSIS

**DATE: FEBRUARY 2004**

**APPROPRIATION / BUDGET ACTIVITY**

<table>
<thead>
<tr>
<th>RDT&amp;E DEFENSE-WIDE</th>
<th>Special Operations Tactical Systems Development/PE1160404BB</th>
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**AC-130U Gunship /3326**

<table>
<thead>
<tr>
<th>Actual or Budget Value ($ in millions)</th>
<th>Contract Method &amp; Type</th>
<th>Performing Activity &amp; Location</th>
<th>Total PYs Cost FY04</th>
<th>Budget FY04</th>
<th>Award FY04</th>
<th>Total Budget FY05</th>
<th>Award FY05</th>
<th>To Complete Program</th>
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<tr>
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<td>Subtotal Spt</td>
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<td>35.119</td>
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<td>Subtotal T&amp;E</td>
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<td>Subtotal Management</td>
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<td>* Close out original Ac-130U purchase</td>
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**Total Cost**


**Remarks:**
### Exhibit R-4, Schedule Profile

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<th>Project Number and Name</th>
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<td>PE1160404BB/Special Operations Tactical System Development</td>
<td>Project 3326/AC-130U Gunship</td>
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</table>

- Full Rate Production Decision
- Exercise Option to Purchase Remaining Three Aircraft
- Production Delivery Plus Four Aircraft
- Post Production Support
## Exhibit R-4a, Schedule Profile

<table>
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<tr>
<th>Appropriation/Budget Activity</th>
<th>Program Element Number and Name</th>
<th>Project Number and Name</th>
<th>Date: FEBRUARY 2004</th>
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<tbody>
<tr>
<td>RDT&amp;E/7</td>
<td>PE1160404BB/Special Operations Tactical Systems Development</td>
<td>Project 3326/AC-130U Gunship</td>
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<tr>
<td>Full Rate Production Decision</td>
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<td></td>
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</tr>
<tr>
<td>Exercise Option to Purchase Remaining Three Aircraft</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Production Delivery Plus Four Aircraft</td>
<td>4Q 2-3Q</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Production Support</td>
<td>2-4Q 1-4Q 1-4Q 1-4Q 1-4Q 1-4Q</td>
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</tbody>
</table>
A. Mission Description and Budget Item Justification: This project provides aviation support to Special Operations Forces (SOF) in worldwide contingency operations and low-intensity conflicts. The specialized aircraft for these missions must be capable of rapid deployment and undetected penetration of hostile areas. These aircraft must be capable of operating at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF. The threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters. This project will develop/upgrade SOF rotary wing aircraft systems that will be capable of successful operations in increasingly hostile environments. Rotary wing systems supported by this project include: A/MH-6M, MH-60L/K/M, and MH-47D/E/G, and MH-53. Efforts include:

- **A/MH-6.** (1) Conducts flight testing on Mission Enhancement Little Bird. (2) Develops lightweight conformal communications antennas. (3) Develops and qualifies a lightweight version of the MIL-STD-1760 Hellfire launcher.

- **MH-47/MH-60 Aircraft.** (1) Develops a follow-on weapon system to the currently fielded M-134 Mini Gun. Replacement will be lighter, more reliable/maintainable, with improved suppressive fire capability. (2) Continues nonrecurring engineering, integration and testing for MH-47 Service Life Extension Program (SLEP). (3) Develops, integrates and tests a fly-by-wire flight control system for the MH-60 SLEP.

- **MH-47/MH-60 Avionics/Sensors.** (1) Develops and qualifies a “next generation” Forward Looking Infrared Radar (FLIR). New FLIRs will provide significantly increased performance, weight savings, and improved reliability/maintainability. (2) Develops and qualifies a multiple sensor night vision system (Distributed Aperture System) that incorporates and blends the best attributes of image intensification, infrared, and low light level camera. (3) Develops and qualifies a Low Probability of Intercept/Low Probability of Detection (LPI/LPD) Obstacle Avoidance/Cable Warning system. (4) Develops and qualifies a rotary wing Terrain Following/Terrain Avoidance (TF/TA) navigation system. The system is characterized by a forward-looking LPI/LPD active sensor, digital elevation terrain data (passive) and a
blended TF/TA solution of the processed active and passive navigation information. (5) Develops/integrates the Army-provided Army Aviation Command & Control System (A2C2S) into the MH-47. Develops the ability to control Unmanned Aerial Vehicles from the A2C2S and SOF Command & Control platforms. (6) Develops and qualifies an infrared exhaust suppressor for MH-47 aircraft. (7) Develops and qualifies a Common Avionics Architecture for Penetration radar altimeter. (8) Included in the modular avionics modifications, develops the SOF unique requirements to upgrade the Enhanced Global Positioning System/Inertial Navigation System (GPS/INS) as part of a tri-service GPS/INS upgrade program.

- MH-53. Provides nonrecurring engineering associated with incorporation of the Directional Infrared Countermeasures (DIRCM) system. DIRCM provides an Infrared (IR) jamming capability that counters missile threats in the band one, two, and four infrared frequency spectrum.

### B. Accomplishments/Planned Program

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<tr>
<td>FY03</td>
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<tr>
<td>Completed flight testing of MELB aircraft.</td>
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<table>
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<td>MH-47/MH-60 – Aircraft</td>
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<tr>
<td>FY04</td>
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<tr>
<td>Continue nonrecurring engineering and integration for the MH-47 SLEP. Begin engineering development for MH-60 SLEP (fly-by-wire flight control system).</td>
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<tr>
<td>FY05</td>
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<tr>
<td>Continue MH-60 SLEP fly-by-wire flight control system development.</td>
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</tbody>
</table>
## FY03 FY04 FY05
### MH-47/MH-60 – Avionics/Sensors
- **MH-47/MH-60 – Avionics/Sensors**
  - FY03: 16.652
  - FY04: 34.009
  - FY05: 17.228

### FY03
- Began development of assault and attack FLIR systems to replace aging Q-16B and D systems for the fleet of Army Special Operations Aviation (ARSOA) aircraft. Completed development of a replacement radar altimeter that is less detectable. Began development and testing of a multisensor night vision system, a rotary wing TF/TA navigation system and an Obstacle Avoidance/Cable Warning (OA/CW) system for use on all ARSOA platforms. Developed/qualified an Intelligence Broadcast Receiver. Continued development, integration, and testing of an IR engine exhaust suppressor for the MH-47.

### FY04
- Continue development of assault and attack FLIR systems to replace aging Q-16B and D systems for the fleet of ARSOA aircraft. Continue development and testing of a rotary wing TF/TA navigation system. Complete OA/CW development and testing. Complete development of the SOF-unique requirements to upgrade the GPS/INS which is a sub-effort of modular avionics.

### FY05
- Continue development of the TF/TA navigation system. Develop/integrate A2C2S into the MH-47.

### MH-53
- **MH-53**
  - FY03: 5.899
  - FY04: 1

### FY03
- Completed nonrecurring engineering associated with the incorporation of the DIRCM system. DIRCM provides an IR jamming capability that counters missile threats in band one, two, and four IR frequency spectrum.
C. Other Program Funding Summary:

<table>
<thead>
<tr>
<th></th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
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<tr>
<td>Sustainment</td>
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</tr>
</tbody>
</table>

D. Acquisition Strategy. A/MH-6 - This effort provides necessary structural and fatigue analyses, component testing, and test support/data analysis efforts required to enhance operational safety margins and airworthiness of A/MH-6M aircraft.

MH-47/MH-60 Aircraft - This effort provides for vibration testing and analysis of the MH-47 airframe, the development of the fly-by-wire flight control system for the MH-60 SLEP and develops and qualifies the replacements for the M-134 weapons system. The program leverages engineering and production assets off the CH-47F remanufacture and UH-60 SLEP programs (both funded by the Army) that will minimize costs required to install special operations forces-peculiar modernization initiatives. Proprietary considerations drive efforts to each original airframe manufacturer. A competitive source selection process will be held for M-134 replacement program.

MH-47/MH-60 Avionics/Sensors - determination and development of next-generation improvements, enhancements, and upgrades to sensors and avionics systems will be conducted using competitive processes to the maximum extent practicable. Proprietary considerations may direct some efforts to the original equipment manufacturer.

MH-53 – Provides production, installations, and associated interim contractor support at the depot level that is associated with the incorporation of the DIRCM system. DIRCM provides an IR jamming capability that counters missile threats in the band one, two and four infrared frequencies.
## APPROPRIATION / BUDGET ACTIVITY

### Special Operations Tactical Systems Development/PE1160404BB

### RDT&E DEFENSE-WIDE / 7

### Special Operations Forces Aviation/D615

### Exhibit R-3, Cost Analysis

<table>
<thead>
<tr>
<th>Cost Categories</th>
<th>Contract Method &amp; Type</th>
<th>Performing Activity &amp; Location</th>
<th>Total Cost FY04</th>
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<th>Award Budget Date FY05</th>
<th>To Complete Program</th>
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<td>A/MH-6</td>
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### Remarks:

- Management: 0.000
- Subtotal Spt: 0.000
- Developmental Test & Eval
- Subtotal T&E: 66.927 7.764
- Remarks:
- Subtotal Management
- Remarks:
- Total Cost: 152.851 44.554 29.198
- Remarks:
### Exhibit R-4, Schedule Profile

**Appropriation/Budget Activity:**
RDT&E/7

**Project Number and Name:**
Project D615/SOF Aviation

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Date: FEBRUARY 2004
A. Mission Description and Budget Item Justification: This project funds the development of Naval Special Warfare (NSW) support items used during hydrographic/inland reconnaissance, beach obstacle clearance, underwater ship attack, and other direct action missions. Sub-projects include:

- **Advanced Sea, Air, Land (SEAL) Delivery System (ASDS).** The ASDS is a one atmosphere submersible that will provide Naval Special Operations Forces with a new clandestine long range insertion capability required to conduct traditional SEAL missions ranging from reconnaissance to direct action. ASDS advantages over the current SEAL Delivery Vehicle, a wet submersible, include greatly increased range, increased payload and passenger capacity, state of the art communications, the ability to loiter in a target area, and protection of personnel from complex dive profiles and exposure to long cold water transit.

- **Undersea Systems.** Development of undersea systems, which provide the SOF combat swimmers with the necessary diving and diving related equipment to fulfill assigned underwater combat missions, includes the following:
  - **Naval Special Warfare (NSW) Very Shallow Water Mine Countermeasures (VSW MCM).** Phased development/improvement of equipment to support the combat swimmer in the NSW VSW MCM operational environment.
  - **Non-Gasoline Burning Outboard Engine (NBOE).** Development of a submersible alternative fuel outboard engine for use on SOF Combat Rubber Raiding Craft.
  - **SEAL Delivery Vehicle (SDV).** Develop replacements for obsolete and/or unsupportable electronics with current technology to improve safety, reliability and performance. Upgrade mobility capabilities for insertion and extraction of the SDVs. Evaluate technologies for next-generation SDVs.
### B. Accomplishments/Planned Program

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<th>FY04</th>
<th>FY05</th>
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<td>Continue P3I efforts.</td>
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<td>Continue P3I development for the SAHRV program.</td>
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</table>

D. Acquisition Strategy

- **ASDS.** ASDS was designated an Acquisition Category (ACAT) 1C Major Defense Acquisition Program in Mar 03. Milestone C decision from ASN RDA scheduled for Feb 04 will determine acquisition strategy for remaining ASDS.

- **HRLMD.** Established to acquire a small, handheld unit to be used by NSW forces in the conduct of clandestine hydrographic reconnaissance, ship attack and harbor penetration missions. The program utilizes commercial-off-the-shelf (COTS) technology and employs a phased acquisition strategy designed to leverage similar efforts currently being pursued by the Navy. Following user evaluation of prototype units and further design refinement, as well as developmental testing and a follow-on operational assessment, the program was authorized to proceed with production.

- **NBOE.** Transition of technology demonstrator to an acquisition program which commenced with advanced demonstration and validation. Modifications to current Military Amphibious Reconnaissance System engine include advanced electronically controlled direct fuel injection and ignition technologies. A competitive source selection was held, with three vendors responding, resulting in a down-select to a single contractor. That contractor filed Chapter 11 bankruptcy and the purchasing company has assumed development duties.
• SAHRV. The SAHRV is a small unmanned underwater vehicle for use by NSW personnel in the conduct of hydrographic reconnaissance. SAHRV utilizes COTS technology and employs a phased acquisition strategy designed to leverage Office of Naval Research sponsored initiatives. Four Engineering Development Models (EDM) were delivered in December 2000. The EDM supported developmental testing and operational testing and evaluation. Following operational testing and evaluation, a production decision commenced the production phase. Initial operational capability was completed 2nd Qtr FY03. Full operational capability of 14 units is planned to be completed by 2nd Qtr FY04.

• SDV. This effort replaces obsolete and/or unsupportable electronics equipment with current equipment. Identification and development of equipment for installing, upgrading and/or replacing systems on the SDV will be accomplished through either Best-Value acquisition or, where appropriate, original equipment manufacturer replacement efforts.
### Exhibit R-3 COST ANALYSIS

**DATE:** FEBRUARY 2004

**APPROPRIATION / BUDGET ACTIVITY**

Special Operations Tactical Systems Development/PE1160404BB

**RDT&E DEFENSE-WIDE / 7**

Underwater Systems Advance Development/S0417

| Cost Categories (Tailor to WBS, or System/Item Requirements) & Type | Contract & Method | Performing Activity & Location | Total PYs | Budget Cost FY04 | Award Date FY04 | Budget Cost FY05 | Award Date FY05 | Budget Cost FY06 | Award Date FY06 | Complete Program |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary Hardware Dev | SAHRV | FFP | WHOI, Woods Hole, MA | 5.176 | 0.387 | Jan-04 | 0.060 | Jan-05 | 5.623 |
| | HRLMD | FFP | UT-ARL, Austin, TX | 0.500 | 0.500 |
| | NBOE | Various | Various | 0.757 | 0.757 |
| | SDV | WR | CSS, Panama City, FL | 12.631 | 0.572 | Various | 0.581 | Various | Various | Cont. | Cont. |
| | STD | FFP | Stidd Systems, Inc. Greenport, NY | 0.378 | |
| | ASDS | CPIF/C | Northrop-Grumman | 299.468 | |
| | ASDS | CPFF | Newport News Ship Yard, VA | 8.605 | |
| Subtotal Product Dev | | | | 353.758 | 10.565 | 2.259 | 2.110 |

**Remarks**

- Technical Data
  - ASDS | Various | Various | 8.044 | 8.044 |
  - SAHRV | WR | CSS, Panama City, FL | 0.113 | 0.113 | Jan-04 | 0.035 | Jan-05 | 0.148 |
  - HRLMD | WR | CSS, Panama City, FL | 0.200 | 0.200 |
  - NBOE | WR | CSS, Panama City, FL | 0.043 | 0.043 | 0.024 | Jan-03 | Cont. | 0.067 |
  - Subtotal Supt. | | | | 8.287 | 0.137 | 0.035 | 0.000 | 0.000 | 8.459 |

**Test & Evaluation**

- Engineering T&E (NBOE) | Various | Various | 0.268 |
- DT&E (STD) | MPR | CSS, Panama City, FL | 0.357 |
- OT&E (ASDS) | Various | OPEVFOR, Norfolk, VA | 3.085 | 2.500 | Various | 3.585 |
- Host Testing (ASDS) | Various | NAVSEA, Washington Navy Yard | 20.615 |
- Launch & Recovery Trials (ASDS) | Various | NAVSEA, Washington Navy Yard | 0.000 |
- LFT&E (ASDS) | Various | NAVSEA, Washington Navy Yard | 1.150 | 0.500 | Various | 1.650 |
- DT&E (SAHRV) | WR | CSS, Panama City, FL | 0.222 | 0.050 | Oct-04 | 0.272 |
- DT&E (SAHRV) | WR | CARDEROCK, West Bethesda, MD | 0.037 |
- OT&E (SAHRV) | WR | OPEVFOR, Norfolk, VA | 0.049 |
## Exhibit R-3 COST ANALYSIS

**APPROPRIATION / BUDGET ACTIVITY**
- Special Operations Tactical Systems Development/PE1160404BB
- Underwater Systems Advance Development/S0417

### Actual or Budget Value ($ in millions)

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**Remarks:**

- Total Cost: 400.936
- 16.711
- 2.395
- 2.216
- Cont.

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**Advanced Sea, Air Land (SEAL Delivery System)**

**P3I Development**

**Non-Gasoline Burning Outboard Engine Development/Testing**

**Milestone C**

**Naval Special Warfare Very Shallow Water Mine Countermeasures**

**P3I (SAHRV)**

**SEAL Delivery Vehicle**

**Develop and Test Improved Electronics**

**Next Generation Studies**

**Develop Alternative Mobility**

**Project Number and Name**

Project 50417/Underwater System Advanced Development

**Program Element Number and Name**

PE1160404BB/Special Operations Tactical System Development

**Appropriation/Budget Activity**

RDT&E/7
## Exhibit R-4a, Schedule Profile

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<td>Project S0417/Underwater Systems Advanced Development</td>
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### Schedule Profile

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A. Mission Description and Budget Item Justification: Special Operations Forces (SOF) Planning and Rehearsal System (SOFPARS) provides automated integrated mission planning and execution tools required for time critical command and control of globally deployed SOF and, if required, coalition forces. The SOFPARS Program automates time-intensive planning activities and provides enhanced situational awareness, as well as interoperable automated adaptive war planning and collaborative environments for horizontal, vertical and parallel development of component parts of mission plans. SOFPARS spans all echelons of SOF command to include Theater Special Operations Commands (TSOCs), Joint Special Operations Task Forces (JSOTFs), Joint Special Operations Aviation Components (JSOAC), with automated interfaces to warfighters and warfighting platforms. SOFPARS develops and integrates software applications.

B. Accomplishments/Planned Program:

<table>
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<tr>
<th>Planned Portable Flight Planning Software (PFPS) releases</th>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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FY03  Released PFPS 3.3, 1QFY04. Continued to develop joint version PFPS 4.0 with Army, Air Force and Navy functions, planned release 4QFY05. Also continue to develop PFPS 3.3.1 with planned release 4QFY04.

FY04  Begin development of SOC-level software development and integration. First-look migration evaluation of Joint Mission Planning System (JMPS). Transition planning and software conversion to JMPS framework begins.

FY05  Continue development of SOC-level software development and integration. Continue migration evaluation of JMPS. Continue transition planning and software conversion to JMPS framework.
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<th>Appropriation/Budget Activity</th>
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<tr>
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<td>SOFPARS/Project S350</td>
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**Deferred/Future Requirements**

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<tr>
<td>.520</td>
<td>.630</td>
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**RDT&E Articles Quantity**

- **FY03** Developed and integrated aircraft weapons/electronics enhancements and interfaces with joint systems.
- **FY04** Continue to develop and integrate aircraft weapons/electronics enhancements and interfaces with joint systems.
- **FY05** Continue to develop and integrate aircraft weapons/electronics enhancements and interfaces with joint systems.

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<tr>
<th>FY 2003</th>
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<th>FY 2005</th>
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**Development and Modification of Automated Tools**

**RDT&E Articles Quantity**

- **FY05** Begin the development and modification of automated tools to meet ground mission planning requirements. Begin the development of TSOC Command and Control (C2) nodes.

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**Test and Evaluation of Core Software**

**RDT&E Articles Quantity**

- **FY03** Continued test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models.
- **FY04** Continue test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models.
- **FY05** Continue test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models.
### Exhibit R-2a, RDT&E Project Justification

**Appropriation/Budget Activity**
- RDT&E BA # 7

**SOFPARS/Project S350**

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<td>0.491</td>
<td>0.495</td>
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**To Total**
- FY03: 0.290
- FY04: 0.192
- FY05: 0.661
- FY06: 0.471
- FY07: 0.491
- FY08: 0.495
- FY09: Cont.
- Total: Complete

**C. Other Program Funding Summary:**

Acquisition Strategy. Develop mission planning software to support SOF operations by leveraging ongoing personal computer-based efforts known as Portable Flight Planning Software (PFPS) under the Air Force Mission Support System program and migration to the Joint Mission Planning System in the future year defense program. Integration of SOF specific requirements into PFPS along with maximum use of commercial off-the-shelf software technology and components reduces overall costs and schedule. Contract strategy combines various contracts and types to include competitively awarded cost plus time & materials and sole source cost-no-fee (educational institution) contracts. Maximize use of state of the art commercial hardware technology procured via firm fixed price contract to take advantage of software portability and open system architecture. Focuses on platform specific software interface modules required to initialize and upload platform mission computers avionics systems through the use of electronic data transfer devices.
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### Exhibit R-4, Schedule Profile

**Date:** FEBRUARY 2004

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</table>
A. Mission Description and Budget Item Justification: This project provides for development and testing of specialized, lightweight individual weapons, fire control/surveillance devices, and combat equipment to meet the unique requirements of Special Operations Forces (SOF). SOF often deploy as small, independent, quick reaction, foot-mobile teams independent of primary logistics support. Existing weapons and combat equipment are frequently unsuited to these conditions. Sub-projects include:

- Body Armor/Load Carrying System (BALCS). Provides a tactical, deployable body armor and load carriage system capable of improving survivability while optimizing the load carrying capabilities of the SOF operator. BALCS consists of modular body armor, load carriage and backpacks.

- Family of Sniper Detection Systems (FSDS). Provides the capability for SOF units to rapidly locate the position of a sniper’s origin of fire in near real time. Detects and locates small arms gunfire from 5.56mm, 7.62mm and .50 caliber weapons with effective detection ranges that allow for the conduct of counter-sniper operations.

- Lightweight Counter Mortar Radar (LCMR). The LCMR provides a man-portable, lightweight, 360° counter-mortar radar system designed to acquire hostile mortar and other indirect fire out to a range of 5,000 meters. The LCMR is compatible with current Command and Control communications and provides an all weather capability to the SOF operator on the ground, providing the operator with a precise target location used for counter-fire. This effort was transitioned from Project S200 in FY 2002.

- M4A1 SOF Carbine Accessory Kit (M4MOD). The M4MOD Kit enhances the standard Army M4 Carbine by using the latest technological advances in optional accessories (up to 30 different functions/capabilities) such as day scopes, night scopes, active aiming laser module, visible lights, grenade launchers, suppressors, hand grips, and close quarters battle sights. These accessories greatly enhance the lethality of the weapon system and the survivability of the SOF operator. The SOF Combat Assault Rifle (SCAR) is a subproject of the M4MOD program to further enhance the performance of SOF equipment. The SCAR will provide an enhanced family of weapons.
Night Vision Devices (NVD). The SOF NVD system includes advanced field of view goggles, improved sensors, multi-spectral imaging, sensor fusion, Precision Targeting Location Designator (PTLD), and micro-laser integration and improved displays. The PTLD will be a combined laser range finder, geological locator, and laser designator for directing precision guided munitions.

Precision Laser Targeting Device (PLTD). The PLTD will be a hand-held binocular device with an embedded global positioning system (GPS) to provide the SOF operator with the ability to direct close air support missions by determining the geo-location of a target to support the delivery of GPS-guided munitions.

B. Accomplishments/Planned Program

<table>
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<tr>
<th></th>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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<tbody>
<tr>
<td>BALCS</td>
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<tr>
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FY04 Conduct ballistics testing on Special Operations Forces (SOF) multi hit APM2 plates and other non-SOF plates for the purpose of establishing a body armor ballistics protection database.

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<th></th>
<th>FY 2003</th>
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<th>FY 2005</th>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
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FY04 DD Fm 1415 request submitted to Office of the Secretary of Defense to reprogram this Congressional Plus-up from RDT&E to Procurement to continue buying out the basis of issue of Gunfire Detection Systems (GDS).

<table>
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<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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<tr>
<td>LCMR</td>
<td>.300</td>
<td>.966</td>
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<td>RDT&amp;E Articles Quantity</td>
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FY03 Completed additional research and development prior to production decision on two working prototypes transitioned from technology development program.
FY04 Congress added funds to further develop the pre-production prototype LCMRs and investigate alternative sources that may possibly meet the LCMR Operational Requirements Document.
Appropriation/Budget Activity | FY 2003 | FY 2004 | FY 2005
---|---|---|---
RDT&E.A BA # 7 | M4MOD | .235 | 1.099 | 1.796

RDT&E Articles Quantity

**FY03** Developed Enhanced Combat Optical Sights and clip-on night vision devices, and continued efforts on the Enhanced Grenade Launcher Module (EGLM).

**FY04** Research, develop and test the next generation day/night and various next generation lasers and continue efforts on the EGLM. Funds will also support document preparation and solicitation in support of a MS B decision and conduct early user assessments and developmental testing on candidate SCAR weapon systems.

**FY05** Research, develop and test the next generation kit items and continue efforts on next generation lasers. Funds will also be used to award contracts for SCAR engineering test units and to conduct an additional early user assessment and development testing.

<table>
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<tr>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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</thead>
<tbody>
<tr>
<td>NVD</td>
<td>3.623</td>
<td>2.614</td>
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</table>

RDT&E Articles Quantity

**FY03** This initiative was Congressional Plus-up funding used to develop and test the next generation laser target designator.

**FY04** Design and test the next generation SOF NVD.

**FY05** Design and test the next generation (fusion) SOF goggle. The fusion goggle combines an image intensification tube and a thermal micro bolometer sensor to provide the ability for the SOF operator to improve his ability to see in dust, smoke, fog, and periods of non-ambient light.

<table>
<thead>
<tr>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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<tbody>
<tr>
<td>PLTD</td>
<td>2.993</td>
<td>30</td>
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RDT&E Articles Quantity

**FY05** Develop a laser targeting device capable of providing the geo-location of a target to support the delivery of global positioning system guided munitions.
C. Other Program Funding Summary:

<table>
<thead>
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<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
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<th>Complete Cost</th>
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<td>8.221</td>
<td>30.758</td>
<td>40.091</td>
<td>48.695</td>
<td>27.697</td>
<td>Complete</td>
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D. Acquisition Strategy.

- **BALCS.** Maximizes the use of Commercial Off the Shelf (COTS) and Non-Developmental Item technology, combined milestone decisions, early user involvement, Integrated Product Teams and streamlined source selection procedures to rapidly build, test and field operational capability.

- **FSDS.** The GDS uses proven/existing technology validated under a Foreign Comparative Test program. Sole source contract to the vendor, Metravib, was awarded using streamlined procedures. Operational and environmental tests were conducted to support Milestone C, Full Rate Production and Fielding and Deployment Release.

- **LCMR.** Transitioned the program from Director of Technology to a Program Executive Office, with two working prototypes. Conduct additional research and development prior to production decision.

- **M4MOD.** The intent of the M4MOD program is to provide SOF with the ability to adapt the M4A1 Carbine to increase its operational effectiveness through improved target recognition, acquisition, and hit capability during day and night from close quarters to 600 meters. The program calls for continuing efforts contained in blocks that are first developed and tested, and then fielded to the full spectrum of SOF operators. Future blocks include a program to develop a pocket scope mount, an enhanced M203 capability, family of muzzle break suppressors, shot counter and numerous other components designed to enhance the capabilities of the weapon while at the same time combining or increasing capability. The SCAR effort will use an evolutionary acquisition approach.

- **NVD.** Development of next generation NVD. Program will use evolutionary acquisition approach.

- **PLTD.** The PLTD will leverage COTS capability and develop a more accurate laser targeting device capable of providing geolocation of a target for the delivery of global positioning system guided munitions. The improved accuracy is necessary to eliminate the possibility of fratricide incidents.
## Exhibit R-3  COST ANALYSIS

### Actual or Budget Value ($ in millions)

| Cost Categories | Contract & Type | Performing Activity & Location | Total FY04 Cost | Budget FY04 Award | Award FY05 Date | Budget FY05 Date | Award FY05 Date | To Complete Program | Total Program |
|-----------------|----------------|--------------------------------|----------------|------------------|----------------|----------------|----------------|------------------|----------------|-----------------|
| **Hardware Dev** |                |                                |                |                  |                |                |                |                  |                |                |
| BALCS (Test Articles) | Various | PM Spear, Natick, MA | 0.050 | Various | Cont. | Cont. |                |                |                |                |
| LCMR | TBD | PM LCMR, R. Monmouth, NJ | 0.050 | Various | Cont. | Cont. |                |                |                |                |
| M4MOD | Various | NSWC-Crane, Crane, IN | 3.733 | 0.225 | Various | 0.346 | Various | Cont. | Cont. |                |                |
| NVD | TBD | Various | 3.000 | 0.904 | Various | 0.287 | Various | Cont. | Cont. |                |                |
| PLTD | TBD | PM Sensors & Lasers, R. Belvoir, VA | 2.000 | Various | 2.000 | Various | Cont. | Cont. |                |                |

**Remarks:**

**Development Spt**

| M4MOD | ALLOT | NSWC-Crane, Crane, IN | 0.202 | 0.128 | Various | 0.225 | Various | Cont. | Cont. |                |                |
| NVD | TBD | Various | 0.100 | 0.824 | Various | 0.231 | Various | Cont. | Cont. |                |                |
| PLTD | TBD | PM Sensors & Lasers, R. Belvoir, VA | 0.250 | Various | 0.250 | Various | Cont. | Cont. |                |                |

**Integrate Logistics Spt**

| M4MOD | ALLOT | NSWC-Crane, Crane, IN | 0.073 | 0.072 | Various | 0.108 | Various | Cont. | Cont. |                |                |

**Configuration Mgmt**

| LCMR | ALLOT | PM LCMR, R. Monmouth, NJ | 0.100 | Various | Cont. | Cont. |                |                |
| M4MOD | ALLOT | NSWC-Crane, Crane, IN | 0.107 | 0.072 | Various | 0.108 | Various | Cont. | Cont. |                |                |
| NVD | TBD | Various | 0.027 | 0.330 | Various | 0.102 | Various | Cont. | Cont. |                |                |
| PLTD | TBD | PM Sensors & Lasers, R. Belvoir, VA | 0.250 | Various | 0.250 | Various | Cont. | Cont. |                |                |

**Subtotal Spt**

|                | | | 0.509 | 1.536 | 1.274 | Cont. | Cont. |                |                |

**Remarks:**
### Exhibit R-3 Cost Analysis

#### Appropriation / Budget Activity
- **RDT&E Defense-Wide / 7**
- **Weapons Systems Advance Development / S375**
- **Special Operations Tactical Systems Development / PE1160404BB**

#### Developmental Test

<table>
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<tr>
<th>Activity</th>
<th>Method</th>
<th>Location</th>
<th>Total Cost FY04</th>
<th>Budget FY04</th>
<th>Award FY04</th>
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<td>0.234</td>
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#### Operational Test

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#### Remarks:
- **Government Eng Spt**
- **BALCS**
- **LCMR**
- **N4MOD**

#### Total T & E
- **Subtotal**
- **Remarks:**
- **FSDS** DD Form 1415 to re-color to Procurement

#### Total Cost
- **Subtotal Management**
- **Remarks:**
- **FSDS**
- **DD Form 1415 to re-color to Procurement**

---

**UNCLASSIFIED**
1. Body Armor/Load Carrying System
   - Ballistic Plate Test
   - Ballistic Plate Effectiveness Database
   - Ballistic Plate Test Report

2. Family of Sniper Detection Systems
   - No RDT&E activities planned - DD Fm 1415 reprogramming request submitted to change funding to Procurement for purchase of production systems.

3. Lightweight Counter Mortar Radar
   - Developmental Test (DT)
   - Operational Test (OT)
   - MS B
   - MS C
   - IOC
   - FOC
## Exhibit R-4, Schedule Profile

**Date:** FEBRUARY 2004

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<th>Project Number and Name</th>
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<td>PE1160404BB/Special Operations Tactical System Development</td>
<td>Project S375/Weapons and Support Systems Advanced Development</td>
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### 4. M4MOD

- **FMBS MS C**
- **SCAR Market Research**
- **MDNS MS C (Multiple)**
- **Shot Counter MS C**
- **EGLM DT/OT**
- **EGLM MS C**
- **SCAR Initial Awards/Eval Test Articles**

### 5. NVD (PTLD)

- **MS A/B**
- **Developmental Test**
- **MS C**
- **NVD (Fusion Goggle)**

#### MS A/B

- **DT/OT**
- **MS C**
### Exhibit R-4, Schedule Profile

**Appropriation/Budget Activity**
- RDT&E/7

**Program Element Number and Name**
- PE1160404BB/Special Operations Tactical System Development

**Project Number and Name**
- Project S375/Weapons and Support Systems Advanced Development

**Date:** FEBRUARY 2004

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5. **NVD (PTLD) Cont'd**

**NVD (Next Generation Monocular)**

- **MS A/B**
  - Δ

- **DT/OT**
  - Δ

- **MS C**
  - Δ

**NVD (Countermeasures)**

- **MS A/B**
  - Δ

- **DT/OT**
  - Δ

6. **PLTD**

- **MS A/B**
  - Δ

- **Developmental Test**
  - Δ
## Exhibit R-4a, Schedule Profile

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<td>Project 375/Weapons and Support Systems Advanced Development</td>
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### Schedule Profile

|------|--------|--------|--------|--------|--------|--------|

1. **Body Armor/Load Carrying System**
   - Ballistic Plate Test: 2-3Q
   - Ballistic Plate Effectiveness Database: 3-4Q
   - Ballistic Plate Test Report: 4Q

2. **Family of Sniper Detection Systems**
   - No RDT&E Activities planned - DD Fm 1415
   - Request submitted to change RDT&E to Procurement to purchase production systems

3. **Lightweight Counter Mortar Radar**
   - Developmental Test: 1Q
   - Operational Test: 1-2Q
   - Milestone B: 4Q
   - Milestone C: 1Q
   - IOC: 3Q
   - FOC: 3Q

4. **M4MOD**
   - FMBS MS C: 1Q
   - SCAR Market Research: 3-4Q
   - MDNS MS C (Multiple): 4Q
   - Shot Counter MS C: 4Q
   - EGLM DT/OT: 4Q, 1Q
   - EGLM MS C: 1Q
   - SCAR Initial Awards/Eval Test Articles: 1-3Q
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</table>
A. Mission Description and Budget Item Justification: This project funds the analysis, development, test, and integration of Special Operations Forces (SOF) simulator training and mission rehearsal systems and upgrades. Sub-projects include:

- MH-47G/MH-60-BLK-1 Combat Mission Simulator (CMS) – Develops a common database (using a single common source) used to run all the different computers on the simulator, including the visual, sensor, threat, weather, and computer generated forces. The common environment developmental effort will enable increased levels of Joint Simulator interoperability because, eventually, all SOF simulators will use and share the common single source. Will be initially developed, tested and fielded on the first MH-47G Model Simulator for the 160th Special Operations Aviation Regiment.

- SOF Air to Ground Interface Simulator (SAGIS) for Air Force Special Operations Command (AFSOC) Combat Controllers and United States Army Special Operations Command (USASOC) Special Forces Teams. Develops training capability to allow Ground units to virtually interface with SOF Aircrews to practice and rehearse Joint Close Air Support, Terminal Attack Control, and ordnance delivery. Funds the initial development using incremental, spiral development methodology.

- A/MH-6 CMS. Develops an integrated combat mission flight simulator into the existing high level architecture environment to conduct real-world mission rehearsal. This simulator enables initial, mission special qualification, continuation and upgrade flight training, including weapons training. Currently, no training device exists with this capability.

- AFSOC Simulator Block Upgrade. Funds the upgrade of the AFSOC simulators to overcome obsolescence and concurrency issue. Additionally develops a common electronic warfare.

- USASOC Simulator Block Upgrade. Funds the upgrade of USASOC simulators to overcome obsolescence and concurrency issues.
FY04 Develop the Common Environment for the new MH-47G/60 CMS and the MH-60 Block-1 in the Common Avionics Architecture System (CAAS) configuration to improve joint rehearsal capability and yield higher fidelity Joint Distributed Mission Training/Distributed Mission Rehearsal (DMT/DMR). Develop a joint common architecture resulting in higher levels of correlation between the simulator’s out the window view, sensors, threat, weather, and weapons effects with the rest of the SOF training and rehearsal network.

FY05 Continue development of the new MH-47/G/60 CMS and the MH-60 Block-1 in the CAAS configuration to improve joint rehearsal capability and yield higher fidelity Joint DMT/DMR. Develop a joint common architecture resulting in higher levels of correlation between the simulator’s out the window view, sensors, threat, weather, and weapons effects with the rest of the SOF training and rehearsal network.

FY04  Begin increment zero of the first SAGIS prototype, focusing on the Terminal Attack Control requirements.

FY03 Funded an A/MH-6 upward adjustment due to Canadian/U.S. exchange rate calculation.

FY05 Begins Requirements Analysis and Concept Exploration for a common threat environment/AFSOC Electronic Warfare Officer Station.
Exhibit R-2a, RDT&E Project Justification

<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
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<th>Special Operations Forces (SOF) Training Systems /Project S625</th>
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FY04 Funds the upgrade of USASOC simulators to overcome obsolescence and concurrency issues

C. Other Program Funding Summary:

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<th>FY09</th>
<th>To Complete</th>
<th>Total Cost</th>
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D. Acquisition Strategy. MH 47G/60 BLK-1 Part task Trainers, Developable Mission Rehearsal Devices, and Combat Mission Simulators developed in concert with the Common architecture developed using a spiral development, phased approach.
<table>
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<tr>
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Remarks:

Total Cost  21.583   13.537   4.765   39.885

Remarks:
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- **USASOC SBUD**
- **MH60/47 CMS**
- **SAGIS Increment 0**
- **AFSOC SBUD**
### Exhibit R-4a, Schedule Profile

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## Exhibit R-2a, RDT&E Project Justification

**Appropriation/Budget Activity**

| RDT&E BA # 7 | Aviation Systems Advance Development/Project SF100 |

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**RDT&E Articles Quantity**

### A. Mission Description and Budget Item Justification:

This project investigates the applicability of current and maturing technologies that have great potential for direct application to the development and procurement of specialized equipment to meet Special Operations Forces (SOF)-unique aviation requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in such areas as: Low Probability of Intercept/Low Probability of Detection (LPI/LPD) radios and radar; LPI formation/rendezvous flight; digital terrain elevation data and electronic order of battle; digital maps; LPI radar altimeter; display technology; situational awareness; near-real-time intelligence to include data fusion; laser radar/millimeter wave radar obstacle avoidance; imagery; threat detection and avoidance; electronic support measures for threat geolocation and specific emitter identification; navigation; target detection and identification technologies; aerial refueling; and studies for future SOF aircraft requirements. Sub-projects include:

- **AC-130U Pre-Planned Product Improvement.** Provides correction of system deficiencies and enhancement of mission capabilities for the AC-130U Gunship fleet.

- **Aviation Engineering Analysis.** Provides a rapid response capability to support SOF fixed wing aircraft. The purpose is to correct system deficiencies, improve asset life, and enhance mission capability through the means of feasibility studies and engineering analyses. This sub-project provides the engineering required to improve the design and performance integrity of the aircraft support systems, sub-systems, equipment, and embedded computer software as they relate to the maintenance, overhaul, repair, quality assurance, modifications, materiel improvements and service life extensions.

- **Common Avionics Architecture for Penetration (CAAP).** This program is joined with the USAF C-130 Avionics Modernization Program (AMP). CAAP initiates development of terrain following/terrain avoidance (TF/TA) radar having LPI/LPD characteristics for SOF C-130s. It also initiates development of an On-Board Enhanced Situational Awareness System (OBESA) which consolidates threat data from on and off-board sensors into a single coherent image to the crew. OBESA will be integrated on SOF C-130s, CV-22s, MH-60s and MH-47s.

- **EC-130 Obsolescence.** This program provides for development and design to resolve special mission equipment obsolescence and vanishing vendor issues.
- Leading Edge Technology. This program is directed toward improving near-real-time intelligence on SOF aircraft. This program will mature technologies enabling exploitation of vibroacoustic signatures relating to targets or tracking of friendly forces.

- MC-130H Aerial Refueling (MCAR). Provides 22 Air Force Special Operations Command MC-130H Combat Talon II aircraft with the capability to air refuel Special Operations Forces rotary wing aircraft. This extends the range of rotary wing aircraft operating in politically sensitive/denied airspace. Elements of the air refueling system include non-developmental item aerial refueling pods, 2 internal flat stackable tanks, and enlarged paratroop door windows.

- Digital Auto Flight Control System (DAFCS). This is a congressional plus-up for the MH-47s.

B. Accomplishments/Planned Program

<table>
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<tr>
<th></th>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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</thead>
<tbody>
<tr>
<td>AC-130U Pre-Planned Product Improvement</td>
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<td>2.356</td>
</tr>
<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY04 Initiate risk reduction strategies for an All Light Level Television replacement.</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
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</thead>
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<td>1.447</td>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>FY03 Continued engineering analysis of SOF fixed wing aircraft avionics and sensors.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY04 Continue engineering analysis of SOF fixed wing aircraft avionics and sensors.</td>
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<td></td>
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<tr>
<td>FY05 Continue engineering analysis of SOF fixed wing aircraft avionics and sensors.</td>
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<tr>
<td>Appropriation/Budget Activity</td>
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<td>FY 2004</td>
<td>FY 2005</td>
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<tr>
<td>-------------------------------</td>
<td>---------</td>
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<tr>
<td>Common Avionics Architecture for Penetration (CAAP)</td>
<td>42.631</td>
<td>41.346</td>
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<tr>
<td>FY03 Continued TF/TA and off-board ESA development under the US Air Force AMP contract. Continued integration and test of TF/TA radar; began CAAP risk reduction effort; completed CAAP hardware and software specification reviews; continued development and integration of intelligence broadcast receiver. FY04 Accelerate TF/TA and off-board ESA development under the US Air Force AMP contract. Department of Defense accelerated CAAP in FY 2004 for TF/TA development and qualification. This acceleration was necessitated by a 26 month slip in the Air Force AMP program which creates unacceptable risks and cost to SOF’s effort to field additional MC-130H Combat Talon IIs to address low density/high demand issues. Specific CAAP activities scheduled are acceleration of TF/TA risk reduction, initiation of developmental testing for MC-130H platforms, CAAP hardware preliminary design review; and CAAP software specification review. FY05 Continue acceleration of TF/TA and off-board ESA development. Specific activities scheduled for FY05: AMP/CAAP preliminary and critical design reviews; Gunship software specification review; and test readiness review for Talon I preliminary DT&amp;E.</td>
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<td>CAAP On-Board ESA</td>
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<tr>
<td>FY03 Initiated development of below line-of-sight (BLOS) On-Board ESA (OBESA) system. Initiated engineering analysis and development of special receiver technology for ESA. FY04 Continue development of below line-of-sight OBESA system. Continue engineering analysis and development of special receiver, digital map and color displays. Develop software for correlation fusion of special receive data with off/on-board threat information. FY05 Continue development of BLOS OBESA and special receiver systems. Continue integration and test of special receiver data with off/on-board threat information. Initiate development of special transmitter technology system.</td>
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<td>EC-130 Equipment Obsolescence</td>
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<tr>
<td>FY05 Develop and design improvements to resolve special mission equipment obsolescence.</td>
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</table>
### FY 2003 FY 2004 FY 2005
Leading Edge Technology 1.424

**RDT&E Articles Quantity**

**FY03** This initiative is a Congressional plus-up. Continued effort focusing on Vivro-Electronic Signature Target Analysis and Passive Acoustic Reflection Device technologies to design and build an aircraft interface unit and associated algorithms for target characterization.

**FY03** Continued engineering and manufacturing development (EMD) activities. Initiated trial install and flight test.

**FY04** Continued EMD activities. Continue flight testing of MC-130H MCARs.

**FY05** Develop carry-on internal flat stackable tanks.

### C. Other Program Funding Summary:

<table>
<thead>
<tr>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>To Complete</th>
<th>Total Cost</th>
</tr>
</thead>
</table>

### D. Acquisition Strategy.

- **AC-130U P3I.** Conduct engineering analysis to improve electro-optical sensor capability.

- **Aviation Engineering Analysis.** Continue engineering analysis activities to correct system deficiencies, improve asset life, and enhance mission capability of SOF fixed-wing aircraft avionics and sensors.

- **Common Avionics Architecture for Penetration (CAAP).** Develop a common technical solution satisfying fixed and rotary wing requirements for penetration missions. The program will leverage knowledge gained on previously conducted advanced technology demonstrations to implement a low risk solution. The fixed wing application of CAAP will be accomplished by merging with the USAF C-130 Avionics Modernization Program (AMP).
• EC-130 Obsolescence. Initiate a special mission equipment program via a pre-competed contract to identify obsolete and vanishing vendor parts replacements, maximizing use of commercial off the shelf and non-developmental items.

• MC-130H Aerial Refueling. Integrate a non-developmental item aerial refueling system onto MC-130H Talon II aircraft. The first phase of this program is Foreign Comparative Testing (FCT) of the MK 32B-902E Aerial Refueling POD. Phase II development of aircraft integration and production installations completed on a pre-competed contract with Boeing, Ft. Walton Beach, FL.
<table>
<thead>
<tr>
<th>Cost Categories</th>
<th>Contract Method &amp; Type</th>
<th>Performing Activity &amp; Location</th>
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## Exhibit R-4, Schedule Profile

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<tr>
<td>EC-130 Obsolescence</td>
<td></td>
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<tr>
<td>MC-130H Aerial Refueling Dev/Integration/Test (Phase I &amp; II)</td>
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<tr>
<td>Develop Flat Carry on Tanks</td>
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<tr>
<td>Production and Installs for Aircraft</td>
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<tr>
<td>CAAP OBESA</td>
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### Exhibit R-4a, Schedule Profile

**Appropriation/Budget Activity**
- RDT&E/7

**Program Element Number and Name**
- PE1160404BB/Special Operations Tactical Systems Development

**Project Number and Name**
- Project SF100/Aviation Systems Advance Development

<table>
<thead>
<tr>
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<tr>
<td>AC-130U P3I - SDD</td>
<td>2-4Q</td>
<td></td>
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<tr>
<td>Aviation Engineering Analysis - SDD</td>
<td>1-4Q</td>
<td>1-4Q</td>
<td>1-4Q</td>
<td>1-4Q</td>
<td>1-4Q</td>
<td>1-4Q</td>
</tr>
<tr>
<td>C-130 CAAP/USAF AMP Development/Test</td>
<td>1-4Q</td>
<td>1-4Q</td>
<td>1-4Q</td>
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<td>1-4Q</td>
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</tr>
<tr>
<td>EC-130 Obsolescence</td>
<td></td>
<td></td>
<td>1-3Q</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MC-130H Aerial Refueling Dev/Integration/Test (Phase I &amp; II)</td>
<td>1-3Q</td>
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<td>1-2Q</td>
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<tr>
<td>Develop Flat Carry on Tanks</td>
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<td></td>
</tr>
<tr>
<td>Production and Installs (MCAR)</td>
<td>1-4Q</td>
<td>1-4Q</td>
<td>1Q</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procure Flat Carry On Tanks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-4Q</td>
<td></td>
</tr>
<tr>
<td>CAAP OBESA</td>
<td>1-4Q</td>
<td>1-4Q</td>
<td>1-4Q</td>
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</table>

**Date:** FEBRUARY 2004
Exhibit R-2a, RDT&E Project Justification

Appropriation/Budget Activity

<table>
<thead>
<tr>
<th>RDT&amp;E BA # 7</th>
<th>CV-22/Project SF200</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Cost ($ in millions)</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV-22</td>
<td>32.469</td>
<td>78.610</td>
<td>75.131</td>
<td>28.811</td>
<td></td>
<td></td>
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<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

A. Mission Description and Budget Item Justification: This program provides capabilities necessary to meet Special Operations Forces (SOF) operational requirements. The CV-22 acquisition program delayed the incorporation of some operational capabilities until the completion of a Block 10 (formerly Pre-Planned Product Improvement) CV-22 program. This strategy was based on a developmental funding cap agreed to by the Department of the Navy and the USSOCOM Acquisition Executive and concerns over the technical maturity of parallel acquisition programs. Block 10 includes integrating and testing the Directional Infrared Countermeasures (DIRCM), a system to provide protection against infrared guided missiles; design and integration of the Troop Commander Situational Awareness station to provide the embarked troop commander access to the CV-22’s communication, navigation and mission management system; relocation of the ALE-47 chaff and flare dispenser control head to allow any cockpit crew member to activate defensive countermeasures; addition of a second forward firing chaff and flare dispenser to provide an adequate quantity of consumable countermeasures for the extended duration of SOF infiltration/exfiltration/resupply missions; and the incorporation of a dual access feature to the Digital Map System to allow both the pilot and copilot to independently access and control the digital map display from the mission computer. This program includes modification of an existing undelivered MV-22 to a CV-22 Additional Test Aircraft (ATA) configuration.

B. Accomplishments/Planned Program

<table>
<thead>
<tr>
<th>FY 2003</th>
<th>FY 2004</th>
<th>FY 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dev/Integration/Test of Block 10 Program</td>
<td>32.469</td>
<td>33.734</td>
</tr>
<tr>
<td>ATA Modification</td>
<td></td>
<td>37.148</td>
</tr>
<tr>
<td>RDT&amp;E Articles Quantity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FY03 Continued development, integration, and developmental testing of Block 10 capabilities; commenced ATA modification efforts.
FY04 Continue development and integration of Block 10 capabilities, to include the start of Block 10 flight testing; continue and complete ATA modification efforts.
FY05 Continue development/integration/testing of Block 10 capabilities.
### Exhibit R-2a, RDT&E Project Justification

**Date:** FEBRUARY 2004

<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
<th>FY 03</th>
<th>FY 04</th>
<th>FY 05</th>
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</thead>
<tbody>
<tr>
<td>RDT&amp;E BA # 7</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CV-22/Project SF200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Program Office Support

<table>
<thead>
<tr>
<th>RDT&amp;E Articles Quantity</th>
<th>FY 03</th>
<th>FY 04</th>
<th>FY 05</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY03</td>
<td>0.777</td>
<td>0.781</td>
<td></td>
</tr>
<tr>
<td>FY04</td>
<td></td>
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<tr>
<td>FY05</td>
<td></td>
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</tbody>
</table>

Continued program office support for Block 10 program.

#### Engineering and Logistics Support

<table>
<thead>
<tr>
<th>RDT&amp;E Articles Quantity</th>
<th>FY 03</th>
<th>FY 04</th>
<th>FY 05</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY03</td>
<td>6.578</td>
<td>6.951</td>
<td>7.300</td>
</tr>
<tr>
<td>FY04</td>
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<tr>
<td>FY05</td>
<td></td>
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</tbody>
</table>

Continued engineering and logistics support for Block 10 program.

#### Other Program Funding Summary:

<table>
<thead>
<tr>
<th>Proc, CV-22 SOF Osprey</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>Complete Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>43.449</td>
<td>114.565</td>
<td>126.083</td>
<td>122.299</td>
<td>162.419</td>
<td>200.094</td>
<td>160.305</td>
<td>Cont.</td>
</tr>
</tbody>
</table>

D. Acquisition Strategy. The CV-22 program is managed by the Navy V-22 program office (NAVAIR PMA-275). This ensures that the CV-22 changes are incorporated into the ongoing V-22 production line with minimum impact. RDT&E funding is sent from USSOCOM to PMA-275 to place on contract with the V-22 prime contractor. The RDT&E funding will be used to fund Block 10 (formerly Pre-Planned Product Improvement) development. Block 10 capability is required for full compliance with the Joint Operational Requirements Document. Funding for the baseline CV-22 Engineering Manufacturing and Development, known as Block 0, is embedded in the Navy budget.
<table>
<thead>
<tr>
<th>Cost Categories</th>
<th>Contract Method &amp; Type</th>
<th>Performing Activity &amp; Location</th>
<th>Total PY's Cost FY04</th>
<th>Budget Cost FY04</th>
<th>Award Date FY04</th>
<th>Budget Cost FY05</th>
<th>Award Date FY05</th>
<th>To Complete</th>
<th>Total Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Hardware (H/W) Dev</td>
<td>SS/CPAF</td>
<td>NAVAIR/PMA-275 &amp; Bell-Boeing, Patuxent River, MD</td>
<td>120.957</td>
<td>30.868</td>
<td>Feb-04</td>
<td>64.104</td>
<td>Feb-05</td>
<td>Cont.</td>
<td>Cont.</td>
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<tr>
<td>Additional Test Aircraft (ATA) Modification</td>
<td>SS/CPAF/IF</td>
<td>NAVAIR/PMA-275 &amp; Bell-Boeing, Patuxent River, MD</td>
<td>31.797</td>
<td>30.798</td>
<td>Jan-04</td>
<td>0.000</td>
<td>62.595</td>
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<td>Award/Incentive Fees</td>
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<td></td>
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<tr>
<td>Primary H/W Dev ATA</td>
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<td></td>
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<tr>
<td>Subtotal Product Dev</td>
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<td></td>
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</tbody>
</table>

Remarks:

| Travel and Logistics | | | 0.400 | 0.300 | Dec-03 | 0.400 | Nov-04 | Cont. | Cont. |

Remarks:

| Total Cost | 175,869 | 78,610 | 75,131 | Cont. | Cont. |
### Exhibit R-4, Schedule Profile

**Date:** FEBRUARY 2004

<table>
<thead>
<tr>
<th>Appropriation/Budget Activity</th>
<th>Program Element Number and Name</th>
<th>Project Number and Name</th>
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<tr>
<td>RDT&amp;E/7</td>
<td>PE1160404BB/Special Operations Tactical System Development</td>
<td>Project SF200/CV-22</td>
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<th>2005</th>
<th>2006</th>
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<th>2008</th>
<th>2009</th>
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<th>2011</th>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</table>

#### Acquisition Milestones

- **V-22 MS III**
- **CV-22 IOC**

#### CV-22 Block 10 Development

- **Lot 8 Deliveries (2)**
- **Lot 9 Deliveries (3)**
- **Lot 10 Deliveries (2)**
- **Lot 11 Deliveries (2)**
<table>
<thead>
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<td>CV-22 Block 10 Development</td>
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<td>1-4Q</td>
<td>1-3Q</td>
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<tr>
<td>Block 0/10 Flight Test</td>
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<td>1-4Q</td>
<td>1-3Q</td>
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<tr>
<td>CV-22 IOT&amp;E</td>
<td></td>
<td>4Q</td>
<td>1Q</td>
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<td>CV-22 Deliveries</td>
<td>3Q</td>
<td>1-3Q</td>
<td>2-4Q</td>
<td>2-3Q</td>
<td>2Q, 4Q</td>
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<tr>
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<td></td>
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</table>
A. Mission Description and Budget Item Justification:

This program element provides for the identification, development, and testing of Special Operations Forces (SOF) intelligence equipment to identify and eliminate deficiencies in providing timely intelligence to deployed forces. Sub-projects within this program element address the primary areas of intelligence dissemination, sensor systems, integrated threat warning to SOF mission platforms, and tactical exploitation of national system capabilities. USSOCOM has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities into the 21st century. USSOCOM’s C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture will employ the latest standards and technology by transitioning from separate systems to full integration with the infosphere. The infosphere will allow SOF elements to operate with any force combination in multiple environments. The intelligence programs funded in this project are grouped by the level of organizational element they support: Operational Element (Team), Above Operational Element (Deployed), and Above Operational Element (Garrison).
B. Program Change Summary:

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<th>Current President's Budget</th>
<th>Total Adjustments</th>
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<td>Congressional Program Reductions</td>
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<tr>
<td>Congressional Rescissions</td>
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<td>9.336</td>
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<td>Congressional Increases</td>
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<td>22.750</td>
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<td>Reprogrammings</td>
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<td>2.022</td>
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<tr>
<td>SBIR Transfer</td>
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<td>-0.899</td>
</tr>
</tbody>
</table>

Funding:
FY03
- Internal reprogrammings within the Command resulted in a net increase of $2.022M to this program element for the following programs:
  - $0.261M for development of the Multi-Mission Advanced Tactical Terminal program’s embedded Integrated Broadcast Service (IBS) Receiver.
  - $0.435M for development of a Digital Video Broadcast System.
  - $0.300M for completion of development of the Joint Threat Warning System Ground Signals Intelligence Kit.
  - $1.026M for development of the Special Operations Joint Interagency Collaboration Center.

FY04
- Congressional increases of $22.750M for the following programs:
  - $2.450M for the development of the Joint Threat Warning System.
  - $10.200M for the development of the Tactical Information Display.
  - $4.000M for the development of the Advanced Manpack Threat Warning and Survival System.
- $0.500M for the completion of development of the Multi-Mission Advanced Tactical Terminal program’s Embedded IBS Receiver (EIR) technology.
- $1.500M for the development of the Optimal Placement of Unattended Sensors.
- $1.600M for the development of the Special Operations Joint Interagency Collaboration Center.
- $1.750M for the development of the Covert Waveform.
- $0.750M for the development of the Integrated Survey Program.
- Funds were reduced for congressional pro rata reductions in the FY 2004 Appropriations Conference Report and for program share of Small Business Innovative Research calculation.
- OSD reprogrammed management of the Counter-proliferation Analysis and Planning System (CAPS) program from DTRA to USSOCOM beginning in FY04

FY05
- Transfer of funds from DTRA to USSOCOM ($9.398M) for CAPS.
- Funds were adjusted based on current inflation factors (-$0.062M).

Schedule: None.

Technical: The Remote Miniature Weather Station (RMWS) was moved to program element 1160404BB Special Operations Tactical Systems Development, subproject S700 Special Operations Communications Advanced Development since RMWS did not qualify as a Tactical Intelligence and Related Activities program.
### A. Mission Description and Budget Item Justification:

This project provides for the identification, development, and testing of Special Operations Forces (SOF) intelligence equipment to identify and eliminate deficiencies in providing timely intelligence to deployed forces. Sub-projects below address the primary areas of intelligence dissemination, sensor systems, integrated threat warning to SOF mission platforms, and tactical exploitation of national system capabilities. USSOCOM has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities throughout the 21st century. USSOCOM's C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture will employ the latest standards and technology by transitioning from separate systems to full integration with the infosphere. The infosphere will allow SOF elements to operate with any force combination in multiple environments. The intelligence programs funded in this project will meet annual emergent requirements and are grouped by the level of organizational element they support: Operational Element (Team), Above Operational Element (Deployed), and Above Operational Element (Garrison). Sub-projects include:

#### OPERATIONAL ELEMENT (TEAM)

- **Multi-Mission Advanced Tactical Terminal (MATT).** The MATT is an Evolutionary Acquisition (EA) program that provides threat warning, force protection, enhanced situational awareness, and target acquisition information to SOF via receipt of Integrated Broadcast Service (IBS) data. IBS data supports mission planning and execution by aiding the warfighter with course of action analysis during infiltration and exfiltration from operating areas. The MATT program will employ continuing technology updates to address the changing threat environment by integrating IBS capabilities with Command, Control, Communications, and Intelligence (C3I) systems, e.g., Tactical Local Area Network (TACLAN), Joint Threat Warning System (JTWS), Common Avionics Architecture for Penetration (CAAP)-Enhanced Situational Awareness (ESA). MATT provides globally deployed SOF with an en-route capability to receive near-real-time intelligence data on the changing threat and target environment. The deployed teams and aircrews rely heavily on near-real-time IBS information to support combat mission planning, updates, and execution, including combat search and rescue, providing threat avoidance, detection, targeting, and blue force tracking information. MATT simultaneously receives, demodulates, decrypts, filters, processes, correlates, formats, and distributes four channels of IBS intelligence data. The Briefcase MATT (BMATT) is a smaller, two-channel IBS receiver with an integrated laptop for control and data display. The next generation system will be the Embedded IBS Receiver (EIR). This will be...
available in a rugged, tactical terminal version for airborne applications (known as the Intelligence Broadcast Receiver (IBR) or as a module [known as the Embedded National Tactical Receiver (ENTR)] to embed into a variety of host systems, (e.g., TACLAN, JTWS, tactical radios).

- National Systems Support to SOF (NSSS). The NSSS is a research and development rapid prototyping program. NSSS improves the combat effectiveness of USSOCOM, its components, and the Theater Special Operations Commands by leveraging service and national agency development efforts on space-based intelligence and communications technologies and systems. This includes Imagery Intelligence, Signals Intelligence (SIGINT), and Measurement and Signature Intelligence processing and tactical display technologies and capabilities; evolving global information dominance technologies; and related meteorological, oceanographic, and space weather developments and architectures. NSSS coordinates and facilitates concepts and technologies for inclusion in Joint Chiefs of Staff Special Projects and selected Advanced Concept Technology Demonstrations (ACTDs) that use space systems to support tactical military operations.

- JTWS. JTWS is an (EA) program that provides threat warning, force protection, enhanced situational awareness, and target acquisition information to SOF via signal intercept, direction finding and SIGINT. JTWS will employ continuing technology updates to address the changing threat environment. SOF SIGINT operators are globally deployed and fully embedded within Special Operations teams and aircrews in every operational environment. The JTWS state-of-the-art technology enables these operators to provide critical time sensitive targeting and actionable intelligence to the operational commander during mission execution. Intelligence derived from JTWS operations supports campaign objectives and National Military Strategy. JTWS provides variant systems utilizing common core software that allows operators to task organize and scale equipment based on anticipated signal environments and areas of operation. Systems will be modular; lightweight with minimal power requirements; and configurable to support body worn, man-pack, team-transportable, remote unattended, air and maritime operation in Special Operations scenarios. All configurations will be capable of operation by a single trained operator. The four variants are Ground SIGINT Kit, Team Transportable, Air, and Maritime.

- Optimal Placement of Unattended Sensors (OPUS). OPUS provides for the research and integration of a commercial lightweight, modular handheld sensor interface device. This effort will provide the capability to identify the optimal placement of unattended sensors in support of SOF mission planning efforts.

ABOVE OPERATIONAL ELEMENT (DEPLOYED)
Special Operations Tactical Video System (SOTVS). The SOTVS/Reconnaissance Surveillance Target Acquisition (RSTA) program employs an evolutionary acquisition strategy to meet SOF reconnaissance and surveillance mission requirements. The program consists of a family of interoperable digital Commercial-Off-the-Shelf systems to capture and transfer near real time day/night tactical ground imagery utilizing SOF organic radios and global C4I infrastructure. These systems complement national and theater level collection efforts and facilitate decision making, mission planning and execution, and post-strike analysis. Three variants have been fielded: 1) SOTVS, a handheld digital still/video camera system consisting of two main components: a Digital Imaging Apparatus to include various lenses and night vision device; and a laptop computer with image manipulation, compression, transmission software and data controllers; 2) RSTA, a long-range remotely operated digital day/night video camera system; and 3) A digital still/video camera system with night vision capability.

ABOVE OPERATION ELEMENT (GARRISON)

SOJICC is an EA program providing a state-of-the-art collaborative center designed to synthesize operation and intelligence information supporting SOF core missions, with an emphasis on counter-terrorism, counter-proliferation, information operations, and unconventional warfare. The center fuses data from both open source and classified intelligence and operational data for use by SOF mission planners and intelligence personnel as directed by the Commander, USSOCOM. SOJICC will employ technology updates to bridge the gap between operations and intelligence to support deliberate and crisis action planning while addressing the changing threat environment.

Counter-Proliferation Analysis and Planning System (CAPS). DOD has a planning mission for counter-proliferation (CP) contingency operations. OSD has identified CAPS as the standard CP planning toolset for DOD, and the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs has consolidated RDTE funding at USSOCOM for overall program management. US Strategic Command serves as the coordinator for CAPS production requirements and provides O&M funding. Defense Threat Reduction Agency provides science and technology expertise and integration support to enhance CAPS capabilities. CAPS provides tools and assessments to DOD and SOF mission planners to aid in worldwide identification and analysis of suspected Weapons of Mass Destruction and potential targets; assesses the associated effectiveness, costs and risks of various CP options and their collateral effects; and develops alternative plans. CAPS is a primary source of CP mission planning information for Combatant Commanders who are the principal customers. CAPS requires ongoing development, integration and testing of “leading edge technology” for operational planning and processes in order to provide the best possible engineering analysis and support consequence engineering tools to meet changing threats.

Special Operations Command Research Analysis & Threat Evaluation System (SOCRATES). The SOCRATES program is a garrison
Sensitive Compartmented Information (SCI) intelligence automation architecture directly supporting the Command’s global mission by providing a seamless and interoperable interface with SOF, DOD, National, and Service intelligence information systems. It provides the capabilities to exercise command and control, planning, collection, collaboration, data processing, video mapping, a wide range of automated intelligence analysis, direction, intelligence dissemination, imagery tools and applications (to include secondary imagery dissemination) as well as news and message traffic. The program ensures intelligence support to mission planning and the intelligence preparation of the battlespace by connecting numerous data repositories while maintaining information assurance. SOCRATES supports HQ USSOCOM, its component commands, and forward based SOF units. Additionally, it provides the critical reachback for SOF tactically deployed Local Area Networks/Wide Area Networks. SOCRATES is composed of state of the art networking devices (firewalls, routers, switches, hubs, and modems), servers, storage devices, workstations, associated peripherals and Government-Off-the-Shelf/COTS software.

- Covert Waveform program is an effort to develop a new JTRS-compliant covert communication capability with embedded positive threat identification, using new Wavelet Packet Modulation technology.

- Integrated Survey Program (ISP) uses an evolutionary migration strategy to support Joint Staff contingency planning for conducting surveys on OCONUS facilities where U.S. country teams could be at risk. ISP consists of digital still and video cameras, laptops, Global Positioning Systems, rangefinders and software that are fielded to SOF units while in theater. The Digital Production System is a GOTS/COTS based system fielded to the USSOCOM Joint Intelligence Center. ISP continually develops and evaluates new intelligence systems technologies for integration to the ISP Data Collection System.

B. Accomplishments/Planned Program

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<tr>
<th></th>
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<tr>
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FY03  This initiative was a Congressional Plus-Up. Funds were used to develop a common software baseline for Embedded IBS and a Digital Embedded Broadcast Receiver Appliqué (DEBRA).
FY04  This initiative is a Congressional Plus-up. Funds will be used to complete development of DEBRA and a common software baseline for SOF systems requiring an EIR.
### NSSS SOF (NSSS)

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<thead>
<tr>
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<th>FY03</th>
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<td>1.294</td>
<td>1.338</td>
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FY03  Continued to leverage and develop space intelligence, surveillance, and reconnaissance technology developments with SOF utility from the National Community and Military Services. Continued to participate in reconnaissance/technology community programs to influence technology developments for SOF use.

FY04  Continue to leverage space intelligence, surveillance, and reconnaissance technology developments with SOF utility from the National Community and Military Services. NSSS will assess the operational utility of leveraged and developed technology.

FY05  Continue to leverage space intelligence, surveillance, and reconnaissance technology developments with SOF utility from the National Community and Military Services. NSSS will assess the operational utility of leveraged and developed technology.

### JTWS

<table>
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FY03  The bulk of this initiative was funded by a Congressional Plus-up. Continued Ground Signal Intelligence Kit (GSK) development.

FY04  The bulk of this initiative was funded by a Congressional Plus-up. Complete GSK kit development and operational testing of GSK, initiate the air variant development and conduct an Advanced Concept Technology Demonstrations (ACTD) of a Manpack Signals intelligence capability and an ACTD of a tactical wireless information display suitable for various mission profiles and requirements.

FY05  Complete air variant development.

### OPUS

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FY03  This initiative was a Congressional plus-up. Developed and demonstrated commercial technology used to identify the optimal placement of unattended sensors.

FY04  This initiative is a congressional plus-up. Continue to develop and demonstrate commercial technology used to identify the optimal placement of unattended sensors.
### FY04
Conduct future system evaluation of digital imagery to SOF tactical communication systems in support of surveillance and reconnaissance missions.

### FY05
Continue to conduct future system evaluation of digital imagery to SOF tactical communication systems in support of surveillance and reconnaissance missions.

<table>
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<tr>
<td>SOJICC</td>
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<td>CAPS</td>
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### FY03
Continued systems engineering and program management efforts to achieve data compatibility by integrating different commercial off-the-shelf hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization.

### FY04
This initiative will be partially funded by a Congressional Plus-up. Continue systems engineering and program management efforts to achieve data compatibility by integrating different commercial off-the-shelf hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization.

### FY05
Continue systems engineering and program management efforts to achieve data compatibility by integrating different commercial off-the-shelf hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization.

<table>
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<tr>
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### FY04
Supports development of the CAPS database, intelligence support procedures, Information Technology systems planning, system integration and interface control, software development, and development of analytical tools and system interfaces.

### FY05
Continues development of the CAPS database, intelligence support procedures, Information Technology systems planning, system integration and interface control, software development, and development of analytical tools and system interfaces.
<table>
<thead>
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<tr>
<td>Special Operations Intelligence/Project S400</td>
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</table>

### SOCRATES
- **FY04** Initiate efforts to develop a Multi-Level Security guard that provides the capability to automatically pass imagery and data classified SECRET and below from a TOP SECRET system to a SECRET system without manual intervention.
- **FY05** Continue efforts to develop a Multi-Level Security guard that provides the capability to automatically pass imagery and data classified SECRET and below from a TOP SECRET system to a SECRET system without manual intervention.

### Integrated Survey Program (ISP)
- **FY04** Tested and integrated candidate replacement technologies for special events. Includes red-green-blue (color) integration with Laser Identification and Ranging via the Urban Reconnaissance ACTD.

### Covert Waveform
- **FY04** This initiative is a Congressional Plus-up. Develop a new JTRS-compliant covert communication capability with embedded positive threat identification, using new Wavelet Packet Modulation technology.

### C. Other Program Funding Summary:

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<th>PROC, SOF Intelligence Systems</th>
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<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>To Complete</th>
<th>Total Cost</th>
</tr>
</thead>
</table>
D. Acquisition Strategy:

- **MATT** is an evolutionary acquisition program that will insert proven embedded Integrated Broadcast Service (IBS) receiver technologies into SOF systems/platforms requiring IBS data for a common hardware and software solution.

- **NSSS** is a project to introduce and integrate national systems capabilities into the SOF force structure and operations. NSSS activities include increasing national and commercial systems awareness, demonstrating the tactical utility of national systems and commercial data, testing technologies and evaluating operational concepts in biennial Joint Staff Special Projects, and transitioning promising concepts and technologies to other SOF program offices for execution.

- **JTWS** is an evolutionary acquisition program that provides threat warning, force protection, enhanced situational awareness, and target acquisition information to SOF via signal intercept, direction finding and Signals Intelligence (SIGINT). JTWS will employ continuing technology updates to address the changing threat environment.

- **OPUS**. Systems Readiness Center will leverage existing OPUS commercial-off-the-shelf technology to provide a capability to plan, coordinate and identify the optimal placement of unattended sensors.

- **SOTVTS** will conduct future system evaluation of digital imagery to SOF tactical communication systems in support of surveillance and reconnaissance missions for candidates of capital equipment replacement.

- **SOJICC** is an EA program providing a state-of-the-art collaborative center designed to synthesize operation and intelligence information supporting SOF core missions, with an emphasis on counter-terrorism, counter-proliferation, information operations, and unconventional warfare. The center fuses data from both open source and classified intelligence and operational data for use by SOF mission planners and intelligence personnel as directed by the Commander, USSOCOM. SOJICC will employ technology updates to bridge the gap between operations and intelligence to support deliberate and crisis action planning while addressing the changing threat environment.

- **CAPS** is an on-going developmental initiative chartered by the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Program which was transferred to USSOCOM from the Defense Threat Reduction Agency to develop, integrate and test “leading edge technology” for operational planning to provide engineering analysis and support consequence engineering tools to meet
changing threats. As such, this program will continue to depend upon on-going RDT&E funding from USSOCOM to meet these changing threats.

- SOCRATES will develop a SOF-peculiar cross-domain solution to support the seamless integration of intelligence data into mission planning and command and control capabilities in both a garrison and tactical environment. USSOCOM will leverage available funds against ongoing efforts by other government agencies to meet SOF-peculiar documented requirements.
<table>
<thead>
<tr>
<th>Cost Categories</th>
<th>Contract</th>
<th>Total</th>
<th>Budget</th>
<th>Award</th>
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<th>Award</th>
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<td>FY04</td>
<td>FY05</td>
<td>FY05</td>
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<td>(Tailor to WBS, or System/Item Requirements)</td>
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<td>FY04</td>
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Remarks:

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<th>Budget FY04</th>
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Remarks:

Total DERF 3.171

Total Cost 25.388 | 47.084 | 25.015 | Cont. Cont.
## Exhibit R-4, Schedule Profile

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<th>2006</th>
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<td>MATT EIR Development</td>
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<td>NISSS Participation in Adv Concepts Tech Demonstrations</td>
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