



# **UNITED STATES SPECIAL OPERATIONS COMMAND**

**FISCAL YEAR (FY) 2006/FY 2007**

**BUDGET ESTIMATES**

**RDT&E, DEFENSE-WIDE**

**FEBRUARY 2005**

## ***ORGANIZATIONS***

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AFSOC	Air Force Special Operations Command
NAVSPECWARCOM	Naval Special Warfare Command
TSOC	Theater Special Operations Command
USASOC	United States Army Special Operations Command
USSOCOM	United States Special Operations Command
ARSOA	Army Special Operations Aviation
160th SOAR	160th Special Operations Aviation Regiment

## ACRONYMS

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A2C2S	Army Aviation Command & Control System
ACTD	Advanced Concepts Technology Demonstration
ADRAC	Altitude Decompression Sickness Risk Assessment Computer
ADP	Automated Data Processing
AEID	Alternate Engine Installation Program
AGE	Arterial Gas Embolism
ALE	Automatic Link Establishment
ALGS	Autonomous Landing Guidance System
ALGL	Advanced Lightweight Grenade Launcher
ALLTV	All Light Level Television
AMP	Avionics Modernization Program
AO	Army Acquisition Objective
ASD	Assistant Secretary of Defense
ASDS	Advanced Sea, Air, Land Delivery System
ASE	Aircraft Survivability Equipment
ATD	Advanced Technology Demonstration
ATD/TB	AC-130U Gunship Aircrew Training Devices/Testbed
ATL	Advanced Tactical Laser
ATM	Asynchronous Transfer Mode
ATV	All Terrain Vehicle
AWE	Aircraft/Weapons/Electronics
BALCS	Body Armor Load Carriage System
BFT	Blue Force Tracking
BOIP	Basis of Issue Plan
BUD/S	Basic Underwater Demolition School
C2	Command and Control
C3I	Command, Control, Communications, and Intelligence
C4	Command, Control, Communications, and Computers
C4I	Command, Control, Communications, Computers, and Intelligence
C4IAS	Command, Control, Communications, Computers, and Intelligence Automation System
CAAP	Common Avionics Architecture for Penetration
CAAS	Common Avionics Architecture Systems
CAPS	Counter-Proliferation Analysis and Planning System

## ACRONYMS

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CBN	Chemical, Biological and Nuclear
CCD	Coherent Change Detection
CDR	Critical Design Review
CESE	Civil Engineering Support Equipment
CINC	Commander in Chief
CMS	Combat Mission Simulator
CNVD	Clip-On Night Vision Device
CNVD-I2	Image Intensified Clip-On Night Vision Device
CNVD-T	Thermal Clip-On Night Vision Device
COIL	Chemical Oxygen Iodine Laser
COMSEC	Communications Security
CONOPS	Concept of Operations
COTS	Commercial-Off-The-Shelf
COW	Cost of War
CPAF	Cost Plus Award Fee
CS	Combat Swimmer
CSAR	Combat Survivor Evader Locator
CSEL	Combat Search and Rescue
CW	Center Wing
DAMA	Demand Assured Multiple Access
DARPA	Defense Advanced Research Projects Agency
DAS	Distributed Aperture System
DCS	Decompression Sickness
DDS	Dry Deck Shelter
DERF	Defense Emergency Response Fund
DIRCM	Directional Infrared Countermeasures
DISN	Defense Information Systems Network
DHIP	Defense Human Intelligence Program
DMCS	Deployable Multi-Channel SATCOM
DMS	Defense Message System

## ACRONYMS

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DMT/DMR	Distributed Mission Training/Distributed Mission Rehearsal
EA	Evolutionary Acquisition
ECOS	Enhanced Combat Optical Sight
ECOS-CQB	Close Quarter Battle Enhanced Combat Optical Sight
ECP	Engineering Change Proposal
EDM	Engineering Development Model
EFP	Explosively Formed Penetrator
EGLM	Enhanced Grenade Launcher Module
EO/IR	Electro-Optical/Infra Red
ENTR	Embedded National Tactical Receiver
EMD	Engineering and Manufacturing Development
ESA	Enhanced Situational Awareness
ETI	Evolutionary Technology Insertion
EW	Electronic Warfare
EWAISF	Electronic Warfare Avionics Integrated Systems Facility
FAA	Federal Aviation Administration
FCD	Field Computing Devices
FCLAS	Full Spectrum Close in Active Protection
FCT	Foreign Comparative Testing
FLIR	Forward Looking Infrared Radar
FOL	Family of Loud Speakers
FW	Fixed Wing
GBS	Global Broadcasting System
GDS	Gunfire Detection System
GEO	Geological
GFE	Government Furnishment Equipment
GOTS	Government-Off-the-Shelf
GPS	Global Positioning System
GSK	Ground Signal Intelligence Kit
H-SUV	Hardened-Sport Utility Vehicle
HF	High Frequency
HFTTL	Hostile Forces, Tagging, Tracking, and Locating

## ACRONYMS

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HLA	High Level Architecture
HMMWV	High Mobility Multi-purpose Wheeled Vehicle
HPFOTD	High Power Fiber Optic Towed Decoys
HPS	Human Patient Simulator
HRLMD	Hydrographic Reconnaissance Littoral Mapping Device
HSB	High Speed Boat
HSR	Heavy Sniper Rifle
IBR	Integrated Broadcast Receiver
IBS	Integrated Broadcast Service
IDAP	Integrated Defensive Armed Penetrator
IDAS	Interactive Defensive Avionics Subsystem
IDS	Infrared Detection System
IFF	Identify Friend or Foe
ILM	Improved Limpet Mine
IMFP	Integrated Multi-Function Probe
INOD	Improved Night/Day Observation/Fire Control Device
INS	Inertial Navigation System
IOC	Initial Operational Capability
IPIM	Integrated Pointer Illuminator Module
IPT	Integrated Product Team
IR	Infrared
IRCM	Infrared Countermeasures
ISR	Intelligence Surveillance and Reconnaissance
ISSMS	Improved SOF Manpack System
ISOCA	Improved Special Operations Communications Assemblage
ITMP	Integrated Technical Management Plan
JBS	Joint Base Station
JCS	Joint Chiefs of Staff
JDISS	Joint Deployable Intelligence Support System
JMPS	Joint Mission Planning System
JSTAR	Joint Surveillance and Target Attack Radar System
JOS	Joint Operational Stocks
JTRS	Joint Tactical Radio System

## ACRONYMS

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JTWS	Joint Threat Warning System
JWICS	Joint Worldwide Intelligence Communications System
LASIK	Laser-Assisted IN-Situ Keratomileusis
LAN/WAN	Local Area Network/Wide Area Network
LASAR	Light Assault Attack Reconfigurable Simulator
LAW	Light Anti-Armored Weapons
LBJ	Low Band Jammer
LCMR	Lightweight Counter Mortar Radar
LDS	Leaflet Delivery System
LEP	Lightweight Environmental Protection
LMG	Lightweight Machine Gun
LOS	Line of Sight
LPD	Low Probability of Detection
LPI	Low Probability of Intercept
LPI/D	Low Probability of Intercept/Detection
LPI/LPD	Low Probability of Intercept/Low Probability of Detection
LRV	Lightweight Reconnaissance Vehicle
LTI	Lightweight Thermal Imager
LWC	Littoral Warfare Craft
LWCM	Lightweight Counter-Mortar
M4MOD	M4A1 SOF Carbine Accessory Kit
MAAWS	Multi-Purpose Anti-Armor/Anti-Personnel Weapons System
MARFLIR	Maritime Forward Looking Infrared Radar
MATT	Multi-mission Advanced Tactical Terminal
MBITR	Multi-Band Inter/Intra Team Radio
MBMMR	Multi-Band/Multi-Mission Radio
MCAR	MC-130 Air Refueling
MCADS	Maritime Craft Air Drop System
MELB	Mission Enhancement Little Bird
MEMS	Microelectromechanical Systems
MEP	Mission Equipment Packages
MET	Meteorological
MGS	Modular Glove System

## ACRONYMS

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MICH	Modular Integrated Communications Helmet
MMB	Miniature Multiband Beacon
MOA	Memorandum of Agreement
MONO-HUD	Monocular Head Up Display
MPARE	Mission Planning, Analysis, Rehearsal and Execution
MPC	Media Production Center
MPK	Mission Planning Kits
MRD	Mission Rehearsal Device
MUAV	Maritime Unmanned Aerial Vehicle
NAVSCIATTS	Naval Small Craft Instructor and Technical Training School
NBC	Nuclear, Biological, and Chemical
NBOE	Non-Gasoline Burning Outboard Engine
NDI	Non-Developmental Item
NOD	Night Observation Device
NOSC	Network Operations Systems Center
NSSS	National Systems Support to SOF
NSW	Naval Special Warfare
NVD	Night Vision Devices
NVEO	Night Vision Electro-Optic
OA/CW	Obstacle Avoidance/Cable Warning
OBESA	On-Board Enhanced Situational Awareness
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OMB	Office of Management and Budget
OMMS	Organizational Maintenance Manual Sets
OPEVAL	Operational Evaluation
OPUS	Optimal Placement of Unattended Sensors
ORD	Operational Requirements Document
OT&E	Operational Test and Evaluation
QOT&E	Qualification Test and Evaluation/Qualification Operational Test and Evaluation
P3I	Pre-Planned Product Improvement
PAM	Penetration Augmented Munition
PARD	Passive Acoustic Reflection Device



## ACRONYMS

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PC	Personal Computer
PC	Patrol Coastal
PCU	Protective Uniform
PDR	Preliminary Design Review
PDS	Psychological Operations Distribution System
PDM	Program Decision Memorandum
PFPS	Portable Flight Planning System
PGCB	Precision Guided Canister Bomb
PIVOT	Pivoting Observation Turret System
PLTD	Precision Laser Targeting Device
PM	Program Manager
PM-MCD	Project Manager for Mines, Countermeasures and Demolitions
POBS	PSYOP Broadcasting System
PPHE	Pre-fragmented Programmable High Explosive
PSYOP	Psychological Operations
PTLD	Precision Target Locator Designator
RAA	Required Assets Available
RAMS	Remote Activated Munitions System
RIB	Rigid Inflatable Boat
RMWS	Remote Miniature Weather System
RPG	Rocket Propelled Grenade
RPUAV	Rucksack Portable Unmanned Aerial Vehicle
RSTA	Reconnaissance Surveillance Target Acquisition
RW	Rotary Wing
SAFC	Special Applications for Contingencies
SAHRV	Semi-Autonomous Hydrographic Reconnaissance Vehicle
SATCOM	Satellite Communication
SBUD	Simulator Block Upgrade
SCAR	SOF Combat Assault Rifle
SCI	Sensitive Compartmented Information
SBIR	Small Business Innovative Research
SBR	System Baseline Review
SDS	Sniper Detection System

## ACRONYMS

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SDV	Sea, Air, Land (SEAL) Delivery Vehicle
SEAL	Sea, Air, Land
SIGINT	Signals Intelligence
SIPE	Swimming Induced Pulmonary Edema
SIRFC	Suite of Integrated Radar Frequency Countermeasures
SIRCM	Suite of Infrared Countermeasures
SLAM	Selectable Lightweight Attack Munition
SLEP	Service Life Extension Program
SMAX	SOCOM Multipurpose Antenna X-Band
SMG	SOF Machine Gun
SMRS	Special Mission Radio System
SO	Special Operations
SOC	Special Operations Craft
SOC	Special Operations Command
SOC-R	Special Operations Craft-Riverine
SOCRATES	Special Operations Command, Research, Analysis and Threat Evaluation System
SOF	Special Operations Forces
SOFDK	SOF Demolition Kit
SOFIV	SOF Intelligence Vehicle
SOFPARS	SOF Planning and Rehearsal System
SOFTAPS	SOF Tactical Advanced Parachute System
SOFTACS	SOF Tactical Assured Connectivity System
SOFTS	SOF Teletraining Systems
SOJICC	Special Operations Joint Interagency Collaboration Center
SOLL	Special Operations Low Level
SOMROV	Special Operations Miniature Robotic Vehicle
SOMS-B	Special Operations Media Systems B
SOPMOD	SOF Peculiar Modification
SOPMODM-4	SOF Peculiar Modification-M4 Carbine
SOST	Special Operations Special Technology
SOTD	Special Operations Technology Development
SOTVS	Special Operations Tactical Video System
SPEAR	SOF Personal Equipment Advanced Requirements

## ACRONYMS

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SPIKE	Shoulder Fired Smart Round
SRC	Systems Readiness Center
SRC	Special Reconnaissance Capabilities
SSAR	Solid State Synthetic Aperture Radar
START	Special Threat Awareness receiver/Transmitter
STD	Swimmer Transport Device
SYDET	Sympathetic Detonator
TACLAN	Tactical Local Area Network
TCCC	Tactical Combat Casualty Care
TDFD	Time Delay Firing Device
TEI	Technology Exploitation Initiative
TF/TA	Terrain Following/Terrain Avoidance
TRS	Tactical Radio System
TTHM	Titanium Tilting Helmet Mount
TTNM	Tilting Titanium Nod Mounts
UARRSI	Universal Aerial Refueling Receptacle Slipaway
UAV	Unmanned Aerial Vehicle
UBA	Underwater Breathing Apparatus
UHF	Ultra High Frequency
UK	United Kingdom
US	United States
VBL III	Third Generation Visible Bright Lights
VESTA	Vibro-Electronic Signature Target Analysis
VHF	Very High Frequency
VSWMCM	Very Shallow Water Mine Countermeasures
VTC	Video Teleconferencing
WIRED	Wind Tunnel Integrated Real Time In the Cockpit/Real Time Out of the Cockpit Experiments and Demonstrations
WMD	Weapons of Mass Destruction
WSADS	Wind Supported Air Delivery System

SPECIAL OPERATIONS COMMAND RDT&E PROGRAM

Appropriation: 0400 Research Development Test & Evaluation Defense-Wide

TOA, \$ in Millions

<u>R-1</u>	<u>Program Element #</u>	<u>Item</u>	<u>Budget Activity</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>
23	1160401BB	Spec Operations Technology Development	2	18.875	14.972	13.595
24	1160407BB	SOF Medical Technology Development	2	5.517	2.071	2.215
62	1160402BB	Spec Operations Advanced Technology Development	3	109.800	99.682	104.315
160	0301318BB	Humint <sup>2</sup>	7			
162	0301555BB	Classified Programs <sup>2</sup>	7			
163	0301556BB	Special Programs <sup>2</sup>	7			
178	0304210BB	Special Applications for Contingencies	7	23.657	21.527	21.116
206	1160279BB	Small Business Innovative Research	7	13.481	12.926	
207	1160403BB	Spec Operations Aviation Systems Advanced Development <sup>3</sup>	7		82.398	104.330
208	1160404BB	Spec Operations Tactical Systems Development	7	296.173	70.726	63.513
209	1160405BB	Spec Operations Intelligence Systems Development	7	46.680	49.373	33.167
210	1160408BB	SOF Operational Enhancements <sup>1</sup>	7	79.114	81.350	66.313
211	1160421BB	Spec Operations CV-22 Development <sup>3</sup>	7		62.806	29.954
212	1160425BB	Spec Operations Aircraft Defensive Systems <sup>3</sup>	7		55.622	38.824
213	1160426BB	Advanced SEAL Delivery System (ASDS) Development <sup>3</sup>	7		19.072	2.040

<sup>1</sup> - Details are classified and will be provided under separate cover.

<sup>2</sup> - Funding levels and details are classified and will be provided under separate cover.

<sup>3</sup>- As directed by Congress, this is a new program element that was established beginning in FY 2005. FY 2005-2011 resources were moved from PE 1160404BB.

**Total Special Operations Command:**

**593.297**

**574.886**

**481.474**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 2			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development							

COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160401BB	18.875	14.972	13.595	12.520	11.217	11.466	11.721	11.985	Cont.	Cont.
S100, SO TECHNOLOGY BASE DEV	18.875	14.972	13.595	12.520	11.217	11.466	11.721	11.985	Cont.	Cont.

**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:**

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Previous President's Budget	19.274	13.109	13.710	14.440
Current President's Budget	18.875	14.972	13.595	12.520
Total Adjustments	-0.399	1.863	-0.115	-1.920
Congressional Program Reductions		-0.290		
Congressional Increases		2.500		
Reprogrammings	-0.399		-0.115	-1.920
SBIR Transfer		-0.347		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 2	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development	
<p>FY04: Decrease reflects USSOCOM realignment of resources to support higher command priorities. (-\$.399M)</p> <p>FY05: Reflects Congressionally added program as follows: -SPIKE (\$2.500) Decrease reflects Congressional reductions (-\$.290M) -SBIR (-\$.347M)</p> <p>FY06: Decrease reflects USSOCOM realignment of resources to support higher command priorities. (-\$.400M) Increase based on current inflation factors. (+.285M)</p> <p>FY07: Decrease reflects USSOCOM realignment of resources to support higher command priorities. (-\$1.920M) Increase based on current inflation factors. (+.297M)</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

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

Date: FEBRUARY 2005

Appropriation/Budget Activity  
RDT&E BA # 2

Special Operations Technology Development/Project S100

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SOF Technology Base Development	18.875	14.972	13.595	12.520	11.217	11.466	11.721	11.985
RDT&E Articles Quantity								

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.

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100

- SOF Sustainment/Warrior 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).



		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>			Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 2					Special Operations Technology Development/Project S100

<b>B. Accomplishments/Planned Program</b>				
	FY04	FY05	FY06	FY07
SOF Command, Control, Communications, Computers, and Intelligence (C4I) Technologies.	2.350	2.896	2.172	2.171
RDT&E Articles Quantity				
<p>FY04 Continued development of FY03 efforts. Continued Color Night Vision-Polarimetry, Undersea Master Communications Node, and Enhanced Situational Awareness. Initiated Antenna Enhancements and Small Hand-held Night Vision Devices.</p> <p>FY05 Continue development of FY04 efforts. Initiate illumination/reflective technologies for tagging, tracking and locating.</p> <p>FY06 Continue development of FY05 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. Initiate Increased Standoff Tagging, Tracking and Locating, Rapid Maritime Identification and Tracking System, and High Bandwidth Communications via Ka-band.</p> <p>FY07 Continue development of FY06 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.</p>				
	FY04	FY05	FY06	FY07
SOF Mobility Technologies	2.161	3.200	2.160	2.300
RDT&E Articles Quantity				
<p>FY04 Continued development of FY03 efforts. Continued Night Vision Windshield and Small Versatile Maritime Mobility Craft. Initiated implementation of Hyperstereopsis for Improved Target Identification on AC-130 Gunships and Maritime Shock Mitigation. Completed Tactile Situational Awareness System.</p> <p>FY05 Continue development of FY04 efforts. Initiate Enhanced Hostile Detection Capability for SOF Combatant Craft (river application) and Ground Vehicle Day/Night Sensor.</p> <p>FY06 Continue development of FY05 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. Initiate alternative power systems, and Combatant Craft Full Mission Simulator.</p> <p>FY07 Continue development of FY06 efforts. Continue to exploit technologies to improve the performance and survivability, and reduce the</p>				

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>			Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100	

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.

	FY04	FY05	FY06	FY07
SOF Weapons Technologies	.874	1.855	1.500	1.400
RDT&E Articles Quantity				

FY04 Continued development of FY03 efforts. Continued Universal Initiator. Completed SOF Demolitions Kit Enhancements.  
 FY05 Continue development of FY04 efforts. Initiate Hostile Fire Detection and Defeating Systems.  
 FY06 Continue development of FY05 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. Initiate Small Craft Defensive Capability.  
 FY07 Continue development of FY06 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.

	FY04	FY05	FY06	FY07
SOF Sustainment/Warrior Technologies	1.362	1.655	1.527	1.522
RDT&E Articles Quantity				

FY04 Continued development of FY03 efforts. Continued GEO Survey Kit and Fast Rope for CV-22. Initiated the Special Reconnaissance Simulator.  
 FY05 Continue development of FY04 efforts. Initiate Advanced Composite Ballistic Protection for Combatant Craft.  
 FY06 Continue development of FY05 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. Initiate Smart Rechargeables for SOF Power Management.  
 FY07 Continue development of FY06 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.

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>			Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100	

	FY04	FY05	FY06	FY07
Concept Exploration Studies	.667	.814	.787	.839
RDT&E Articles Quantity				
FY04 Continued to conduct concept studies to explore/validate projects which support USSOCOM desired operational capabilities. Initiated SOF Hostile Detection Technology Study. FY05 Continue to conduct concept studies to explore/validate projects which support USSOCOM desired operational capabilities. FY06 Continue to conduct concept studies to explore/validate projects which support USSOCOM desired operational capabilities. FY07 Continue to conduct concept studies to explore/validate projects which support USSOCOM desired operational capabilities.				
	FY04	FY05	FY06	FY07
Technology Development Exploitation	.418	.625	.600	.638
RDT&E Articles Quantity				
FY04 Continued to exploit technologies to meet critical SOF capability objectives. Continued Technology Roadmaps for technology thrust areas. Initiated a study to evaluate a new and revolutionary flameproof textile material. FY05 Continue to exploit technologies to meet critical SOF capability objectives. Continue Technology Roadmaps for technology thrust areas. FY06 Continue to exploit technologies to meet critical SOF capability objectives. Continue Technology Roadmaps for technology thrust areas.				
	FY04	FY05	FY06	FY07
Classified	1.206	1.531	2.049	2.150
RDT&E Articles Quantity				
FY04 Details provided under separate cover. FY05 Details provided under separate cover. FY06 Details provided under separate cover. FY07 Details provided under separate cover.				
	FY04	FY05	FY06	FY07
SPIKE Urban Warfare System	2.886	2.396		
RDT&E Articles Quantity				
FY04. This initiative was a congressional plus-up. Completed development of technologies for SPIKE and refine the guidance system for more accurate prosecution of hardened targets. Completed the refine target tracking sub-system and warhead development.				

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>			Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 2					Special Operations Technology Development/Project S100

FY05 Initiate precision guided missile tests. Full integration of flight-worthy tracker algorithms.				
	FY04	FY05	FY06	FY07
Sensors for Autonomous Navigation	2.454			
RDT&E Articles Quantity				
FY04 This initiative was a congressional plus-up. Demonstrated a sensor suite for autonomous vehicle navigation across difficult terrain, both day and night, and in a wide range of environmental conditions.				
	FY04	FY05	FY06	FY07
Automated Assembly of Electro-Optic Sensors and Devices	2.454			
RDT&E Articles Quantity				
FY04 This initiative was a congressional plus-up. Improved design of components and assembly of electro-optic devices for robotic assemblies to reduce cost and enhance performance.				
	FY04	FY05	FY06	FY07
Image Fusion Common Aperture Systems Development	2.043			
RDT&E Articles Quantity				
FY04 This initiative was a congressional plus-up. This development effort is the first common aperture which allows a natural bore sight for the dual band systems (intensified and thermal).				
	FY04	FY05	FY06	FY07
SOF Mobility Technologies			2.800	1.500
RDT&E Articles Quantity				
FY06 Program funding provides for initial studies, analysis, market research and investigation of new and existing technologies needed to replace the MK V SOC. FY07 Program funding provides for follow-on studies, analysis, market research and investigation of new and new and existing technologies needed to replace the MK V SOC.				

	<b>Exhibit R-2a, RDT&amp;E Project Justification</b>			Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100

C. Other Program Funding Summary: None.

D. Acquisition Strategy: N/A.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2005
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 2	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB Special Operations Forces (SOF) Medical Technology Development
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COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160407BB	5.517	2.071	2.215	2.261	2.353	2.428	2.504	2.583	Cont.	Cont.
S275, SOF MEDICAL TECHNOLOGY	5.517	2.071	2.215	2.261	2.353	2.428	2.504	2.583	Cont.	Cont.

**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, psychological, 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:**

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Previous President's Budget	5.182	2.162	2.171	2.211
Current President's Budget	5.517	2.071	2.215	2.261
Total Adjustments	0.335	-0.091	0.044	0.050
Congressional Program Reductions		-0.043		
Congressional Increases				
Reprogrammings	0.335		0.044	0.050
SBIR Transfer		-0.048		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 2	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB Special Operations Forces (SOF) Medical Technology Development	
<p>Funding:</p> <p>FY04 - Increase is a result of funds reprogrammed to support increased requirement for ongoing studies.</p> <p>FY05 - Decrease reflects SBIR (-\$0.048M) and Sectionals 8095, 8122. and 8135 (-\$0.043M).</p> <p>FY06 - Increase based on current inflation factors (+\$.044M)</p> <p>FY07 - Increase based on current inflation factors (+\$.050M)</p> <p>Schedule: N/A.</p> <p>Technical: N/A.</p>		

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

Date: FEBRUARY 2005

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RDT&E BA # 2

SOF Medical Technology/Project S275

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SOF Medical Technology	5.517	2.071	2.215	2.261	2.353	2.428	2.504	2.583
RDT&E Articles Quantity								

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; (3) apply lessons learned from recent combat operations to enhance medical capabilities; and (4) develop CD-ROM and internet compatible automated programs to provide the capability to perform medical interviews in multiple foreign languages and support SOF medical personnel information needs while operating in austere locations.
- Decompression procedures for SOF diving operations will: (1) decrease the decompression obligation in SOF diving operations through the use of surface-interval oxygen breathing; (2) provide the basis for extended mission profiles; and (3) investigate pre-oxygenation requirements for high-altitude SOF parachute operations, as well as ground operations at extreme altitudes.
- 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.



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

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SOF Medical Technology/Project S275

- Medical sustainment training techniques will: (1) examine novel ways of providing and documenting medical sustainment training for SOF corpsmen and physicians; (2) provide capabilities to rapidly develop new protocol and equipment instructions; and (3) develop a system for constantly upgrading the 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 research into various ensemble clothing and devices that may potentially enhance SOF operator 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) study interfaces of new vision devices with refractive vision enhancements; and (6) study pharmacologic measures to prevent acute mountain sickness in high altitude SOF air and ground operations.

**B. Accomplishments/Planned Program**

	FY04	FY05	FY06	FY07
Ongoing Studies	1.571	.771	.884	.903
RDT&E Articles Quantity				

FY04 Completed ongoing studies as follows: Effects of Post-Stress Carbohydrate Administration on Recovery, Treatment Standards for Decompression Sickness (DCS)/Arterial Gas Embolism (AGE), Bronchoalveolar Lavage in Swimming Induced Pulmonary Edema (SIPE), Advanced Sea, Air, Land Delivery System (ASDS)/Underwater Breathing Apparatus (UBA), SOF Mission Related Performance Measures Upgrade, Effects of Low-Grade Hypoxia at Night in SOF Aircraft Operations, Stress Fractures in BUD/S Training, and Polymer Splint. Continued ongoing studies as follows: Evaluation of HydroTech Aqua Heat System during SEAL Delivery Vehicle (SDV) Operations, Medical Support of High Speed Boat (HSB) Shock Mitigation, Computer-Assisted Thermal Protection Training in SOF, Hypoxic Exposures to Improve Performance at Altitude, SOF Performance Enhancing Drug Protocols, Cold Sterilization, Development of Algorithms for Remote Triage, Decompression Computer Diving Surveillance and Configuration Management Program, Tympanic Membrane Injuries, Evaluation of Nasal Ketamine for Pain Control, Comparison of Wavefront-Guided Photo-Refractive Keratectomy (PRK) and LASIK/LASER Epithelial Keratomileusis (LASEK), and Tactical Combat Casualty Care (TCCC) Technology Transition Initiative.

FY05 Complete ongoing studies as follows: Evaluation of HydroTech Aqua Heat System during SDV operations, Medical support of HSB Shock Mitigation, Computer-Assisted Thermal Protection Training in SOF, Decompression Computer Diving Surveillance and Configuration Management Program, Tympanic Membrane Injuries, Evaluation of Nasal Ketamine for Pain Control, and Comparison of Wavefront-Guided

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

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SOF Medical Technology/Project S275

RK and LASEK. Continue ongoing studies as follows: Hypoxic Exposures to Improve Performance at Altitude, SOF Performance Enhancing Drug Protocols, Cold Sterilization, Development of Algorithms for Remote Triage, and TCCC Technology Transition Initiative.

FY06 Complete ongoing studies as follows: Hypoxic Exposures to Improve Performance at Altitude, SOF Performance Enhancing Drug Protocols, Development of Algorithms for Remote Triage, Protocols and Techniques for New Equipment and Technologies within SOF, Prevention of Motion Sickness in SOF Operations, SOF Medical Training Presentations, and Evaluation of Surfactant® in the Treatment of Eustachian Tube Dysfunction and Middle Ear Squeezes. Continue ongoing studies as follows: Cold Sterilization, Visual Aberration in Post-Corneal Refractive Surgery Patients Using Panoramic Night Vision Goggles, Toxicity of Compounds Released During SOF Breaching Evolutions, and TCCC Technology Transition Initiative.

FY07 Complete ongoing studies as follows: Cold Sterilization, Visual Aberration in Post-Corneal Refractive Surgery Patients Using Panoramic Night Vision Goggles, Toxicity of Compounds Released during SOF Breaching Evolutions, and TCCC Technology Transition Initiative.

	FY04	FY05	FY06	FY07
New Studies	.674	1.300	1.331	1.358
RDT&E Articles Quantity				

FY04 Initiated new studies as follows: TCCC Technology Transition Initiative.

FY05 Initiate new studies as follows: Protocols and Techniques for New Equipment and Technologies within SOF, Prevention of Motion Sickness in SOF Operations, SOF Medical Training Presentations, Visual Aberration in Post-Corneal Refractive Surgery Patients Using Panoramic Night Vision Goggles, Evaluation of Surfactant® in Treatment of Eustachian Tube Dysfunction and Middle Ear Squeezes, and Toxicity of Compounds Released During SOF Breaching Evolutions. Complete new studies as follows: Efficacy of Oxygen Administration in the CASEVAC Phase of TCCC.

FY06 Initiate new studies as follows: Card Diagnostics, Tourniquets, Disease Non-Battle Injury Capability, Risk Factors for Musculoskeletal Impairments, Assess Mission Optimal Nutrient/Fluid Requirements, Rapid Identification of Chemical/Biological Hazards, Hyper and Hypobaric Studies, Fluid Resuscitation Studies, Medical Mission Analysis, and Patient Warming/Cooling Techniques.

FY07 Initiate new studies as follows: Patient Recovery/Location, Mission/Load Performance Factors, Ergogenics and Ergonomics, Identification of Preventable Injuries and Diseases, Develop Mission Essential Elements for Enroute Care, Update SOF/Joint Medical Doctrine and Procedures, Patient Visibility, Medical Regulating and Evacuation, Operational/Performance in Adverse Environment Studies, Barrier Cream and Topical Protectants, Alternative Field Medications.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005		
Appropriation/Budget Activity RDT&E BA # 2		SOF Medical Technology/Project S275		

	FY04	FY05	FY06	FY07
Rebreather	3.272			
RDT&E Articles Quantity				

FY04 This initiative was a Congressional Plus-up. Continued development of underlying technologies that will support the Advanced Technology underwater breathing apparatus project.

C. Other Program Funding Summary. None.

D. Acquisition Strategy. N/A.

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 3	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations (SO) Advanced Technology Development
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COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160402BB	109.800	99.689	104.315	91.459	108.874	91.530	86.495	57.681	Cont.	Cont.
S200, SO SPECIAL TECHNOLOGY	109.800	99.689	104.315	91.459	108.874	91.530	86.495	57.681	Cont.	Cont.

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

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

**B. Program Change Summary:**

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

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 3	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations (SO) Advanced Technology Development	
<p>Funding:</p> <p>FY04</p> <ul style="list-style-type: none"> <li>- Net increase reflects \$.968 million Congressional add for the Long Range Target Biometric ID program that was transferred from the Army and (\$3.810) million that was reprogrammed to the Gunship ACTD and a net decrease of (\$0.298) that was reprogrammed to higher command priorities.</li> </ul> <p>FY05 Reflects \$59.100 for Congressionally added programs as follows:</p> <ul style="list-style-type: none"> <li>- Snapshot Synthetic Aperture Radar (\$1.000)</li> <li>- Battery-Free Remote Sensing (\$1.500)</li> <li>- Surveillance Augmentation Vehicle (\$1.000)</li> <li>- Remote Video Weapon Site (\$1.700)</li> <li>- Advanced Multi-Purpose Micro Display System (\$1.500)</li> <li>- Compact Three-Dimensional Imaging (\$1.000)</li> <li>- Angelfire Active Protection (\$7.000)</li> <li>- Long Range Biometric Target ID System (\$2.000)</li> <li>- Autonomous Navigation Sensor Suite (\$1.300)</li> <li>- Foliage Penetrating Solid State Synthetic Radar (\$5.100)</li> <li>- ID Friend or FOE (IFF) Advance Target (\$1.300)</li> <li>- MK V Patrol Replacement Craft (\$2.500)</li> <li>- SOF Exp Technology Integration (\$2.000)</li> <li>- SOF Rotary Wing UAV (\$22.000)</li> <li>- Maritime Tagging, Tracking and Locking (\$1.000)</li> <li>- Foreign Language Translator (\$1.400)</li> <li>- SMAX (\$1.700)</li> </ul>		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 3	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations (SO) Advanced Technology Development	
<p>- SOF Teletraining System (\$1.000)</p> <p>- TACTICOMP (\$1.400)</p> <p>- Land and Sea Operational Mobility System (\$1.700)</p> <p>Congressional Sectionals decrease (\$2.013)</p> <p>Reprogrammed from the Gunship ACTD (\$3.810)</p> <p>FY06</p> <p>- Increase reflects additional funds required to begin the flight test of the Advanced Tactical Laser (ATL) Advanced Concept Technology Demonstration (ACTD) System and to begin to evaluate the use of the Viper Strike munitions for the AC-103 Gunship.</p> <p>FY07</p> <p>- Increase reflects additional funds required to complete the ATL ACTD flight tests, to begin acquiring the operational Spiral 1 ATL weapon system, and to continue to develop and adapt the Viper Strike munitions.</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

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

Date: February 2005

Appropriation/Budget Activity RDT&E BA # 3	Special Operations Special Technology Project S200
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Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Special Operations Special Technology	109.800	99.689	104.315	91.459	108.874	91.530	86.495	57.681
RDT&E Articles Quantity								

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

- SOF Command, Control, Communications, Computers, and Intelligence (C4I) ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Exploit emerging technologies to conduct ATDs that provide SOF with increased sensory performance. Exploit emerging technologies to locate and track targets or items of interest. Exploit emerging technologies to produce new and improved capabilities in information operations and psychological operations.
- SOF Mobility ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with survivable mobility capabilities in high threat areas and with enhanced situational awareness. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms.
- SOF Weapons ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy. Demonstrate capabilities of smart munitions and fire-and-forget capability. Exploit technologies to increase standoff from threat weapons systems. Decrease cost and logistic support requirements for SOF weapons systems.
- SOF Sustainment/Warrior ATDs. Exploit emerging technologies to conduct ATDs that provide SOF with increased survivability and performance. Exploit emerging technologies to counter the threat of electro-optical devices and devices that detect human presence, and to enhance individual operator capabilities.

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- Technology Exploitation Initiative. Exploit emerging technologies to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.
- Advanced Tactical Laser (ATL) Advanced Concept Technology Demonstration (ACTD). The ATL ACTD was started in FY 02 through funding provided by DUSD (AS&C) and the Joint Non-Lethal Weapons Directorate. The intent of the ATL ACTD is to evaluate the military utility of a tactical directed energy weapon on the battlefield to provide direct support to the warfighter. A directed energy weapon has an inherent performance capability (i.e., extremely precise covert strike, selectable effects and lethality, multi-axis engagement) that has the potential to enhance the effectiveness of SOF operators. The ATL ACTD will develop and employ a modular, high-energy laser weapon system on a C-130 platform, capable of conducting ultra-precision strike engagements to enhance mission accomplishment of the warfighter and conduct a military utility assessment of this weapon system. The steps toward assessing the military utility of a high-energy laser weapon are:
  - a. Demonstrate weaponization of the sealed-exhaust Chemical Oxygen Iodine Laser in a modular system, capable of employment on a C-130.
  - b. Demonstrate the ability to acquire and engage tactical targets in an air-to-ground system test.
  - c. Utilize joint/service exercises to the fullest extent possible, focusing on matching the objectives of the ACTD with those of the desired exercises and demonstrations.

At the completion of the ACTD, leave behind one fully-operational laser system consisting of the laser and beam director, surveillance and acquisition sensors to support employment of the laser system, software, an operator workstation and portable ground support equipment. The system will include documentation required to operate and maintain the ATL system.
- Psychological Operations (PSYOP) “Global Reach” ACTD. Seeks technologies which will transform current PSYOP capabilities through two major objectives: 1) extension of PSYOP product dissemination to reach target audiences in denied areas at a range up to 800 Nautical Miles (NM), and 2) automation (software and hardware) of the PSYOP planning and analysis process.
- PSYOP Modernization. This initiative will explore emergent technologies available in the marketplace to modernize the PSYOP Broadcast System (POBS) and the PSYOP Print System (PPS).
- Special Operations Precision Guided Munition. This initiative will evaluate the use of Viper Strike munitions to provide enhanced capability for the AC-130 Gunship.



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

- Land and Sea Special Operations (LASSO) Mobility System. Design, integrate, build and evaluate advanced soldier mobility and rural terrain vehicle prototypes.
- Remote Sensor Power Source. Battery-free system to provide long-term, reliable power for a variety of remote sensors and other remote operations that support command and control.
- Foreign Language Translator. Enhancement of voice command function, integrate versatile headset capability and develop an operator level capability to build mission specific translations
- Snapshot Synthetic Aperture Radar. Demonstrate a radar array processor fabricated from COTS micro-processors.
- ANGELFIRE Active Protection. Investigate, develop and demonstrate prototype system, for Full-Spectrum, Close-in Active Protection (FCLAS) that will protect SOF assets from Rocket Propelled Grenades (RPGs) using counter-munitions
- Surveillance Augmentation Vehicle. Integrate Ultra wide band intrusion detection sensors that can be deployed to provide an ad-hoc network for image / data / voice communications and will also provide the ability to cordon an area to protect and monitor any intrusions or device tampering
- Remote Video Weapon Site. A Phase III SBIR contract will be awarded with these funds for the continued development.
- Advanced Multi-Purpose Micro-Display System. This effort will integrate highly efficient display component technology into several SOF applications
- SOF Experimental Technology Integration. Develop and demonstrate a prototype integrated system to support Special Operations Forces (SOF) unique missions in low to moderate threat environments.
  - Mark V Patrol Boat Replacement Craft Prototype. Develop composite combatant craft design/fabrication techniques
  - TACTICOMP. This effort integrates laser range-finding and precision inertial navigation into commercial PDAs

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- Foliage Penetrating Solid State Synthetic Aperture Radar. The intent is to develop and demonstrate on an RC-12M aircraft a purpose-built radar to detect and identify buried objects.
- Maritime Tagging, Tracking & Locating. Demonstrates and evaluates available technologies to support and enable SOF maritime tagging, tracking and locating capabilities.
- Autonomous Navigation Sensor Suite. Sensor development program coupled with laboratory evaluation of unique sensors types for robotic vehicles.
- Compact Three-Dimensional Imaging. Provide robust target identification capability, develop technology for individual user to interpret and take advantage of 3D imaging.
- SOF Teletraining. Special Operations Forces Teletraining System (SOFTS) is a means of delivering training using personal computers and broadband internet connections
- Rotary Wing Unmanned Aerial Vehicle (UAV). Enhance intelligence gathering and dissemination capabilities for urban and complex terrain environments.
- Affordable Access to Night Vision Equipment (NVE). Provide calibration, standardization and characterization of night vision capabilities to the SOF Community.
- Dual Band Universal Night Sight (DUNS). Demonstrate integrated image and long-wave infrared fused system within the same aperture.
- Light Reconnaissance Vehicle. Develop and validate system concept for a family of SOF reconnaissance vehicles incorporating integrated local and global networks linked to other manned and unmanned platforms, and C4I architectures.
- SOF Unmanned Vehicle Technology Integration. Support unmanned vehicle development and integration efforts at the Prototype Maintenance Facility supporting USSOCOM projects.
- Special All Terrain Vehicle. Obtain and modify commercial personal mobility vehicles that incorporate commercially available diesel

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

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Special Operations Special Technology Project S200

engines.

- **Advanced Target Identification.** Explore vibroelectronic signature target analysis and passive acoustic reflective device technologies for AC-130U Gunship target acquisition capabilities.
- **Dominant Vision.** Explore advanced situational awareness and fusion technologies for enhancement of various platforms' ability to navigate and identify targets through adverse weather and obscured visual situations.
- **Naval Special Warfare (NSW) Craft.** Explore technologies to support future combatant craft development.
- **Synthetic Aperture Radar Millimeter Forward Looking Infrared Radar (FLIR).** Provide a ground map plan position indicator view that can be changed to a high resolution image using synthetic aperture radar techniques.
- **SOCOM Multipurpose Antenna, X-Band (SMAX).** Provide a low profile, hybrid steered antenna for easy mounting on a C-130 or CV-22.
- **Long Range Biometric Target Identification System.** Provide a deployable system to positively identify personnel, in all light conditions, at ranges beyond 500 meters.

**B. Accomplishments/Planned Program**

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

FY04 Continued the development and evaluation of FY03 efforts. Continued Night Vision Electro-Optic Enhancements, Low Probability of Intercept/Detection (LPI/D) Imagery Forwarding, Tactical Personal Computer, Antenna Enhancements, Communications for Robotics, and Tactical Systems Specific Emitter ID.

FY05 Continue development and evaluation of FY04 efforts. Initiate SATCOM LPI/LPD with lightweight tracking antenna and two-way broadband satellite and multimedia service.

FY06 Continue development and evaluation of FY05 efforts. Continue to exploit emerging technologies to conduct ATD that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Continue to exploit emerging technologies to conduct ATDs that provide SOF with increased

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

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

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

FY04 Continued development and evaluation of FY03 efforts. Continued SOF Robotics and Conformal Load Bearing Antenna. Completed Sea, Air, Land Delivery Vehicle Airdrop.

FY05 Continue development and evaluation of FY04 efforts. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms.

FY06 Continue development and evaluation of FY05 efforts. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms. Initiate Miniature Inertial Navigation Underwater, Virtual Display for Combatant Craft.

FY07 Continue development and evaluation of FY06 efforts. Exploit emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms.

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

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

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Completed Anti-Material Payload Rifle.  
 FY05 Continue development and evaluation of FY04 efforts. Initiate Enhanced Signature Suppression for lightweight machine guns and Enhanced Performance long range ammunition.  
 FY06 Continue development and evaluation of FY05 efforts. Continue to exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy. Exploit technologies to increase standoff from threat weapons systems. Decrease cost and logistic support requirements for SOF weapons systems. Initiate SOF Combat Assault Rifle Technology.  
 FY07 Continue development and evaluation of FY06 efforts. Continue to exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy.

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

FY04 Continued development and evaluation of FY03 efforts. Continued Intrusion Sensor System, Military Free Fall Advanced Navigation System and Battery Recharging System. Initiated development of Directional Axial Magnetic Propulsion System.  
 FY05 Continue development and evaluation of FY04 efforts. Initiate Integrating Capabilities into Materials.  
 FY06 Continue development and evaluation of FY05 efforts. Continue to exploit emerging technologies to conduct ATD's that provide SOF with increased survivability, performance and countermeasures technologies. Continue evaluation of alternative power sources. Initiate SOF Warrior Technology, Improved Cratering Device.  
 FY07 Continue development and evaluation of FY06 efforts. Continue to exploit emerging technologies to conduct ATD's that provide SOF with increased survivability, performance and countermeasures technologies. Continue evaluation of alternative power sources.

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

FY04 Continued to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. Initiated Improved Underwater Explosive Demonstration.  
 FY05 Continue to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.  
 FY06 Continue to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.  
 FY07 Continue to exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.

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

Date: February 2005

Appropriation/Budget Activity RDT&E BA # 3	Special Operations Special Technology Project S200
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	FY04	FY05	FY06	FY07
ATL/ACTD	55.566	23.639	61.763	57.183
RDT&E Article Quantity				

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

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

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

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

	FY04	FY05	FY06	FY07
PSYOP "Global Reach" ACTD	2.795	2.878	5.973	5.981
RDT&E Article Quantity				

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

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

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

Date: February 2005

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

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

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

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

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

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

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

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

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Appropriation/Budget Activity RDT&E BA # 3	Special Operations Special Technology Project S200
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	FY04	FY05	FY06	FY07
Rotary Wing UAV	14.721	21.086		
RDT&E Article Quantity	4			

FY04 This initiative was a Congressional Plus-up. Continued to identify and develop SOF-unique capabilities on the baseline aircraft developing concept of operations and payloads that address critical needs of the SOF warfighter. Support Defense Advanced Research Projects Agency/Army platform development and maturation program through ground and flight testing.

FY05 This is a Congressional Plus-Up. Procure 7 prototype rotary wing aircraft for extensive Test, Analyze, Fix/Tactics, Techniques, and Procedures as per Congressional direction. Support the SOF Long Endurance (SLED) ACTD, developing payloads and concepts of operation for the A-160. Continue to support platform development and maturation program through ground and flight evaluation.

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

FY04 This initiative was a Congressional Plus-up. Development effort continued to investigate and evaluate biometric feature measurement techniques that can be incorporated in a deployable system supporting SOF missions.

FY05 This is a Congressional Plus-Up. Continues to investigate and evaluate biometric feature measurement techniques. Develop a prototype system to remotely validate identities of specified persons. Support ongoing biometric efforts within the Department of Defense for Special Operations Forces applications.

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

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



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

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	FY04	FY05	FY06	FY07
Affordable Access to NVE	1.635			
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. Supported a pilot project that will provide calibration, standardization, and characterization of NV capabilities for the SOF community.				
	FY04	FY05	FY06	FY07
Advanced Target ID for AC-130U Gunship	3.704	1.247		
RDT&E Article Quantity				
<p>FY04 This initiative was a Congressional Plus-up. Development effort continued to explore Vibro Electronic Signature Target Analysis (VESTA) and Passive Acoustic Reflective Device (PARD) technologies for enhancement of the AC-130U Gunship target acquisition capabilities. Enhancements to the Gunships' ability to align the weapons at night and over water were also being evaluated.</p> <p>FY05 This is a Congressional Plus-Up. Continue to explore Vibro Electronic Signature Target Analysis (VESTA) and Passive Acoustic Reflective Device (PARD) technologies for enhancement of the AC-130U Gunship target acquisition capability and Special Operations Forces (SOF) enhanced beacon systems. Also plan to conduct analysis of VESTA with a more advanced Solid State Synthetic Aperture Radar (SSAR) for next generation Gunship Applications.</p>				
	FY04	FY05	FY06	FY07
Dual Band Universal Night Sight	1.635			
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. Technology demonstrated an integrated image intensified and long-wave infrared fused system within the same aperture.				
	FY04	FY05	FY06	FY07
Synthetic Aperture Radar (Millimeter FLIR)	4.090			
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. The Synthetic Aperture Radar provides a ground map plan position indicator view, which can be changed to a high resolution image using synthetic aperture radar techniques that will allow for unassisted instrument landings and target classification capabilities. Technology demonstrated and integrated package on a light twin civil aircraft suitable for use on a C-130 or rotary wing platform.				

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

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	FY04	FY05	FY06	FY07
Light Reconnaissance Vehicle	2.309			
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. Continued development of a system concept for the Lightweight Reconnaissance Vehicle (LRV). Investigated potential near-term hybrid diesel/electric powerplants for the LRV.				
	FY04	FY05	FY06	FY07
SMAX	.965	1.631		
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. The SMAX is an innovative antenna derived from the Navy's Cooperative Engagement Capability design. Developed a hybrid steered antenna that provides a low profile for easy mounting on a C-130 or CV-22 along with light civil aircraft and rotary wing assets. FY05 This is a Congressional Plus-Up. The FY05 activity takes the brass-board technology demonstration item and fabricates a flight-worthy test article. The test article is integrated with the Solid State Synthetic Aperture Radar that was developed as an FY02 Congressional Plus-up. The new system performance will be measured on an RC-12M aircraft and provided to PEO(FW) for targeting radar risk reduction and radar system procurement option.				
	FY04	FY05	FY06	FY07
SOF Unmanned Vehicle Technology Integration	2.695			
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. Supported unmanned vehicle development and integration efforts at the Prototype Maintenance Facility supporting Special Operations Technology Development and Special Operations Advanced Technology Development projects.				
	FY04	FY05	FY06	FY07
Special All Terrain Vehicle	2.043			
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. Technology development effort obtained and modified commercial personal mobility vehicles to produce diesel fueled militarized prototypes for initial evaluation by SOCOM.				

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

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	FY04	FY05	FY06	FY07
NSW Craft	2.886			
RDT&E Article Quantity				
FY04 This initiative was a Congressional Plus-up. Explored technologies to support future combatant craft development.				
	FY04	FY05	FY06	FY07
Land and Sea Special Operations (LASSO) Mobility System		1.631		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. Design, integrate, build and evaluate advanced soldier mobility and rural terrain vehicle prototypes.				
	FY04	FY05	FY06	FY07
Remote Sensor Power Source		1.437		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. Develop a battery-free, self-replenishing, energy management platform that will power remote sensors and other remote operations for over 20 years under severe environmental conditions, such as temperature and pressure extremes. This proposed battery-free system would provide long-term, reliable power for a variety of remote sensors and other remote operations that support command and control.				
	FY04	FY05	FY06	FY07
Foreign Language Translator		1.342		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. Conduct improvements based on FY04 military utility assessment and user evaluation of the Voice Response Translator. Effort will include enhancement of voice command function, integrate versatile headset capability and develop an operator level capability to build mission specific translations. Five initial prototypes will undergo lab and field evaluation followed by fifty units in an extended user evaluation in multiple situations.				
	FY04	FY05	FY06	FY07
Snapshot Synthetic Aperture Radar		.959		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. The intent of this effort is to demonstrate a radar array processor fabricated from COTS micro-processors. Micro-processors have evolved to the point that expensive, one of a kind special purpose array processors can be replaced with much lower cost COTS arrays to perform "typical" radar signal processing.				

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

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	FY04	FY05	FY06	FY07
ANGELFIRE Active Protection		6.709		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. Investigate, develop and demonstrate prototype system, in concert with the U.S. Army Science and Technology Objective for Full-Spectrum, Close-in Active Protection (FCLAS) that will protect Special Operations Forces (SOF) and SOF assets from Rocket Propelled Grenades (RPGs) using counter-munitions.				
	FY04	FY05	FY06	FY07
Surveillance Augmentation Vehicle		.959		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. The funding provided by Congress will purchase and integrate real time, tiled mosaic displays that have 10 million mega pixels providing the soldier with the capability of facial and scripted recognition at very long distances. Funding would integrate Ultra wide band intrusion detection sensors that can be deployed to provide an ad-hoc network for image / data / voice communications and will also provide the ability to cordon an area to protect and monitor any intrusions or device tampering. The funding will give us the capability to integrate all these cutting edge technologies into a standard military vehicle therefore taking the SOF warrior off the ground of a hostile environment and placing him in a safer and more technologically advanced war fighting vehicle.				
	FY04	FY05	FY06	FY07
Remote Video Weapon Site		1.631		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. A remote video weapon site is currently being developed by USSOCOM under a FY03 SBIR Phase II contract. The FY05 funds will be used to mature the design to a Technology Readiness Level (TRL) 7. A Phase III SBIR contract will be awarded with these funds for the continued development.				
	FY04	FY05	FY06	FY07
Advanced Multi-Purpose Micro-Display System		1.437		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. This effort will integrate highly efficient display component technology into several SOF applications to reduce power consumption while improving readability.				
	FY04	FY05	FY06	FY07
SOF Experimental Technology Integration		1.918		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. Develop and demonstrate a prototype integrated system incorporating unmanned systems,				

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command and control, tactical networks, reconnaissance equipment and user interfaces to support Special Operations Forces (SOF) unique missions in low to moderate threat environments.				
	FY04	FY05	FY06	FY07
Mark V Patrol Boat Replacement Craft Prototype		2.396		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. This effort will develop composite combatant craft design/fabrication techniques, and, using the aluminum-hulled MK V as a benchmark, quantify through testing advantages in the areas of shock mitigation, sea-keeping, and life cycle cost reduction.				
	FY04	FY05	FY06	FY07
TACTICOMP		1.342		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. This effort integrates laser range-finding and precision inertial navigation into commercial PDAs providing a compact, wireless, and secure means to provide individual operator network stand-alone and networked communications, situation awareness, and command and control capabilities.				
	FY04	FY05	FY06	FY07
Foliage Penetrating Solid State Synthetic Aperture Radar		4.889		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. The intent is to develop and demonstrate on an RC-12M aircraft a purpose-built radar to detect and identify buried objects. Radars pressed into service in Iraq were designed for drug interdiction in the jungle foliage of South America. These systems are not suitable for detecting objects buried in dry, sand environments as they employ very low power and very wide bandwidths. This system will utilize existing radar frequencies that permit very high radiated power to overcome ground losses and provide deeper penetration than existing systems.				
	FY04	FY05	FY06	FY07
Maritime Tagging, Tracking & Locating		.959		
RDT&E Article Quantity				
FY05 This initiative is a Congressional Plus-Up. This effort demonstrates and evaluates available technologies to support and enable SOF maritime tagging, tracking and locating capabilities. The emphasis will be on overall system architecture, connectivity with SOF, conventional and national resources, and innovative platforms, sensors and supporting infrastructure.				

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

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Appropriation/Budget Activity RDT&E BA # 3	Special Operations Special Technology Project S200
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	FY04	FY05	FY06	FY07
Autonomous Navigation Sensor Suite		1.247		
RDT&E Article Quantity				

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

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

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

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

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

B. Other Program Funding Summary: None.

C. Acquisition Strategy. N/A.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7				R-1 ITEM NOMENCLATURE / PROJECT NO. PE 0304210BB Special Applications for Contingencies (SAFC)						

COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE0304210BB	23.657	21.527	21.116	21.144	25.460	26.012	26.502	26.540	Cont.	Cont.
9999.PR SAFC	23.657	21.527	21.116	21.144	25.460	26.012	26.502	26.540	Cont.	Cont.

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:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Previous President's Budget	23.764	20.758	20.700	20.680
Current President's Budget	23.657	21.527	21.116	21.144
Total Adjustments	-0.107	0.769	0.416	0.464
Congressional Program Reductions		-0.434		
Congressional Rescissions				
Congressional Increases		1.700		
Reprogrammings	-0.107		0.416	0.464
SBIR Transfer		-0.497		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 0304210BB Special Applications for Contingencies (SAFC)	
<p>Funding:</p> <p>FY04</p> <ul style="list-style-type: none"> <li>- Funds were reduced for congressional pro rata reductions in the FY 2004 Appropriations Conference Report.</li> </ul> <p>FY05</p> <ul style="list-style-type: none"> <li>- Congressional plus-up for Tactical Imagery Communications Devices (+\$1,632K)</li> </ul> <p>FY06</p> <ul style="list-style-type: none"> <li>- Funds increased to continue research and assessment of emerging ISR technologies.</li> </ul> <p>FY07</p> <ul style="list-style-type: none"> <li>- Funds increased to continue research and assessment of emerging ISR technologies.</li> </ul> <p>Schedule: None.</p> <p>Technical: None.</p>		



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

Date: FEBRUARY 2005

Appropriation/Budget Activity  
RDT&E BA # 7

Special Applications for Contingencies/Project 9999

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Special Applications for Contingencies	23.657	21.527	21.116	21.144	25.460	26.012	26.502	26.540
RDT&E Articles Quantity								

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. Made significant improvements to expendable UAV capabilities to include maritime launch and recovery. Developed improvements to long range ground surveillance capabilities and conducted integration research for a networked ISR sensor system.

	FY04	FY05	FY06	FY07
SAFC	23.657	21.527	21.116	21.144
RDT&E Articles Quantity				

FY04 Continued development and combat evaluation of selected unmanned delivery platforms and mounted or deliverable ISR sensor systems. Continued to develop, deploy and evaluate advanced auto-pilot technologies. Continued research and development of advanced mobile secure networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Continued to enhance and evaluate a common ground station. Continued research and assessment of emerging ISR technologies. Continued to research, evaluate and integrate red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement. Additional details are classified.

FY05 Initiative partially funded by a Congressional Plus-up to develop a tactical imagery communication device. Continues 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. Additional details are classified.

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

Date: FEBRUARY 2005

Appropriation/Budget Activity  
RDT&E BA # 7

Special Applications for Contingencies/Project 9999

FY06 Continues development and combat evaluation of selected unmanned delivery platforms and mounted or deliverable ISR sensor systems. Continues to develop, deploy and evaluate advanced auto-pilot technologies. Continues research and development of advanced mobile secure networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Continues to enhance and evaluate a common ground station. Continues research and assessment of emerging ISR technologies. Continues to research, evaluate and integrate red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement. Additional details are classified.

FY07 Continues development and combat evaluation of selected unmanned delivery platforms and mounted or deliverable ISR sensor systems. Continues to develop, deploy and evaluate advanced auto-pilot technologies. Continues research and development of advanced mobile secure networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Continues to enhance and evaluate a common ground station. Continues research and assessment of emerging ISR technologies. Continues to research, evaluate and integrate red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement. Additional details are classified.

**C. Other Program Funding Summary:**

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
Proc, SAFC	20.633	15.111	16.511	16.554	18.929	19.361	19.379	19.398	Cont.	Cont.

**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.

APPROPRIATION / BUDGET ACTIVITY SPECIAL APPLICATIONS FOR CONTINGENCIES PE0304210BB  
 RDT&E DEFENSE-WIDE / 7

Actual or Budget Value (\$ in millions)

Cost Categories	Contract		Total	Budget	Award	Budget	Award	Budget	Award		
(Tailor to WBS, or System/Item Requirements)	Method & Type	Performing Activity & Location	PYs Cost	Cost FY05	Date FY05	Cost FY06	Date FY06	Cost FY07	Date FY07	To Complete	Total Program
UAV Capability Development	MIPR	NAVAIR	16.650	5.900	Dec-04	10.166	Dec-05	10.200	Dec-06	Cont.	Cont.
ISR Sensor and Networking Development	MIPR	Various	18.045	9.392	Dec-04	9.750	Dec-05	9.744	Dec-06	Cont.	Cont.
TT&L R&D	MIPR	Various	4.491							Cont.	Cont.
Portable Radar	MIPR	DOE	2.500								2.500
FFRDC Support to SOJICC	MIPR	MITRE CECOM	1.001								1.001
FFRDC Support to SOJICC	MIPR	MITRE ESC	0.330								0.330
Technical Collection R&D	MIPR	ASD C3I	3.252								3.252
Special Comms Devices	MIPR	SAF FMB		1.000	Jan-05					Cont.	Cont.
Biometrics	MIPR	SAF FMB		0.500	Jan-05					Cont.	Cont.
NRT Contingency		Various	2.777	3.103	Jun-05	1.200	TBD	1.200	TBD	Cont.	Cont.
CP - Tactical Imagery Comm	MIPR	TBD		1.632	Mar-05						
Subtotal Product Dev			49.046	21.527		21.116		21.144		Cont.	Cont.

Remarks:

Subtotal Spt											
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Remarks:

Subtotal T&E											
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Remarks:

Subtotal Management											
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Remarks:

Total Cost			49.046	21.527		21.116		21.144		Cont.	Cont.
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Appropriation/Budget Activity RDT&E/7	Project Number and Name 9999.PR SAFC
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Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
UV, ISR and TT&L Capabilities Development	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
UV, ISR and TT&L Technology Integration & Testing	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
UV, ISR and TT&L Prototype Demonstrations	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
UV, ISR and TT&L Combat Evaluation	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160279BB Small Business Innovative Research (SBIR)							

COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160279BB	13.481	12.926							Cont.	Cont.
S050, SBIR	13.481	12.926							Cont.	Cont.

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 \$.100M 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.

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

R-1 ITEM NOMENCLATURE / PROJECT NO.

PE 1160279BB Small Business Innovative Research (SBIR)

	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>
Previous President's Budget	13.498		
Current President's Budget	13.481	12.916	
Total Adjustments	-0.017	12.916	
Congressional Program Reductions	-0.017		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR Transfer		12.916	

B. Program Change Summary:

Funding:

FY04:

Decrease reflects program's pro-rata share of congressional general reduction.

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2005
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160403BB Special Operations Aviation Systems Advanced Development/Project SF100
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COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160403BB		82.398	104.330	85.032	58.734	40.994	46.863	37.792	Cont.	Cont.
PE1160404BB	68.341									
SF100, Special Operations Aviation Systems Advanced Development	68.341	82.398	104.330	85.032	58.734	40.994	46.863	37.792	Cont.	Cont.

***As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations Aviation Systems Advanced Development. FY 2005-2011 resources were moved from PE 1160404BB.***

A. Mission Description and Budget Item Justification: This project provides for the investigation, evaluation, demonstration and integration of current and maturing technologies for 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 radar; digital terrain elevation data and electronic order of battle; digital maps; enhanced situational awareness; near-real-time intelligence to include data fusion; threat detection and avoidance; electronic support measures for threat geo location and specific emitter identification; navigation; target detection and identification technologies; aerial refueling; and studies for future SOF aircraft requirements.



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

R-1 ITEM NOMENCLATURE / PROJECT NO.

PE 1160403BB Special Operations Aviation Systems Advanced Development/Project SF100

B. Program Change Summary:

	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>
Previous President's Budget	67.713			
Current President's Budget	68.341	82.398	104.330	85.032
Total Adjustments	0.628	82.398	104.330	85.032
Congressional Program Reductions		-1.294		
Congressional Rescissions		-18.500		
Congressional Increases				
Congressionally Directed Transfer		103.982	59.662	23.156
Reprogrammings	0.628		44.668	61.876
SBIR Transfer	-1.882	-1.790		

Funding:

FY04

- Net increase (\$.628) for improved program efficiencies to the Common Avionics Architecture for Penetration (CAAP) program.

FY05

- Transfer from PE1160404BB (\$103.982M) a result of congressionally directed program element change.
- Congressional decrease (-\$18.500M) to CAAP.
- Decrease of (-\$1.294M) resulting from sectional reductions 8122, 8131, and 8095.

FY06

- Transfer from PE1160404BB (\$59.662M) a result of congressionally directed program element change.
- Net increase (\$44.668M) resulting from procurement funds reprogrammed to RDT&E to offset program cost growth and incorporate numerous modifications made to the Avionics Modernization Program/CAAP baseline.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160403BB Special Operations Aviation Systems Advanced Development/Project SF100	
<p>FY07</p> <ul style="list-style-type: none"> <li>- Transfer from PE1160404BB (\$23.156M) a result of congressionally directed program element change.</li> <li>- Net Increase (\$61.876) resulting from procurement funds reprogrammed to RDT&amp;E for integration and testing of equipment and to offset CAAP program cost growth.</li> </ul> <p>Schedule: None.</p> <p>Technical: None.</p>		

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Aviation Sys Adv Dev	68.341	82.398	104.330	85.032	58.734	40.994	46.863	37.792
RDT&E Articles Quantity								

***As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations Aviation Systems Advanced Development. FY 2005-2011 resources were moved from PE 1160404BB.***

A. Mission Description and Budget Item Justification: This project provides for the investigation, evaluation, demonstration and integration of current and maturing technologies for 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) radar; digital terrain elevation data and electronic order of battle; digital maps; enhanced situational awareness; near-real-time intelligence to include data fusion; 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.

- 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 provides LPD navigation for MC-130 E/H/P and off-board enhanced situational awareness (ESA), large color displays and a SOF processor for AC-130H/U and MC-130 E/H/P.
- CAAP On-Board Enhanced Situational Awareness System (OBESA). This program continues development of OBESA which consolidates threat data from on and off-board sensors into a single coherent image to the crew. OBESA includes the Below Line-Of-Sight Electronic Support Measures (BLOSEsM) and the Special Receiver (SR) and processing software. BLOSEsM is an advanced receiver system which provides geo-location data on threats which are below the line of sight of the current SOF threat warning systems. OBESA will be integrated on SOF C-130s, CV-22s, MH-60s and MH-47s.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

- Joint K-band Terrain Following/Terrain Avoidance (TF/TA) Radar. CAAP initiates development of a SOF common K-band LPI/LPD radar to defeat advanced passive detection threat while maintaining ability to fly safe TF. This radar is targeted for use on all MC-130E/Hs, MH-47Gs, MH-60Ms & CV-22 aircraft.
- EC-130 Obsolescence. This program provides for development and design to resolve special mission equipment obsolescence and vanishing vendor issues.
- MC-130H Aerial Refueling (MCAR). Provides 22 MC-130H Combat Talon II aircraft with the capability to air refuel SOF rotary wing aircraft and CV-22. This capability will extend the range of rotary wing and CV-22 aircraft operating in politically sensitive/denied airspace. Elements of the air refueling system include non-developmental item aerial refueling pods, internal flat stackable tanks, and enlarged paratroop door windows.

**B. Accomplishments/Planned Program**

	FY04	FY05	FY06	FY07
Aviation Engineering Analysis	3.632	1.392	1.484	1.514
RDT&E Articles Quantity				
FY04 Continued engineering analysis of SOF fixed wing aircraft avionics and sensors. FY05 Continued engineering analysis of SOF fixed wing aircraft avionics and sensors. FY06 Continue engineering analysis of SOF fixed wing aircraft avionics and sensors. FY07 Continue engineering analysis of SOF fixed wing aircraft avionics and sensors.				
	FY04	FY05	FY06	FY07
Common Avionics Architecture for Penetration (CAAP)	48.881	54.192	70.145	38.245
RDT&E Articles Quantity				
FY04 Department of Defense accelerated CAAP X-band TF/TA (APN-241) and off-board ESA development under the US Air Force AMP contract. This acceleration was necessitated by a 26 month slip in the Air Force AMP which created 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 were an acceleration of APN-241 risk reduction, initiation of developmental testing for MC-130H platforms, CAAP hardware preliminary design review, and CAAP software				

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

<p>specification review.</p> <p>FY05 Continue accelerated APN-241 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 (TRR) for Combat Talon I preliminary TF DT&amp;E. Due to the \$18.5M reduction in FY05, award of the SOF baseline configuration update contract modifications were delayed a total of six months.</p> <p>FY06 The C-130 AMP/CAAP program will be testing the Block 2 hardware and software in the Systems Integration Laboratory (SIL) in preparation for first flight of the Development Test &amp; Evaluation (DT&amp;E) configuration for the MC-130E/H/P Combat Talon aircraft. Additionally, the CAAP ESA capability will complete its SIL evaluations to support a TRR. CAAP ESA goes on all AC/MC-130 aircraft. In parallel, design and development for the baseline configuration update to reflect post-contract award avionic modifications (Block 10) progresses.</p> <p>FY07 Flight testing continues for TF performance at low levels and against passive detection threats. The interaction between CAAP LPD TF and CAAP ESA threat response, in particular route re-planning, will be evaluated in flight. SIL evaluations of the avionics baseline (Block 10) updates commence.</p>				
	FY04	FY05	FY06	FY07
CAAP On-Board ESA	14.154	21.672	11.071	15.615
RDT&E Articles Quantity				
<p>FY04 Continued development of Below Line-of-Sight Electronic Support Measures (BLOSEsM). Continued engineering analysis and development of special receiver, digital map and color displays. Developed software for correlation fusion of special receiver data with off/on-board threat information.</p> <p>FY05 Continue development of BLOSEsM to include engineering and integration of system components. Initiate planning for technology demonstration flight test of BLOSEsM hardware and software.</p> <p>FY06 Complete final laboratory integration and test of BLOSEsM components including Integrated Processor threat correlation, fusion, and display software; begin initial installation of BLOSEsM hardware/software components into test aircraft.</p> <p>FY07: Perform aircraft integration of BLOSEsM on MC-130 flight test aircraft. Conduct MC-130 BLOSEsM system flight test. Provide BLOSEsM system transition documentation to USSOCOM to support CAAP OBESA legacy APR-46 system replacement on AC/MC-130s.</p>				
	FY04	FY05	FY06	FY07
EC-130 Equipment Obsolescence		.642		
RDT&E Articles Quantity				
<p>FY05 Develop and design improvements to resolve special mission equipment obsolescence.</p>				

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

	FY04	FY05	FY06	FY07
Joint K-band TF/TA Radar			21.630	29.658
RDT&E Articles Quantity				

FY06 Development began in Project D615 and was transferred to this project beginning in FY06 to develop a joint radar. Continues development of a SOF common K-band TF/TA radar to defeat advanced passive detection threat while maintaining ability to fly safe TF. This radar is targeted for use on all MC-130E/H , MH-47Gs, MH-60Ms and CV-22 aircraft. Specific activities include hardware and software preliminary design reviews.  
 FY07 Continues development of SOF common K-band TF/TA radar. Specific activities include hardware and software critical design reviews and initiation of developmental testing for MC-130E/H platform.

	FY04	FY05	FY06	FY07
MC-130H Aerial Refueling	1.674	4.500		
RDT&E Articles Quantity				

FY04 Conducted engineering activities to redesign the fuel vent valve and relocate fuel lines to facilitate entry into the MC-130H Dry Bays for maintenance purposes. Completed development and integration of -902 pods onto the MC-130H.  
 FY05 Develop carry-on internal flat stackable tanks.

C. Other Program Funding Summary:										
	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	To Complete	Total Cost
Proc, C-130 Mods	208.918	56.397	67.270	52.550	96.151	102.296	101.735	114.561	Cont.	Cont.

- D. Acquisition Strategy :
- 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.
  - 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).
  - CAAP OBESA. Leverage current technology developed and demonstrated in the Air Force Research Lab Special Threat Awareness Receiver Transmitter Advanced Technology Demonstration to provide enhanced threat awareness to SOF aircrews.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

- **Joint K-band TF/TA Radar.** Conduct competition to select up to two contractors to conduct 12-month radar technology demonstrations. At the conclusion of these risk reduction activities, a second competition will be conducted to select one contractor to enter into the System Design and Development (SDD) phase.
  
- **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.
  
- **MCAR.** Integrate a non-developmental item aerial refueling system onto MC-130H Talon II aircraft. The first phase of this program is Foreign Comparative Testing 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.

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

DATE

FEBRUARY 2005

APPROPRIATION / BUDGET ACTIVITY  
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R-1 ITEM NOMENCLATURE / PROJECT NO.

PE 1160404BB Special Operations (SO) Tactical Systems Development

COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160404BB	296.173	70.719	63.513	47.660	16.880	17.989	12.029	21.175	Cont.	Cont
3129 MC-130H COMBAT TALON		22.958	4.284						0.0	28.120
3284 SOF AIRCRAFT DEFENSIVE SYSTEM	54.330								See note	See note
3326 AC-130U GUNSHIP	1.355	1.237	18.907	12.863	2.748	1.639	1.691	1.743	Cont.	Cont.
D476 PSYOPS ADV DEV	2.159	.331	5.055	7.492	1.382	2.424	.678	.692	Cont.	Cont
D615 SOF AVIATION	36.795	20.304	7.014	2.994	2.355	2.767		10.273	Cont.	Cont
DE14 JASORS	.033									
S0417 UNDERWATER SYSTEMS ADV DEV	16.576	.749	.601			1.130			Cont.	Cont
S1684 SOF SURFACE CRAFT ADV SYSTEMS	1.409	.960							Cont.	Cont
S350 SO MISSION PLANNING ENVIRONMENT	2.473	6.400	3.909	3.841	3.960	4.065	4.171	4.282	Cont.	Cont
S375 WEAPONS SYSTEMS ADV DEV	8.989	5.322	10.175	5.524	4.330	3.330	2.491	2.526	Cont.	Cont
S625 SOF TRAINING SYSTEMS	19.551	4.573		1.757	1.612	2.634	2.690	1.248	Cont.	Cont.
S700 SO COMMUNICATIONS ADV DEV	6.799	4.415	13.058	13.189			.308	.411	Cont.	Cont
S800 SO MUNITIONS ADV DEV	6.058	3.470			.493				Cont.	Cont
S900 SO MISCELLANEOUS EQUIPMENT ADV DEV			.510						Cont.	Cont



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

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

R-1 ITEM NOMENCLATURE / PROJECT NO.  
PE 1160404BB Special Operations (SO) Tactical Systems Development

SF100 AVIATION SYSTEMS ADV DEV	68.341								See note	See note
SF200 CV22	71.305								See note	See note

*As directed by Congress, a new program element was established beginning in FY 2005 for 3284 Special Operations Aircraft Defensive Systems, SF100 Aviation Systems Adv Dev, SF200 Special Operations CV-22 Dev and the Advanced SEAL Delivery Sys Dev portion of S0417. FY 2005-2011 resources were moved from PE 1160404BB.*

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:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Previous President's Budget	298.825	311.966	190.438	85.036
Current President's Budget	296.173	70.719	63.513	47.660
Total Adjustments	-2.652	-241.247	-126.925	-37.376
Congressional Program Reductions		-1.772		
Congressional Rescissions		-11.970		
Congressional Transfers		-238.768	-136.946	-42.427
Congressional Increases		9.000		
Reprogrammings	-2.652	3.810	10.021	5.051
SBIR		-1.547		

APPROPRIATION / BUDGET ACTIVITY

RDT&amp;E, DEFENSE-WIDE / 7

R-1 ITEM NOMENCLATURE / PROJECT NO.

PE 1160404BB Special Operations (SO) Tactical Systems Development

**Funding:****FY04:**

- Reprogrammings to higher command priorities to support the War on Terrorism.

**FY05:**

Congressional transfers from PE1160404BB to the following new PEs:

- (-\$103.982M) to new PE 1160403BB Special Operations Aviation Systems Advanced Development
- (-\$75.131M) to new PE 1160421BB Special Operations CV-22 Development
- (-\$58.041M) to new PE 1160425BB Special Operations Aircraft Defensive Systems
- (-\$1.614M) to new PE 1160426BB Advanced SEAL Delivery System Development

**Congressional Plus-ups:**

- Project S700: Increase of (\$4.600M) for Multi-Band Inter/Intra Team Radio Blue Force Tracking capability (\$2.000M) and Tactical Communications System Test bed Initiative (\$2.600M).
- Project S800: Increase of \$3.400M to continue development and testing of the Multi Target Warhead.
- Project S1684: \$1.000M MKV Special Operations Craft
- Congressional decrease to Project D615 of (-\$11.970M) transferring to the Army as service common for the Fly-by-Wire program.
- Decrease of (-\$1.765M) for Sections 8095, 8122 and 8131.

**Reprogramming as follow:**

- Project D615: Increase of \$3.810M from PE1160402BB, Project S200.PR, (\$3.060M) to the A/MH-6 Mission Enhanced Little Bird program to address tail rotor authority issues and (\$.750) supports Next Generation FLIR development.

**FY06: The following reprogrammings to support higher priorities and the War on Terrorism:**

- Project 3129: Increase of \$4.284M to modify the development that converts C-130H to the MC-130H Combat Talon II.
- Project 3326: Increase of \$16.373M as a result of reflowing the AC-130U Gunship program to comply with incremental budgeting policy. This program starts the development of a new EO/IR sensor for which the Gunship has the most stringent requirements.

## APPROPRIATION / BUDGET ACTIVITY

RDT&amp;E, DEFENSE-WIDE / 7

## R-1 ITEM NOMENCLATURE / PROJECT NO.

PE 1160404BB Special Operations (SO) Tactical Systems Development

- Project S350: Increase of \$0.077M supports development of software for theater special operations commands.
- Project S625: Decrease of \$11.203M reduces support to the A/MH-6 Simulator and AFSOC and USASOC Simulator Block Updates.
- Project D615: Decrease of \$21.635M is a net result from Fly-by-Wire transfer to the Army (-\$10.471M), Terrain Following/Terrain Avoidance, (-\$17.203M) technology development realignment to SF100 where the programs managed and the A/MH-6 MELB program to develop tail rotor safety of flight modifications (\$6.051M).
- Project S375: Increase of \$5.774M will begin development of new items being developed for the SPEAR program, test and evaluate on-going Gunfire Detection System performance, improve functionality of the LCMR and enter concept development for modernization of SOF medical kits.
- Project S700: Increase of \$13.058M to continue technology insertions for the Joint Enhanced Multi-Band Inter/Intra Team Radio (JEM), Multi-Band Inter/Intra Team Radio (MBITR) (\$7.651M) and continues development of a COMSEC chip for the Multi-Band/Multi-Mission Radio (MBMMR) to correct obsolescence issue (\$5.101M), and development of a Machine Based Language Translator (MBLT) (\$0.306M).
- Project S800: Decrease \$0.816M to Demo Kits to support higher command priorities.
- Project S900: Increase \$0.510M to support tactical vehicle modification integration.
- Project D476: Increase of \$3.599M to initiate development of the Commando Solo narrowband transmitter.

FY07: The following reprogrammings to support the Command's higher priorities and the War on Terrorism:

- Project 3326: Increase of \$10.283M supports the continued development of the most stringent requirements for the EO/IR sensor.
- Project S625: Combined net reductions of \$2.730M to the A/MH-6 Simulator development.
- Project S700: Increase of \$13.189M to continue technology insertions for the JEM. MBITR (\$7.668M) and to continue development of a COMSEC chip for the MBMMR to correct obsolescence issue (\$5.112M), and development of a MBLT (\$0.409M).
- Project D476: Increase of \$0.788M to continue primary hardware development and systems engineering for the Psychological Operations Broadcast System Long Range Broadcast System.
- Project S1684: Decrease of \$1.335M is due to funds being moved to Science and Technology.
- Project S375: Increase of \$5.188M will begin development of new items being developed for the SPEAR program, test and evaluate on-going Gunfire Detection System performance, improve functionality of the LCMR and enter concept development for modernization of SOF medical kits.
- Project S350: Increase of \$0.084M supports development of software theater special operations commands.

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

R-1 ITEM NOMENCLATURE / PROJECT NO.  
PE 1160404BB Special Operations (SO) Tactical Systems Development

- Project D615: Decrease of \$20.416M is a result of Fly-By-Wire transfer to the Army (-\$1.896M), decrease to the A/MH-6 MELB program (-\$3.844M), reduction to the Next Generation Night Vision Devices program (-\$4.388M), the transfer of TF/TA (-\$13.282M), and an increase to the development of the M-134 Machine Gun (\$2.994M).

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.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	MC-130 Combat Talon II/Project 3129	

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
		22.958	4.284					
RDT&E Articles Quantity								

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 seven C-130H2 and three CLR3 modified aircraft (that were funded with FY03 Supplemental) to an MC-130H Combat Talon II configuration. These aircraft provide low level infiltration, exfiltration, and re-supply of special operations forces and equipment in hostile/denied territories. Aircraft will also refuel SOF helicopters.

**B. Accomplishments/Planned Program**

	FY04	FY05	FY06	FY07
System Development and Engineering		22.958	4.284	
RDT&E Articles Quantity				

FY05 Conduct a preliminary analysis for an Electro-Optical/Infrared Common Sensor and Nonrecurring Engineering (NRE) for the seven C-130H2 and three CLR3 modified aircraft to an MC-130H Combat Talon II configuration.

FY06 Complete NRE efforts.

**C. Other Program Funding Summary:**

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	To <u>Complete</u>	Total <u>Cost</u>
Procurement	8.573	81.700	66.288	156.567	179.500	61.408	4.118	3.620	Cont.	Cont.

D. Acquisition Strategy. The Plus 10 Program procures 10 Talon II aircraft by modifying 3 previously procured Combat Loss Replacement (CLR-3) C130 aircraft and 7 C130H2 aircraft. The CLR-3 aircraft were previously modified by installing an in-flight refueling capability, a high speed ramp, improved electrical generators, advanced communication and electronic counter-measures systems, and adding an APN-241 ground mapping/weather radar. In the Plus 10 Program, these 3 aircraft will be further modified to add a terrain following/terrain avoidance capability to the APN-241, the ALQ-196 Low Band Jammer, the ALQ-55 Towed Decoy System, and the C-130 Avionics Modernization Program/Common Avionics Architecture for Penetration modification. These modifications will bring the CLR-3 aircraft up to a complete Combat Talon II configuration. For the conversion of the 7 C130H2s into the Combat Talon II configuration, the Plus 10 Program will conduct all the modifications described previously in one step.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	MC-130 Combat Talon II/Project 3129	

E. The prime contractor, Boeing Ft Walton Beach, FL. will work with subcontractors and they are responsible for the limited RDT&E effort. The proposed contract award for this effort is April 2005.

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				MC-130H Combat Talon II /3129							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
System Design Development Other (EO/IR Study)	CPAF/FFP TBD	Boeing, Ft Walton Beach, FL Lincoln Labs, Lexington, MA		22.150 0.808	Apr-05 Jan-05	4.284	Feb-06				26.434 0.808
Subtotal Product Dev				22.958		4.284					27.242
Remarks:											
Development Spt											
Subtotal Spt											
Remarks:											
Developmental Test & Eval											
Subtotal T&E											
Remarks:											
Contractor Engineering Spt											
Subtotal Management											
Remarks:											
Total Cost				22.958		4.284					27.242
Remarks:											

Exhibit R-4, Schedule Profile														Date: FEBRUARY 2005																		
Appropriation/Budget Activity								Program Element Number and Name								Project Number and Name																
RDT&E/7								PE1160404BB/Special Operations Tactical System Development								Project 3129/MC-130H Combat Talon II																
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
System Design Development Contract Award						△																										
System Design Development NRE						△	—————	△																								



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<b>Exhibit R-4a, Schedule Profile</b>			Date: FEBRUARY 2005						
<u>Appropriation/Budget Activity</u> RDT&E/7	<u>Program Element Number and Name</u> PE1160404BB/Special Operations Tactical Systems Development	<u>Project Number and Name</u> Project 3129/MC-130H Combat Talon II							
<u>Schedule Profile</u>	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	
System Design Development Contract Award		2Q							
System Design Development Non-Recurring Engineering		2-4Q	1-2Q						

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	AC-130U Gunship/Project 3326	

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
AC-130U Gunship	1.355	1.237	18.907	12.863	2.748	1.639	1.691	1.743
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 loiter safely in the target area, accurately strike targets, 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 Special Operations Command aircraft.

**B. Accomplishments/Planned Program**

	FY 2004	FY 2005	FY 2006	FY 2007
AC-130U Plus Four	0.824			
RDT&E Articles Quantity				

FY04 Completed engineering analysis of obsolescence issues.

	FY 2004	FY 2005	FY 2006	FY 2007
AC-130U Sensor Upgrades			16.322	10.225
RDT&E Articles Quantity				

FY06 Program starts development of a new Electro-Optical/Infra Red (EO/IR) sensor to satisfy the remaining Operational Requirement Document deficiency on the AC-130U Gunship. Development will consider achieving an AFSOC-common sensor, for which the Gunship has the most stringent requirements.

FY07 Continues development and testing of EO/IR sensor for the AC-130U Gunship.

	FY 2004	FY 2005	FY 2006	FY 2007
AC-130U Post Production Support	.531	1.237	2.585	2.638
RDT&E Articles Quantity				

FY04 Continued weight and drag reduction design, obsolescence engineering drawings, survivability studies, and ground/flight test support.

FY05 Continues weight and drag reduction design, obsolescence engineering drawings, survivability studies, and ground/flight test support.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	AC-130U Gunship/Project 3326	

FY06 Continues weight and drag reduction design, obsolescence engineering drawings, survivability studies, and ground/flight test support.  
 FY07 Continues weight and drag reduction design, obsolescence engineering drawings, survivability studies, and ground/flight test support.

C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	To Complete	Total Cost
AC-130U Gunship (Procurement)	362.289	10.195		3.131						375.615

D. Acquisition Strategy. 1) AC-130U Plus Four: Primarily uses competitively selected prime contractor under the Integrated Weapons System Support Program. Individual acquisition strategies are developed for each project. 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. 2) Common EO/IR Sensor: TBD

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				AC-130U Gunship /3326							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Post Production Support	Various	Various	2.359	1.237	Various	2.585	Various	2.638	Various	Cont.	Cont.
AC-130U Plus Four	SS/CPFF & FFP	Boeing, Ft. Walton Beach, FL	35.943								35.943
AC-130U Sensor Upgrades	TBD	TBD				16.322	Feb-06	10.225	Feb 07		26.547
Subtotal Product Dev			38.302	1.237		18.907		12.863		Cont.	Cont.
Dev Spt											
Subtotal Spt											
Subtotal T&E											
Management											
Subtotal Management											
Remarks:											
Total Cost			38.302	1.237		18.907		12.863		Cont.	Cont.
Remarks:											

Exhibit R-4, Schedule Profile												Date: FEBRUARY 2005																				
Appropriation/Budget Activity RDT&E/7					Program Element Number and Name PE1160404BB/Special Operations Tactical System Development												Project Number and Name Project 3326/AC-130U Gunship															
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Full Rate Production Decision	▲																															
Production Delivery Plus Four Aircraft								△	—————	△																						
Post Production Support		▲	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————
Sensor Upgrades											△	—————	—————	—————	—————	△																

<b>Exhibit R-4a, Schedule Profile</b>				<u>Date:</u> FEBRUARY 2005					
<u>Appropriation/Budget Activity</u>	<u>Program Element Number and Name</u>			<u>Project Number and Name</u>					
RDT&E/7	PE1160404BB/Special Operations Tactical Systems Development			Project 3326/AC-130U Gunship					
<u>Schedule Profile</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	
Full Rate Production Decision	1Q								
Production Delivery Plus Four Aircraft	4Q	2-3Q							
Post Production Support	2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Sensor Upgrades			2-4Q	1-4Q	1Q				

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

Date: FEBRUARY 2005

Appropriation/Budget Activity RDT&E BA # 7	PSYOP Advanced Development/Project D476
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Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
	2.159	0.331	5.055	7.492	1.382	2.424	.678	.692
RDT&E Articles Quantity								

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

This project provides for the development and acquisition of Psychological Operations (PSYOP) equipment. PSYOP is planned operations to convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately, the behavior of foreign governments, organizations, groups, and individuals. This project funds transformational systems and equipment to conduct PSYOP operations in support of combatant commanders. The PSYOP sub-projects funded in this project are grouped by the level of organization they support. Sub-projects include:

- PSYOP Broadcast System (POBS), formerly Special Operations Media System A (SOMS A). POBS provides an operational/strategic mobile television/radio wide area broadcast system capability. It will receive and transmit real-time PSYOP products to and from commercial and military sources by satellite and microwave. POBS will be interoperable with the fixed site media production center at Fort Bragg, NC, Theater Media Production Center, Air National Guard Commando Solo aircraft, and the tactical Special Operations Media System B.
- Commando Solo supports combat operations by flying psychological operations broadcast missions for the purpose of broadcasting radio and/or television signals deep into denied territory. These broadcasts are made from EC-130J aircraft that are equipped with high powered transmitters and large antenna arrays which operate in the 30-1,000 MHz frequency range.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	PSYOP Advanced Development/Project D476	

<b>B. Accomplishments/Planned Program</b>				
	FY 2004	FY 2005	FY 2006	FY 2007
POBS	2.159	0.331	1.485	7.492
RDT&E Articles Quantity				

FY04 Conducted concept exploration study to determine future long range PSYOP broadcast assets and commences Fly-Away Broadcast Systems (FABS) testing.  
 FY05 Completes test and evaluation on the AM and Short Wave (SW) frequency FABS and the Special Operations Media System B (SOMS-B) (V)1 procured in FY03.  
 FY06 Commences primary hardware development, systems engineering, and Development of Test and Evaluation (DT&E) on the Long Range Broadcast System (LRBS) and POBS modernization.  
 FY07 Continues primary hardware development, system engineering, and DT&E on the LRBS, POBS modernization efforts, and PSYOP planning and analysis system.

	FY 2004	FY 2005	FY 2006	FY 2007
Commando Solo			3.570	
RDT&E Articles Quantity				

FY06 Integrates narrowband transceiver to Commando Solo broadcast platform for in-transit receipt of PSYOP broadcast products to be disseminated during airborne missions.

<b>C. Other Program Funding Summary:</b>										
	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
Proc, PSYOP Equipment	33.020	15.905	46.649	76.576	71.475	22.532	44.571	42.761	Cont.	Cont.



Appropriation/Budget Activity  
RDT&E BA # 7

PSYOP Advanced Development/Project D476

#### D. Acquisition Strategy.

- POBS consists of wide-area systems providing radio, television programming and multi-media production, distribution and dissemination support to the theater commander. POBS is comprised of several interfacing systems that can stand alone or interoperate with other PSYOP systems as determined by mission requirements. The program acquires and modifies as necessary commercial and governmental-off-the-shelf (GOTS) systems and equipment to replace or enhance current system capabilities. The program also acquires performance enhancements to meet emergent requirements.
- Commando Solo funds modifications of the Commando Solo Special Mission Equipment which broadcasts PSYOP television and radio messages to target audiences in denied areas. Enhancements are periodically required to meet theater commander operational requirements and maintain compatibility with U.S. Army Special Operations Command PSYOP forces equipment upgrades to allow in-flight receipt of PSYOP products for dissemination. The program acquires and integrates into the EC-130J commercial and GOTS systems to replace or enhance current system capabilities and address equipment shortfalls due to obsolesce.

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

Date: FEBRUARY 2005

Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Aviation /Project D615
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Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SOF Aviation	36.795	20.311	7.014	2.994	2.355	2.767		10.273
RDT&E Articles Quantity								

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: MH-60L/K/M, MH-47D/E/G, and MH-6 Mission Enhanced Little Bird. Efforts include:

- **MH-47/MH-60/A/MH-6M Aircraft.** (1) Develops a follow-on weapon system to the currently fielded M-134 Mini Gun. Replacement will be lighter and more reliable/maintainable with improved suppressive fire capability. (2) Completes nonrecurring engineering, integration and testing for MH-47 Service Life Extension Program (SLEP). (3) Begins development of a fly-by-wire flight control system for the MH-60. (4) Develop a digital Auto Flight Control System (AFCS) for the MH-47 aircraft. (5) Continues development of the A/MH-6M aircraft by improving the tail rotor drive train, adding YAW stability augmentation system and redesigning the vertical fin to improve tail rotor control and pilot workload.
  
- **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) Begins development of a Low Probability of Intercept/Low Probability of Detection (LPI/LPD) Obstacle Avoidance/Cable Warning system. (3) Begins development of 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. (4) Develops and qualifies an infrared exhaust suppressor for MH-47 aircraft. (5) Develops and qualifies a Common Avionics Architecture for Penetration radar altimeter. (6) Integrates the Intelligence Broadcast Receiver (IBR) into the Common Avionics Architecture System for the MH-47 and MH-60 aircraft.

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

Date: FEBRUARY 2005

Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Aviation /Project D615
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B. Accomplishments/Planned Program				
	FY04	FY05	FY06	FY07
MH-47/MH-60/A/MH-6M – Aircraft	13.058	3.060	7.014	2.994
RDT&E Articles Quantity				
<p>FY04 Continued nonrecurring engineering and integration for the MH-47 SLEP. Began engineering development for the MH-60 fly-by-wire flight control system. The Army has adopted fly-by-wire technology. Funding for future fly-by-wire development has been transferred to the Army beginning in FY05. Began development of the digital AFCS for the MH-47 aircraft. Continue tail rotor drive train improvements for the A/MH-6M.</p> <p>FY05 Continues development of tail rotor drive train for the A/MH-6M aircraft.</p> <p>FY06 Begins development of replacement for the M-134 Mini Gun. Completes development of A/MH-6M tail rotor drive train improvement.</p> <p>FY07 Continues development of replacement for the M-134 Mini Gun.</p>				
	FY04	FY05	FY06	FY07
MH-47/MH-60 – Avionics/Sensors	23.737	17.251		
RDT&E Articles Quantity				
<p>FY04 Continued development of assault and attack FLIR systems to replace aging Q-16B and D systems for the fleet of ARSOA aircraft. Continued development and testing of a rotary wing TF/TA navigation system. Completed OA/CW development and testing. Completes the qualification of the radar altimeter and the infrared exhaust suppressor. Completes the integration of the IBR on ARSOA aircraft.</p> <p>FY05 Continue development and testing of assault and attack FLIR systems. TF/TA navigation system has become a joint Army SOF and Air Force SOF program with the Air Force assuming the role as the lead developer.</p>				

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

Date: FEBRUARY 2005

Appropriation/Budget Activity  
RDT&E BA # 7

Special Operations Forces (SOF) Aviation /Project D615

**C. Other Program Funding Summary:**

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
Rotary Wing Upgrades & Sustainment	575.263	205.066	129.748	83.525	59.086	45.403	99.831	56.804	Cont.	Cont.
MH-47 SLEP		152.128	83.737	60.210	60.363	54.259	38.657	7.615	Cont.	Cont.
MH-60 SOF Modernization Program		82.037	29.629	96.596	164.744	126.752	128.288	153.230	Cont.	Cont.

D. Acquisition Strategy. A/MH-6 - This effort provides necessary drive train analyses, component development and testing, and test support/data analysis efforts required to improve operational safety margins of the 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 and the 2500 Shaft Horsepower alternate engine for the MH-60 aircraft and develops and qualifies the replacements for the M-134 weapons system. The program leverages engineering and production assets from the CH-47F remanufacture and UH-60 M production programs (both funded by the Army) that will minimize costs required to install special operations forces-peculiar modernization initiatives. A competitive source selection process will be held for the MH-60 alternate engine and the 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.

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				PSYOP Advanced Development /D476							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Primary Hardware Dev	MIPR	Natick Lab, Natick, MA	1.582								1.582
	MIPR	NAVAIR, St Inigoes, MD	0.132								0.132
	MIPR	NAVAIR, St Inigoes, MD	0.168								0.168
	ALLOT	Army-CECOM, Ft Monmouth, NJ	3.655								3.655
	MIPR	DOE, Nat'l Engr Lab, Idaho Falls, ID	3.240								3.240
	TBD	TBD				0.500	Dec-05			Cont.	Cont.
	TBD	Various						6.092	Various	Cont.	Cont.
Systems Engineering	ALLOT	Army-CECOM, Ft Monmouth, NJ	1.336								1.336
	REQN	Various	2.141								2.141
	MIPR	SPAWAR, Charleston, SC	0.060								0.060
	MIPR	NAVAIR, St. Inigoes, MD				0.200	Dec-05	0.200	Dec-06		
	REQN	Lockheed Martin, Owego, NY				3.500	Mar-06			Cont.	Cont.
Subtotal Product Dev			12.314			4.200		6.292		Cont.	Cont.
Remarks:											
Development Spt											
Subtotal Spt											
Remarks:											
Developmental Test & Eval	Various	Various	0.113			0.855	Jan-06	1.200	Jan-07	Cont.	Cont.
	MIPR	Army ATC, Aberdeen Prov Gd, MD	0.723	0.035	Jan-05					Cont.	Cont.
	MIPR	Soldier Biological Cmd, Natick, MA	0.546								0.546
	MIPR	JITC, Ft Huachuca, AZ	1.844							Cont.	Cont.
	MIPR	USASOC, Ft Bragg, NC		0.296	Jan-05						0.296
Subtotal T&E			3.226	0.331		0.855		1.200		Cont.	Cont.
Remarks:											
Contractor Engineering Spt											
Subtotal Management											
Remarks:											
Total Cost			15.540	0.331		5.055		7.492		Cont.	Cont.
Remarks:											

Exhibit R-4, Schedule Profile														Date: FEBRUARY 2005																		
Appropriation/Budget Activity								Program Element Number and Name																Project Number and Name								
RDT&E/7								PE1160404BB/Special Operations Tactical System Development																Project D476/PSYOP Advanced Development								
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
POBS FABS Testing				△	—	△																										
POBS AOA Study								△	—	△																						
POBS SOMS B (V)2 Testing										△																						
POBS MPC Testing					△	—	△																									
POBS LRBS UAV-P Testing												△	—	△				△	—	△												
POBS LRBS Scatterable Media Testing												△			△			△														
Psychological Planning Operations Analysis System (POPAS) Testing															△			△														
POBS Modernization												△			△	—	△					△	—	△	△	—	△	△	—	△		
Commando Solo Narrowband Transceiver Integration														△	—	△																

<b><u>Exhibit R-4a, Schedule Profile</u></b>				Date: FEBRUARY 2005					
<u>Appropriation/Budget Activity</u> RDT&E/7		<u>Program Element Number and Name</u> PE1160404BB/Special Operations Tactical Systems Development			<u>Project Number and Name</u> Project D476/PSYOP Advanced Development				
<u>Schedule Profile</u>		<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>
POBS FABS Testing		4Q	1-2Q						
POBS AOA Study			4Q	1-4Q					
POBS SOMS B (V)2 Testing			2Q						
POBS MPC Testing			1-2Q						
POBS LRBS UAV-P Testing				4Q	1-2Q	3-4Q			
POBS LRBS Scatterable Media Testing				2Q	2Q	2Q			
POPAS Testing					2Q	2Q			
POBS Modernization				2Q	1-4Q		1-4Q	1-4Q	1-4Q
Commando Solo Narrowband Transceiver Integration				2-4Q					

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Mission Planning Environment/Project S350	

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SOMPE	2.473	6.400	3.909	3.841	3.960	4.065	4.171	4.282
RDT&E Articles Quantity								

A. Mission Description and Budget Item Justification: The project title was changed to Special Operations Mission Planning Environment (SOMPE) from Special Operations Forces (SOF) Planning and Rehearsal System (SOFPARS) to better capture the description and purpose of this project. SOMPE provides automated integrated mission planning and execution tools required for time critical command and control of globally deployed SOF and, if required, coalition forces. SOMPE 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. SOMPE 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. SOMPE develops and integrates software applications.

B. Accomplishments/Planned Program:

	FY04	FY05	FY06	FY07
SOF Core Mission Planning Software	1.180	1.748	1.416	1.525
RDT&E Articles Quantity				

FY04 Continued development of Portable Flight Planning Software (PFPS), current joint-service route planning software. First-look migration evaluation of Joint Mission Planning System (JMPS), future joint-service route planning software. Began development and integration of software automation tools to meet SOF-wide mission planning requirements.

FY05 Continue SOF-wide software development and integration. Continue migration evaluation and transition planning to JMPS.

FY06 Continues SOF-wide software development and integration. Begins development of SOF-specific functionality in JMPS modules.

FY07 Continues SOF-wide software development and integration. Continues development of SOF-specific functionality in JMPS modules.

	FY04	FY05	FY06	FY07
Deferred/Future Requirements for Air	0.564	0.549	1.228	1.004
RDT&E Articles Quantity				

FY04 Continued to develop and integrate aircraft/weapons/electronics (AWE) enhancements and interfaces with joint systems.

FY05 Continue to develop AWE enhancements and interfaces with joint systems. Evaluate AWE migration to JMPS.

FY06 Begins AWE migration to JMPS for aircraft platforms.

FY07 Continues AWE migration to JMPS for aircraft platforms.



<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Mission Planning Environment/Project S350	

	FY04	FY05	FY06	FY07
Development and Modification of TSOC Automation Tools (formerly included in PFPS)	0.518	3.771	0.915	0.912
RDT&E Articles Quantity				

FY04 Began TSOC-level software development and integration.  
 FY05 Continue the development and integration of TSOC automation tools to meet planning requirements. Begin the development of TSOC Command and Control (C2) nodes to meet situational awareness requirements.  
 FY06 Continues the development and integration of TSOC automation tools and C2 nodes.  
 FY07 Continues the development and integration of TSOC automation tools and C2 nodes.

	FY04	FY05	FY06	FY07
Test and Evaluation of Core Software	0.211	0.332	0.350	0.400
RDT&E Articles Quantity				

FY04 Continued test and evaluation on core software, installable software modules, AWE and aircraft flight performance models.  
 FY05 Continue test and evaluation on core software, installable software modules, AWE and flight performance models. Commence test and evaluation on SOF-wide mission planning automation tools and TSOC C2 nodes.  
 FY06 Continues the test and evaluation of SOF-wide automation tools and C2 nodes.  
 FY07 Continues the test and evaluation of SOF-wide automation tools and C2 nodes.

C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	To Complete Cont.	Total Cost Cont
PROC, SOMPE	0.360	0.191								

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>	Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7		Special Operations Mission Planning Environment/Project S350	

D. Acquisition Strategy. Develop mission planning software to support SOF operations by leveraging ongoing personal computer-based efforts including service C2 efforts for situational awareness and mission planning efforts such as PFPS under the Air Force Mission Support System program and migration to the JMPS. 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. Maximizes 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.

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Mission Planning Environment (SOMPE) /S350							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Subtotal Product Dev											
Remarks:											
Development Support	C/CPFF	CAS, Huntsville, AL	3.194	0.549	Dec-04	1.228	Dec-05	1.004	Dec-06	Cont.	Cont.
	C/CPFF	LMFS, Owego, NY	7.629								7.629
	Various	Various	0.847								0.847
Software Dev/Integ	SS/CPFF	GTRI, Atlanta, GA	5.219	1.748	Various	1.416	Various	1.525	Various	Cont.	Cont.
	T&M	Tybrin, Ft Walton Beach, FL	5.346								5.346
	Various	Various	2.099								2.099
	Various	Various	3.771								3.771
Subtotal Spt			24.334	6.068		3.559		3.441		Cont.	Cont.
Remarks:											

Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2005						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Mission Planning Environment (SOMPE) /S350							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Developmental Test & Eval	MIPR	46th FTS, Hurlburt Field, FL	1.450							Cont.	Cont.
	SS/CPFF	ARINC, Annapolis, MD	1.009								1.009
	SS/CPFF	Salinas Tech, FL	0.017								0.017
	C/CPFF	CAS, Huntsville AL		0.332	Dec-04	0.350	Dec-05	0.400	Dec-06	Cont.	Cont.
Operational Test & Eval GFE	MIPR	18th FTS, Hurlburt Field, FL	0.663								0.663
	MIPR	Integrated Aviation Systems 21 Working Group Ft Campbell, KY	0.279								0.279
Subtotal T&E			3.418	0.332		0.350		0.400		Cont.	Cont.
Remarks:											
Contractor Engineering Spt	PO	CAS Inc, Huntsville, AL	4.206								4.206
Government Engineering Spt	ALLOT	AATD, Ft Eustis, VA	7.881								7.881
Travel	ALLOT	SOF PMO Ft Eustis, VA	0.070								0.070
Overhead	ALLOT	SOF PMO Ft Eustis, VA	0.092								0.092
Subtotal Management			12.249	0.000		0.000		0.000			12.249
Remarks:											
Total Cost			40.001	6.400		3.909		3.841		Cont.	Cont.
Remarks:											

Exhibit R-4, Schedule Profile													Date: FEBRUARY 2005																			
Appropriation/Budget Activity					Program Element Number and Name													Project Number and Name														
RDT&E/7					PE1160404BB/Special Operations Tactical System Development													Project S350/SOMPE														
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Portable Flight Planning System (PFPS)	▲									△																						
JMPS Migration										△																						△
Mission Planning Module	▲					△				△					△					△							△					△
AWE Enhancements	▲					△				△					△					△							△					△
AWE to UPC (JMPS Conversion)										△																						△
FPM Enhancements	▲					△				△					△					△							△					△
SOF-Wide Automation Tools	▲					△				△					△					△							△					△
System Interfaces	▲																															△
TSOC C2 Planning Tools			▲			△				△					△					△							△					△
TSOC C2 Nodes				△						△					△					△							△					△
Software Development Testing	▲																															△

<u>Exhibit R-4a, Schedule Profile</u>				Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u>	<u>Program Element Number and Name</u>			<u>Project Number and Name</u>				
RDT&E/7	PE1160404BB/Special Operations Tactical Systems Development			Project S350/SOMPE				
<u>Schedule Profile</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>
Mission Planning Environment Software Suite								
Portable Flight Planning System (PFPS) Releases	1-4Q	1-4Q	1-2Q					
Joint Mission Planning System (JMPS)			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Mission Planning Modules	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Aircraft/Weapons & Electronics Software Modules								
Enhancements required by PFPS Upgrades	1-4Q	1-4Q	1-4Q					
AWE to UPC (JMPS Conversion)			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Flight Performance Model Enhancements	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Development of Automated Tools								
SOF-Wide Automation Tools	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Software Interfaces for Interoperability	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
TSOC C2 Planning Tools	3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
TSOC C2 Nodes		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Software Development Testing	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

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

Date: FEBRUARY 2005

Appropriation/Budget Activity RDT&E.A BA # 7	Weapons and Support Systems Advanced Development /Project S375
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Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Weapons and Support Sys Adv Dev	8.989	5.322	10.175	5.524	4.330	3.330	2.491	2.526
RDT&E Articles Quantity								

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. This program was made a sub-project under the SOF Personal Equipment Advanced Requirements (SPEAR) program in and all resources were transferred under that program beginning in FY 2006.
  
- **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 for the conduct of counter-sniper operations.
  
- **Integrated Night/Day Observation/Fire Control (INOD).** The INOD provides the SOF sniper with a lightweight, low signature/fire control and observation device which allows the sniper to detect, acquire, and engage targets out to the weapon's maximum effective range under day/night conditions. The INOD allows the sniper to go from day to night operations without re-zeroing. This system will include sensor fusion of both image intensification and thermal infrared sensors.
  
- **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 program increase by a FY 2004 congressional add and supplemental funds.

Appropriation/Budget Activity  
RDT&E.A BA # 7

Weapons and Support Systems Advanced Development /Project S375

- **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) was a subproject of the M4MOD program to further enhance the performance of SOF equipment. The SCAR was broken out as a separate program and will be listed separately on this exhibit. The SCAR will provide an enhanced family of weapons. This program was increase by a FY 2004 and FY 2005 congressional add.
- **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 PTLT 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.
- **SOF Combat Assault Rifle (SCAR).** SCAR is an evolutionary acquisition – incremental approach that will provide the SOF operator with a 5.56 mm (SCAR-L) and a 7.62mm (SCAR-H) family of rifles that are modular in barrel length. SCAR variants will replace a suite of weapons currently in the SOF inventory of weapons.
- **SOF Tactical Airborne Parachute System (SOFTAPS).** The SOFTAPS/MC-6 is a static line deployed, steerable, parachute system comprised of a Commercial-Off-The-Shelf (COTS) main canopy, new personnel harness sub-assembly, and new reserve parachute subassembly. Capabilities include; a 19 feet per second (fps) rate of descent, improved turn-and-glide capability over the current system, reduced opening shock, and improved system reliability. The MC-6 will be capable of operations on drop zones at high elevation with greater reliability and will sustain less damage than the current system, MC1-1D/E.
- **SOF Personal Equipment Advanced Requirements (SPEAR).** SPEAR develops and acquires items that provide increased or enhanced capabilities in individual protection survivability, load bearing and dismounted mobility for the SOF operator.



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

Date: FEBRUARY 2005

Appropriation/Budget Activity  
RDT&E.A BA # 7

Weapons and Support Systems Advanced Development /Project S375

- **Combat Casualty Care Equipment – Kit (CCCEKIT).** The CCCEKIT is a technology transfer initiative to identify a variety of medical items and equipment approved by the Food and Drug Administration (FDA) to include intraosseous infusion devices, patient monitoring and assessment devices, emergency airway Kits, and devices that support patient management and enroute care capabilities for the far-forward treatment of SOF casualties in remote and austere environments.

**B. Accomplishments/Planned Program**

	FY04	FY05	FY06	FY07
BALCS	.205			
RDT&E Articles Quantity	150			
FY04 Conducted ballistics testing on SOF multi hit APM2 plates and other non-SOF plates for the purpose of establishing a body armor ballistics protection database. All resources for this program transferred to SPEAR as a sub-project beginning in FY05.				
	FY04	FY05	FY06	FY07
FSDS			.510	.527
RDT&E Articles Quantity				
FY06 Conduct test and evaluation of on-going Gunfire Detection System (GDS) performance improvements to enhance ShotGuard software accuracy and configuration improvements to provide wireless connectivity with integrated GPS and compass.				
FY07 Test and evaluation of enhanced data interface acquisition module (DIAM) for three array configuration.				
	FY04	FY05	FY06	FY07
INOD			.510	
RDT&E Articles Quantity			10	
FY06 Develop a dual band INOD system that will allow the sensor fusion of both image intensification and thermal infra-red.				
	FY04	FY05	FY06	FY07
LCMR	.963		3.570	
RDT&E Articles Quantity				
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.				
FY06 Improve the functionality and capability of the pre-production LCMRs through spiral development. Conduct low-rate initial production decision.				

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

Date: FEBRUARY 2005

Appropriation/Budget Activity RDT&E.A BA # 7	Weapons and Support Systems Advanced Development /Project S375
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	FY04	FY05	FY06	FY07
M4MOD	4.110	0.250		.243
RDT&E Articles Quantity				
FY04 Researched, developed and tested the next generation day/night and various next generation lasers and continued efforts on the enhanced grenade launcher module. SCAR funding was broken out of M4MOD and placed into a separate SCAR program in POM 06. FY05 Continued research, development and testing of advances to weapon accessories. FY07 Test and evaluation of Mini Day/Night Sight (MDNS) project improvements.				
	FY04	FY05	FY06	FY07
NVD	1.069	.928		
RDT&E Articles Quantity		2		
FY04 Began the design of the new Precision Target Locator Designator (PTLD). The PTLD will replace the SOF Laser Marker designator and the Mk VII and Viper laser range finders with one device. FY05 Complete the design and begin the user testing of the PTLD.				
	FY04	FY05	FY06	FY07
PLTD		2.737		
RDT&E Articles Quantity		30		
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.				
	FY04	FY05	FY06	FY07
SCAR	0.842	1.407		
RDT&E Articles Quantity				
FY04 Conducted pre-program activities, MS B decision, source selection and early user assessments and developmental testing on candidate SCAR weapon systems. FY05 Award contract(s) to enhance SCAR engineering test units and to conduct development and operational testing.				
	FY04	FY05	FY06	FY07
SOFTAPS	1.800			
RDT&E Articles Quantity				
FY04 Conducted developmental and operational testing and pre-production program activities.				

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

Date: FEBRUARY 2005

Appropriation/Budget Activity RDT&E.A BA # 7	Weapons and Support Systems Advanced Development /Project S375
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	FY04	FY05	FY06	FY07
SPEAR			5.279	4.243
RDT&E Articles Quantity				

FY06 Conduct market surveys for commercial off the shelf (COTS) products to conduct combat evaluations and/or conduct competitive source selections to initiate development of the next generation body armor, environmental protection, ballistic eyewear, identify friend or foe, maritime equipment, modular integrated communications helmet and survival equipment.  
 FY07 Continue development of the next generation body armor, environmental protection, ballistic eyewear, identify friend or foe, maritime equipment, modular integrated communications helmet and survival equipment, and initial market surveys for assault equipment.

	FY04	FY05	FY06	FY07
CCCEKIT			.306	.511
RDT&E Articles Quantity				

FY06 Enter concept development for modernization of SOF medical capabilities for operating in austere environments. Initiate prototype demonstrations of lighter, more efficient medical Sets, Kits and Outfits (SKOs) and far-forward surgical capabilities.  
 FY07 Conduct operational assessment of SKOs in preparation for procurement and fielding.

C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
Small Arms and Weapons	103.367	43.817	119.372	124.527	93.712	37.499	71.043	79.398	Cont.	Cont.

D. Acquisition Strategy.

- BALCS. Maximizes the use of COTS and Non-Developmental Item (NDI) 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 limited Fielding

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RDT&E.A BA # 7

Weapons and Support Systems Advanced Development /Project S375

and Deployment Release.

- **INOD.** The INOD system is an evolutionary acquisition program that integrates emerging technology into the latest SOF sniper sights. This strategy supports the development of a new, dual band sensor system that will combine both image intensification and thermal infra-red on one display. This will improve the SOF operator's ability to identify targets in periods of smoke, fog, and other battlefield obscurants.
- **LCMR.** Transitioned this program from a Science and Technology effort, with two working prototypes. Conduct additional research and engineering development to enhance performance and reliability of pre-production prototypes.
- **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 spiral develops new capabilities in block upgrades that are first developed and tested, and then fielded to the full spectrum of SOF operators. Future carbine programs (SCAR) will leverage and then drive the advancement of accessories within this program. All SOF weapons programs leverage M4MOD to increase operational effectiveness. Blocks include a program to develop a pocket scope mount, an enhanced M203 capability, family of muzzle brake suppressors, shot counter and numerous other components designed to enhance the capabilities of the weapon while at the same time combining an increasing capability.
- **NVD.** Development of next generation NVD. Program will use evolutionary acquisition approach.
- **PLTD.** The PLTD program will leverage an Army warfighter rapid acquisition program to develop a SOF version of a laser targeting device capable of providing geo-location of a target for the delivery of global positioning system guided munitions. This version is required to improve the accuracy of coordinate geo-location to eliminate the possibility of fratricide incidents.
- **SCAR.** The SCAR effort will use an evolutionary acquisition approach.
- **SOFTAPS.** The SOFTAPS/MC-6 program leverages COTS parachute technology currently used by SOF and the developmental efforts of the U.S. Army Advanced Tactical Parachute System (ATPS) program for its harness, reserve parachute subassembly, and pack tray. Capitalizes on the SF-10A proven capabilities and develops a unique riser assembly. The system will be Type Classified Army Standard for sustainment.

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

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- **SPEAR.** The SPEAR program is an evolutionary acquisition program that utilizes a variety of acquisition methods, including COTS, Modified COTS (MCOTS), NDI and developmental acquisition strategies to accomplish program objectives. Many items will undergo spiral development to achieve continuous improvement and objective level requirements. Maximum use of Javits-Wagner-O'Day set asides (i.e., National Institute of the Severely Handicapped) will be used.
- **CCCEKIT.** The CCCEKIT will leverage FDA approved COTS equipment and devices to provide modernized, standardized SOF medical life saving capabilities for use in austere environments during extended delays in casualty evacuation.

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Weapons Systems Advance Development/S375							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Hardware Dev											
BALCS (Test Articles)	Various	PM Spear, Natick, MA	0.050								0.050
FSDS	FFP/T&M	PM-CCS, Picatinny, NJ				0.310	TBD	0.312	TBD	Cont.	Cont.
INOD	CPFF	USSOCOM, MACDILL				0.405	TBD			Cont.	Cont.
LCMR	TBD	PM LCMR, Ft. Monmouth, NJ	0.150			0.867	TBD			Cont.	Cont.
M4MOD	Various	NSWC-Crane, Crane, IN	4.963	0.250	Various					Cont.	Cont.
NVD	TBD	Various	2.504	0.287	Various					Cont.	Cont.
PLTD	TBD	PM Sensors & Lasers, Ft. Belvoir, VA		2.000	Various					Cont.	Cont.
SPEAR	Various	PM Spear, Natick, MA	0.100			0.369	TBD	0.297	TBD	Cont.	Cont.
TECH TRANSFER: CCCEKIT	Various	Various				0.306	Various	0.511	Various	Cont.	Cont.
Subtotal Product Dev			7.767	2.537		2.257		1.120		Cont.	Cont.
Remarks:											
Development Spt											
LCMR	TBD	PM LCMR, Ft. Monmouth, NJ	0.085			0.357	TBD			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.413							Cont.	Cont.
NVD	TBD	Various	0.974	0.231	Various					Cont.	Cont.
PLTD	TBD	PM Sensors & Lasers, Ft. Belvoir, VA		0.250	Various					Cont.	Cont.
SCAR	ALLOT	NSWC-Crane, Crane, IN	0.443							Cont.	Cont.
SPEAR	Various	PM Spear, Natick, MA	0.025			0.211	TBD	0.170	TBD	Cont.	Cont.
SOFTAPS	Various	Soldier Systems Center, Natick, MA	0.408							Cont.	Cont.
Integrated Logistics Spt											
LCMR	TBD	PM LCMR, Ft. Monmouth, NJ	0.550			0.255	TBD			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.214							Cont.	Cont.
SPEAR	ALLOT	PM Spear, Natick, MA	0.050			0.528	TBD	0.424	TBD	Cont.	Cont.
SOFTAPS	Various	TACOM, ILSC-SBC	0.011							Cont.	Cont.

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Weapons Systems Advance Development/S375							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Configuration Mgmt											
LCMR	ALLOT	PM LCMR, Ft. Monmouth, NJ	0.200			0.510	TBD			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.197					0.043	TBD	Cont.	Cont.
NVD	TBD	Various	0.382	0.061	Various					Cont.	Cont.
SPEAR	ALLOT	PM Spear, Natick, MA	0.025			0.211	TBD	0.170	TBD	Cont.	Cont.
Subtotal Spt			3.977	0.542		2.072		0.807		Cont.	Cont.
Remarks:											
Developmental Test											
LCMR	ALLOT	PM LCMR, Ft. Monmouth, NJ	0.500			0.255	Various			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.402					0.200	Various	Cont.	Cont.
PLTD	TBD	PM Sensors & Lasers, Ft. Belvoir, VA		0.487	Various					Cont.	Cont.
SCAR	ALLOT	NSWC-Crane, Crane, IN	0.179	0.475	Various					Cont.	Cont.
SPEAR	TBD	PM Spear, Natick, MA				0.792	Various	0.637	TBD	Cont.	Cont.
SOFTAPS	ALLOT	Yuma Proving Grounds, Yuma, AZ	1.110							Cont.	Cont.
Operational Test											
BALCS	SS/FFP	HP White Lab, Street, MD	0.070							Cont.	Cont.
FSDS	ALLOT	PM-CCS, Picatinny, NJ				0.075	TBD	0.115	TBD	Cont.	Cont.
INOD	CPFF	USSOCOM, MacDill				0.105	Various			Cont.	Cont.
LCMR	ALLOT	PM LCMR, Ft. Monmouth, NJ	0.500			0.408	Various			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.594							Cont.	Cont.
NVD	TBD	Various	0.650	0.249	Various					Cont.	Cont.
SPEAR	ALLOT	PM Spear, Natick, MA	0.346			1.320	Various	1.061	TBD	Cont.	Cont.
SCAR	ALLOT	NSWC-Crane, Crane, IN		0.457	Various					Cont.	Cont.
SOFTAPS	ALLOT	USA OTC, ABNSOTD, Ft. Bragg, NC	0.382							Cont.	Cont.
Subtotal T & E			4.733	1.668		2.955		2.013		Cont.	Cont.
Remarks:											

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Weapons Systems Advance Development/S375							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Government Eng Spt											
BALCS	ALLOT	PM SPEAR, Natick, MA	0.050							Cont.	Cont.
LCMR	ALLOT	PM LCMR, Ft. Monmouth, NJ	0.230			0.459	Various			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.125							Cont.	Cont.
SCAR	ALLOT	NSWC-Crane, Crane, IN		0.325	Various					Cont.	Cont.
SPEAR	ALLOT	PM Spear, Natick, MA				1.056	Various	0.849	TBD	Cont.	Cont.
Program Mgmt Spt											
BALCS	ALLOT	PM SPEAR, Natick, MA	0.025							Cont.	Cont.
LCMR	ALLOT	PM LCMR, Ft. Monmouth, NJ	0.412			0.357	Various			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.980							Cont.	Cont.
SCAR	ALLOT	NSWC-Crane, Crane, IN	0.200	0.100	Various					Cont.	Cont.
SPEAR	ALLOT	PM Spear, Natick, MA	0.035			0.476	Various	0.382	TBD	Cont.	Cont.
Travel											
BALCS	ALLOT	PM SPEAR, Natick, MA	0.010							Cont.	Cont.
FSDS	ALLOT	PM-CCS, Picatinny, NJ				0.125	TBD	0.100	TBD	Cont.	Cont.
LCMR	ALLOT	PM LCMR, Ft. Monmouth, NJ	0.136			0.102	TBD			Cont.	Cont.
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.384							Cont.	Cont.
NVD	TBD	Various	0.182	0.100	Various					Cont.	Cont.
SCAR	ALLOT	NSWC-Crane, Crane, IN	0.020	0.050	Various					Cont.	Cont.
SPEAR	ALLOT	PM Spear, Natick, MA	0.020			0.316	TBD	0.253	TBD	Cont.	Cont.
SOFTAPS	MIPR	Army T&E / USFS	0.017							Cont.	Cont.
Subtotal Management			2.826	0.575		2.891		1.584		Cont.	Cont.
Remarks:	Other Prior Year		0.221								
Total Cost			19.524	5.322		10.175		5.524		Cont.	Cont.



Date: FEBRUARY 2005

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																																																						
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011																														
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																											
1. Body Armor/Load Carrying System																																																											
Ballistic Plate Test																												▲	▲																														
Ballistic Plate Effectiveness Database																													▲	▲																													
Ballistic Plate Test Report																														▲																													
2. Family of Sniper Detection Systems																																																											
Block I Variant Hardware Development																																				△	—	—	—	—	△																		
Test, Evaluation & Demo																																					△	—	—	—	△																		
Down Select Block I Improvements																																								△																			
Block I Limited OT																																										△																	
Block I - MS Decision																																										△																	
Block II Variant Hardware Development																																														△	—	—	—	—	△								
Test, Evaluation & Demo																																															△	—	—	—	△								
Down Select Block II Improvements																																																△											
Block II Limited OT																																																			△								
Block II - MS Decision																																																			△								
Block III Variant Hardware Development																																																					△	—	—	—	—	△	
Test, Evaluation & Demo																																																						△	—	—	—	△	
Down Select Block III Improvements																																																							△				
Block III Limited OT																																																											△

Date: FEBRUARY 2005

Appropriation/Budget Activity		Program Element Number and Name																Project Number and Name																
RDT&E/7		PE1160404BB/Special Operations Tactical System Development																Project S375/Weapons and Support Systems Advanced Development																
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
2. Family of Sniper Detection Systems (Cont'd)																																		
Block III - MS Decision																																		△
3. Integrated Night/Day Observation/Fire Control Device																																		
Dual Band Hardware Development																																		△→△
DT/OT																																		△
4. Lightweight Counter Mortar Radar																																		
Developmental Test (DT) #1																																		▲
Operational Test (OT) #1																																		▲→▲
MS B																																		△
LRIP																																		△
MS C																																		△
FOC																																		△
5. M4MOD																																		
FMBS MS C																																		▲
MDNS DT/OT																																		▲
MDNS MS C (Multiple)																																		▲
Shot Counter DT/OT																																		▲
Shot Counter MS C																																		▲

Date: FEBRUARY 2005

Appropriation/Budget Activity	Program Element Number and Name																																Project Number and Name															
	RDT&E/7																PE1160404BB/Special Operations Tactical System Development																Project S375/Weapons and Support Systems Advanced Development															
	Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011																		
1		2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																
6. NVD (PTLD)																																																
MS A/B							△																																									
Developmental Test											△																																					
MS C												△																																				
7. PLTD																																																
MS A/B							△																																									
Developmental Test											△																																					
8. SCAR																																																
MS B			▲																																													
EUA				▲																																												
SCAR DT/OT/LUA											▲	←	▲																																			
9. SOFTAPS																																																
MS B				▲																																												
LIVE DT				▲	←	△																																										
OT							△																																									
MS C								△																																								
FUE													△																																			
10. SPEAR																																																
Protective Combat Uniform																																																

Date: FEBRUARY 2005

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																											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
10. SPEAR (Cont'd)																																
MS C							Δ																									
IOC											Δ																					
FOC													TBD																			
Modular Glove System																																
IOC											Δ																					
FOC													TBD																			
Footwear																																
MS A/B											Δ																					
DT												Δ																				
OT												Δ																				
MS C															Δ																	
IOC																Δ																
FOC													TBD																			
Tilting Titanium NOD Mount																																
IOC											Δ																					
FOC													TBD																			
Next Generation Body Armor																																
MS A/B								Δ																								

Date: FEBRUARY 2005

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																												
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
10. SPEAR (Cont'd)																																	
DT									△	→	△																						
OT											△	→	△																				
MS C													△																				
IOC															△																		
Backpacks																																	
MS A/B									△																								
DT											△																						
OT											△																						
MS C												△																					
IOC																△																	
Eye Protection																																	
MS A/B									△																								
DT											△																						
OT											△																						
MS C												△																					
IOC																△																	
Target ID and Acquisition																																	
MS A/B									△																								

Date: FEBRUARY 2005

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																											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
10. SPEAR (Cont'd)																																
DT																																
OT																																
MS C																																
IOC																																
Survival Equipment																																
MS A/B																																
DT/OT																																
MS C																																
IOC																																
11. TECH TRANSFER: CCCCEKIT																																
Concept Development																																
Prototype Demonstrations																																
Operational Assessment																																
Initial Fielding																																

<b>Exhibit R-4a, Schedule Profile</b>					Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u>		<u>Program Element Number and Name</u>			<u>Project Number and Name</u>				
RDT&E/7		PE1160404BB/Special Operations Tactical Systems Development			Project 375/Weapons and Support Systems Advanced Development				
<u>Schedule Profile</u>		<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>
1. BALCS									
Ballistic Plate Test		2-3Q							
Ballistic Plate Effectiveness Database		3-4Q							
Ballistic Plate Test Report		4Q							
2. FSDS									
Block I Variant - Hardware Development & Fabrication				3 - 4Q	1 - 3Q				
Test, Evaluation & Demo				4Q	1 - 3Q				
Down Select Block I Improvements					1Q				
Block I - Limited OT					4Q				
Block I - MS C Decision					4Q				
Block II Variant - Hardware Development & Fabrication						3 - 4Q	1 - 3Q		
Test, Evaluation & Demo						4Q	1 - 3Q		
Down Select Block II Improvements							1Q		
Block II - Limited OT							4Q		
Block II - MS C Decision							4Q		
Block III Variant - Hardware Development & Fabrication								3 - 4Q	1 - 3Q
Test, Evaluation & Demo								4Q	1 - 3Q
Down Select Block III Improvements									1Q
Block III - Limited OT									4Q
Block III - MS C Decision									4Q
3. INOD									
Dual Band Hardware Development				1 - 2Q					
DT/OT				2Q					
4. LCMR									
Developmental Test #1		1Q							
Operational Test #1		1-2Q							
Milestone B			2Q						
LRIP				3Q					
Milestone C					2Q				

<b>Exhibit R-4a, Schedule Profile</b>					Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u>		<u>Program Element Number and Name</u>			<u>Project Number and Name</u>				
RDT&E/7		PE1160404BB/Special Operations Tactical Systems Development			Project 375/Weapons and Support Systems Advanced Development				
<u>Schedule Profile</u>		<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>
4. LCMR (Cont'd)									
IOC					3Q				
FOC						2Q			
5. M4MOD									
FMBS MS C		1Q							
MDNS DT/OT			4Q						
MDNS MS C (Multiple)			4Q						
Shot Counter DT/OT			3Q						
Shot Counter MS C			4Q						
6. NVD (PTLD)									
MS A/B			2Q						
Developmental Test			4Q						
MS C				2Q					
7. PLTD									
MS A/B			1Q						
Developmental Test			4Q						
8. SCAR									
MS B		2Q							
EUA		4Q							
SCAR DT/OT/LUA			4Q	1Q					
9. SOFTAPS									
MS B		4Q							
LIVE DT		4Q	1Q						
OT			2Q						
MS C			3Q						
FUE				2Q					



<b>Exhibit R-4a, Schedule Profile</b>					Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u>	<u>Program Element Number and Name</u>				<u>Project Number and Name</u>				
RDT&E/7	PE1160404BB/Special Operations Tactical Systems Development				Project 375/Weapons and Support Systems Advanced Development				
<u>Schedule Profile</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	
10. SPEAR									
Protective Combat Uniform									
MS C		3Q							
IOC			2Q						
FOC				TBD					
Modular Glove System									
IOC			2Q						
FOC				TBD					
Footwear									
MS A/B			2Q						
DT			3Q						
OT			3Q						
MS C			4Q						
IOC				1Q					
FOC					TBD				
Tilting Titanium NOD Mount									
IOC			2Q						
FOC				TBD					
Next Generation Body Armor									
MS A/B			1Q						
DT			2-3Q						
OT			3-4Q						
MS C				1Q					
IOC				3Q					
Backpacks									
MS A/B			1Q						
DT			2Q						
OT			2Q						
MS C									
IOC			3Q						
Eye Protection			4Q						
MS A/B			1Q						

<b>Exhibit R-4a, Schedule Profile</b>					Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u>	<u>Program Element Number and Name</u>				<u>Project Number and Name</u>				
RDT&E/7	PE1160404BB/Special Operations Tactical Systems Development				Project 375/Weapons and Support Systems Advanced Development				
<u>Schedule Profile</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	
10. SPEAR (Cont'd)									
DT			2Q						
OT			2Q						
MS C			3Q						
IOC			4Q						
Target ID and Acquisition									
MS A/B			1Q						
DT			1Q						
OT			1Q-2Q						
MS C			3Q						
IOC				1Q					
Survival Equipment									
MS A/B			1Q						
DT/OT			2Q						
MS C			3Q						
IOC			4Q						
11. TECH TRANSFER: CCCCEKIT									
Concept Development			1 - 3Q						
Prototype Demonstrations			2 - 4Q						
Operational Assessment				1 - 2Q					
Initial Fielding				3Q					

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Training Systems /Project S625	

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SOF Training Systems	19.551	4.573	0	1.757	1.612	2.634	2.690	1.248
RDT&E Articles Quantity								

A. Mission Description and Budget Item Justification: This project funds the development, integration, and test of Special Operations Forces (SOF) simulator systems to support training and mission rehearsal. This project also funds subsequent upgrades necessary to avoid obsolescence and keep the simulators current with the aircraft configurations. Sub-projects include:

- MH-47G/MH-60-BLK-1 Combat Mission Simulator (CMS): Develops a common database format used to provide digital terrain data to the simulator sub-systems such as out-the-window view, sensor, threat, weather, and computer generated forces. The common environment developmental effort will enhance database correlation enabling increased levels of joint simulator interoperability necessary to support mission training and rehearsal. The common database will be initially tested and fielded on the first MH-47G CMS for the 160<sup>th</sup> Special Operations Aviation Regiment (SOAR) and serve as the standard for new simulators procured in the future. This database format will also be installed on existing simulators as part of future upgrades to achieve interoperability among SOF training and mission rehearsal assets.
- SOF Air to Ground Interface Simulator (SAGIS): Develops one transportable and one fixed-base prototype simulator to train Air Force Special Operations Command (AFSOC) and United States Army Special Operations Command (USASOC) Combat Controllers. This system will provide a training capability for ground unit personnel to interface with SOF aircrews to practice and rehearse Joint Close Air Support and Terminal Attack Control.
- AFSOC Simulator Block Upgrade: Funds the development of an electronic warfare simulation environment for the SOF C-130 Electronic Warfare Officer (EWO) training station.
- USASOC Simulator Block Upgrade: Funds the necessary upgrades to USASOC simulators to overcome obsolescence and concurrency issues and enhance mission rehearsal capabilities.
- 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.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Training Systems /Project S625	

B. Accomplishments/Planned Program				
	FY04	FY05	FY06	FY07
MH-47/60 CMS	8.332			
RDT&E Articles Quantity				
<p>FY04: Procured the development of a Common Database Environment for the new Common Avionics Architecture System configured MH-47G and MH-60 Block-1 CMSs to support Joint Distributed Mission Training/Distributed Mission Rehearsal. The joint common database architecture yields significantly higher levels of correlation between out-the-window view, sensors, threat, weather, and weapons effects both within the simulator and among simulators when conducting joint mission rehearsal in a networked environment.</p>				
	FY04	FY05	FY06	FY07
SAGIS	10.241	.452		
RDT&E Articles Quantity	2			
<p>FY04: Procured the development of one transportable and one fixed-base prototype simulator to train AFSOC and USASOC Special Forces Combat Controllers. These systems will provide the training capability for ground unit personnel to interface with SOF Aircrews to practice and rehearse Joint Close Air Support, Terminal Attack Control, and ordnance delivery.</p> <p>FY05: Continues the development of one transportable and one fixed-base prototype simulator to train AFSOC and USASOC Special Forces Combat Controllers. These systems will provide the training capability for ground unit personnel to interface with SOF Aircrews to practice and rehearse Joint Close Air Support, Terminal Attack Control, and ordnance delivery.</p>				
USASOC Simulator Block Upgrade	FY04	FY05	FY06	FY07
CMS	.978			1.757
RDT&E Articles Only				
<p>FY04: Upgraded various USASOC simulator devices to enhance mission rehearsal and training capability.</p> <p>FY07: Funds the necessary upgrades to USASOC simulators to overcome obsolescence and concurrency issues and enhance mission rehearsal capabilities.</p>				

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Training Systems /Project S625	

	FY04	FY05	FY06	FY07
AFSOC Simulator Block Upgrade		.958		
RDT&E Articles Quantity				

FY05: Funds the concept article development of an infrared and radar detection simulation environment for the Electronic Warfare Officer (EWO) training station.

	FY04	FY05	FY06	FY07
A/MH-6 Simulator Program		3.163		
RDT&E Articles Quantity				

FY05: Integrate a Mission Rehearsal visual system into the MH-6 simulator capable of utilizing existing TopScene databases to support an improved level of mission training and rehearsal capability for pilots participating in GWOT.

C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	To <u>Complete</u>	Total <u>Cost</u>
Proc, SOF Training Systems	62.383	51.030	13.897	12.659	62.485	15.668	35.969	14.202	Cont.	Cont.

D. Acquisition Strategy.

- FY05: Procure an MH 47G/60 BLK-1 suite of trainers (Desk Top Trainers, Part Task Trainers, and 2 CMSs incorporating a common architecture using a spiral development approach. Continue to upgrade existing devices as necessary to maintain aircraft concurrency and correct supportability deficiencies associated with obsolescence.

- FY06 & 07: Continue to upgrade existing devices as necessary to maintain aircraft concurrency and correct supportability deficiencies associated with obsolescence.

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces (SOF) Training System /S625							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
MH-47G/60M CMS	CPAF/FFP	PEO STRI, Orlando, FL	8.332								8.332
SAGIS - Increment 0	CPAF	PEO STRI, Orlando, FL	10.241	0.452	Jan-05						10.693
AFSOC Simulator Block Upgrade	FFP	Hill AFB, UT		0.958	Jan-05						0.958
USASOC Simulator Block Upgrade	Various	PEO STRI, Orlando, FL	0.978					1.757	Nov-06		2.735
A/MH-6 CMS	CPAF	PEO STRI, Orlando, FL	21.583	3.163	Jan-05						24.746
Subtotal Product Dev			41.134	4.573				1.757			47.464
Remarks:											
Total Cost			41.134	4.573				1.757			Cont.
Remarks:											

**Exhibit R-4, Schedule Profile** Date: FEBRUARY 2005

Appropriation/Budget Activity	Program Element Number and Name																Project Number and Name															
RDT&E/7	PE1160404BB/Special Operations Tactical System Development																Project S625/SOF Training System															
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MH60/47 CMS Common Database Development		▲	—	—	—	▲																										
SAGIS Development		▲	—	—	—	—	▲																									
USASOC Simulator Block Upgrade				▲	—	—	—	▲					▲	—	—	—	▲															
AFSOC SBUD					▲	—	—	▲																								

<u>Exhibit R-4a, Schedule Profile</u>				Date: FEBRUARY 2005					
<u>Appropriation/Budget Activity</u>	<u>Program Element Number and Name</u>			<u>Project Number and Name</u>					
RDT&E/7	PE1160404BB/Special Operations Tactical Systems Development			Project S625/SOF Training Systems					
<u>Schedule Profile</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	
MH-47G/60M CMS Common Database Development	2-4Q	1-2Q							
SAGIS Development	2-4Q	1-4Q							
USASOC Simulator Block Update (SBUD)	4Q	1-4Q		1-4Q					
AFSOC SBUD		1-4Q							



Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Communications Advanced Development S700	

Cost (\$ in million)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SOF Communications Advance Development	6.799	4.415	13.058	13.189			0.308	0.411
RDT&E Articles Quantity								

A. **MISSION AND DESCRIPTION:** This project provides for communication systems to meet emergent requirements to support Special Operations Forces (SOF). The SOF mission mandates that SOF systems remain technologically superior to any threat to provide a maximum degree of survivability. SOF units require communications equipment that improves their warfighting capability without degrading their mobility. Therefore, SOF Communications Equipment and Electronics Advanced Development is a continuing effort to develop lightweight and efficient SOF Command, Control, Communications, and Computer (C4) capabilities.

United States Special Operations Command (USSOCOM) has developed an overall strategy to ensure that Command, Control, Communications, Computer 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 the timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture employ the latest standards and technology by transitioning from separate systems to full integration within the infosphere. The infosphere is a multitude of existing and projected national assets that allows SOF elements to operate with any force combination in multiple environments. The sub-projects funded in this project 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).

#### OPERATIONAL ELEMENT (TEAM)

- Multi-Band Inter/Intra Team Radio (MBITR) provides lightweight, handheld, inter/intra team communications for Special Operations Forces (SOF). SOF teams conduct air, ground, and maritime missions across the entire operational spectrum. In the past, these missions required SOF teams to carry multiple handheld radios operating in several different frequency bands (VHF FM, VHF AM, UHF AM and UHF FM) to ensure positive communications. The MBITR provides each of these frequency bands in a single handheld radio with embedded Type 1 Communications Security (COMSEC). It provides SOF teams with the ability to communicate on a user selected frequency (30-512 MHz) using a single tactical handheld radio. It is interoperable with various agencies of the U.S. Government, Air Traffic Control and allied foreign forces. The MBITR is the platform for the development of Cluster 2 Joint Tactical Radio System (JTRS), Enhanced MBITR (JEM). The JTRS Cluster 2 JEM is the interim JTRS handheld radio solution and will provide capabilities such as enhanced Information Security (INFOSEC), Blue Force Tracking (BFT), Global Positioning System (GPS), beacon functions and waveform portability. The JEM will be

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Communications Advanced Development S700	

Software Communications Architecture compliant, which is one of the primary tenets of the JTRS program.

- MBITR Blue Force Tracking (BFT) was an initiative added in FY05 by Congress. This initiative provided research, engineering, and development support to implement BFT capability in the JTRS Enhanced MBITR (JEM).
- Multi-Band/Multi-Mission Radio (MBMMR). A joint SOF requirement, MBMMR provides a lightweight, secure, manpackable, multi-band transceiver capability operating in the following frequency bands: Very High Frequency (VHF)-FM, VHF-AM, and Ultra-High Frequency (UHF)-FM satellite communications in a single radio, reducing the number of radios required to be carried by each team. The program also acquires performance enhancements to meet emergent requirements and ensures compliance with evolving JTRS standards and Demand Assured Multiple Access satellite simulator systems.
- The SOF Tactical Assured Connectivity System (SOFTACS) program provides a deployable super high frequency quad-band (X, C, Ku, Ka) satellite communications and modular switching capability that supports high-capacity, voice, data and video at all classification levels. The Deployable Multi-Channel Satellite Communications (DMCS) transmission system and SOF Deployable Node (SDN) switching system has been designated the SOFTACS Transit Case Variant (TCV) and replaces the Downsized Deployable Satellite Terminal (DDST) and Deployable SCAMPI switching system and provides an interim solution for the wheeled variant. The TCV (DMCS/SDN) will support all SOF missions, and wide area connectivity (including video teleconferencing, psychological operations and tactical area networks), and interfaces with DISA Standard Tactical Entry Point (STEP) sites and SOF SCAMPI tactical gateways. The SOFTACS program includes both technological refreshments that are interoperable with legacy systems such as Ground Mobile Forces terminals and capital replacements to meet emerging requirements.
- SOFTACS Material Improvement and Corrosion Control was an initiative added in FY04 by Congress. This initiative provided research, analysis, engineering and development support to improve materials, packaging, coatings, maintenance technology and test evaluation processes used for communications equipment.
- Machine Based Language Translator (MBLT) provides a revolutionary capability for tactical, real-time, voice to voice multi-language capability. It supports SOF operations worldwide by maintaining highly perishable language translation proficiency, and provides immediate translation capability for SOF without general language training or training in rare dialects.
- Tactical Communications Systems Testbed initiative was added in FY05 by Congress. This initiative serves as a testbed to evaluate new technologies for SOF communications under a rapid prototyping concept. The focus is on four discrete efforts that have been recommended by

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Communications Advanced Development S700	

SOF users as having a significant potential impact to enhancing current capabilities: Tactical Wireless Communications Across the Battlespace; High Bandwidth WiMax; Real-Time/Near Real-Time Video Compression; and Information Assurance & Commercial-Off-The-Shelf compatibility.

**B. Accomplishments/Planned Program**

Cost (\$ in million)	FY04	FY05	FY06	FY07
MBITR	0.255	1.921	7.651	7.668
RDT&E Articles Quantity				
<p>FY04 Initiated development of a replacement COMSEC chip for the JEM.  FY05 This initiative was partially funded by a Congressional plus-up. Continues development of replacement COMSEC chip for the JEM, implements the JTRS Software Communications Architecture, and initiates development of BFT for MBITR.  FY06 Continues technology insertion for the JEM which will provide BFT, combat search and rescue functionality, improved data throughout networking, low probability of intercept/low probability of detection, simultaneous noise and data operations, GPS and enhanced SATCOM capabilities.  FY07 Continues technology insertion for the JEM.</p>				
Cost (\$ in million)	FY04	FY05	FY06	FY07
MBMMR	4.090		5.101	5.112
RDT&E Articles Quantity				
<p>FY04 An FY04 Congressional plus-up commenced development of a COMSEC chip to replace the MBMMR's obsolete one.  FY06 Continues development of a COMSEC chip to replace the MBMMR's obsolete one.  FY07 Continues development of a COMSEC chip to replace the MBMMR's obsolete one.</p>				
Cost (\$ in million)	FY04	FY05	FY06	FY07
Tactical Communications System Testbed Initiative		2.494		
RDT&E Articles Quantity				
<p>FY05 This initiates is an FY05 Congressional plus-up to initiate a tactical communications system testbed to evaluate new technologies for SOF communications under a rapid prototyping concept. Enhancements to existing SOF deployable communications systems will be evaluated under both laboratory and operational conditions, while focusing on four discrete efforts that will enhance current capabilities.</p>				
Cost (\$ in million)	FY04	FY05	FY06	FY07
SOFTACS – Material Improvement & Corrosion Control of Comm Equipment	2.454			
RDT&E Articles Quantity				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Communications Advanced Development S700	

FY04 This initiative was an FY04 Congressional plus-up. Evaluated environmental control unit composite packing materials for strength, durability and shock absorption techniques; evaluated materials and design concepts for rugged, repairable communications systems in extreme environments and unmanned situations; researched the possibility of developing multiple feed antenna assemblies; and researched and documented the current state of solid state high power amplifiers to include a comparison of size, weight, power consumption, heat dissipation, reliability, cost and other factors of solid state technology against traveling wave tube technology.

Cost (\$ in million)	FY04	FY05	FY06	FY07
MBLT			0.306	0.409
RDT&E Articles Quantity				

FY06 Begins development and assessment of one-way automated language translation capability for SOF tactical applications.  
 FY07 Completes development and assessment of one-way automated language translation capability for SOF tactical applications.

C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>
PROC, Comm/Electronics	73.961	42.903	69.898	42.843	82.595	52.583	51.567	24.007	Cont.	Cont.

- D. Acquisition Strategy:
- MBITR is a post-Milestone III fielded SOF communications system which is being upgraded to become software communications architecture (SCA) compliant as directed by OSD.
  - MBMMR is a post-Milestone III fielded SOF communications system which is being upgraded to alleviate the mission impact from an obsolete COMSEC chip.
  - SOFTACS is a post MS III evolutionary technology program that provides a deployable super high frequency quad-band (X, C, Ku, Ka) satellite communications and modular switching capability that supports high-capacity, voice, data and video at all classification levels.

Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2005						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				SOF Communications Advanced Development/S700							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Primary Hardware Dev											
Develop MBITR COMSEC Chip	MIPR	NSA, Ft Meade, MD	0.255	1.922	Jan-05					Cont.	Cont.
Develop MBMMR COMSEC Chip	CPFF	Raytheon's Network Centric Systems, Fort Wayne, IN	4.090			5.258	Dec-05	5.289	Dec-06	Cont.	Cont.
Material Improv & Corrosion Cntrl	SS - FFP	Concurrent Technologies Corp Largo, FL	2.454								2.454
Subtotal Product Dev			6.799	1.922		5.258		5.289		Cont.	Cont.
Remarks:											
Development Spt											
Initiate MBITR Tech Insertion	MIPR	Thales Comm Inc.; Clarksville, MD				7.500	Dec-05	7.500	Dec-06	Cont.	Cont.
RMWS	MIPR	SPAWAR-C	0.238								0.238
Machine Based Language Translator	MIPR	DARPA				0.150	Dec 05	0.200	Dec 06	Cont.	Cont.
Subtotal Spt			0.238			7.650		7.700		Cont.	Cont.
Remarks:											

Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2005						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				SOF Communications Advanced Development/S700							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Developmental Test & Eval											
Machine Based Language Translator Tactical Communication System Testbed Initiative	MIPR MIPR	NAVAIR SPAWAR-C		2.493	Feb-05	0.150	Dec 05	0.200	Dec 06	Cont.	Cont.
Subtotal T&E				2.493		0.150		0.200		Cont.	Cont.
Remarks:											
Contractor Engineering Spt											
Subtotal Management											
Remarks:											
Total Cost			7.037	4.415		13.058		13.189		Cont.	Cont.
Remarks:											

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2005																							
Appropriation/Budget Activity					Program Element Number and Name											Project Number and Name																		
RDT&E/7					PE1160404BB/Special Operations Tactical System Development											Project S700 SOF Communications Adv Dev																		
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
1. Develop MBITR COMSEC Chip				▲	—	—	△																											
2. MBITR Tech Insertion								△	—	—	△	△	—	—	△																			
3. MBITR BFT					▲	—	—	△																										
4. Develop MBMMR COMSEC Chip				▲	—	—	△	△	—	—	△	△	—	—	△																			
5. Develop Tactical Communications System Testbed					▲	—	—	△																										
6. Material Improvement & Corrosion Control of Comm (SOFTACS):			▲	—	—	—	△																											
7. Machine Based Language Translator								△	—	—	△	△	—	—	△												△	—	—	△	△	—	—	△





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2005
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations (SO) Intelligence Systems Development
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COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160405BB	46.680	49.372	33.167	27.018	26.016	31.928	24.234	24.753	Cont.	Cont.
S400, SO INTELLIGENCE	46.680	49.372	33.167	27.018	26.016	31.928	24.234	24.753	Cont.	Cont.

**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.

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

R-1 ITEM NOMENCLATURE / PROJECT NO.

PE 1160405BB Special Operations (SO) Intelligence Systems Development

**B. Program Change Summary:**

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Previous President's Budget	47.084	25.015	24.520	22.151
Current President's Budget	46.680	49.372	33.167	27.018
Total Adjustments	-0.404	24.357	8.647	4.867
Congressional Program Reductions		-1.000		
Congressional Rescissions				
Congressional Increases		26.500		
Reprogrammings	-0.404		8.647	4.867
SBIR Transfer		-1.143		

**Funding:**

**FY04:**

- Decreased funds (-\$.008M) were reprogrammed from the Remote Miniature Weather Station (RMWS) to sub-project S700 SOF Communications Advanced Development and (-\$.396M) to sub-project 3284 SOF Aircraft Defensive System for Directional Infrared Countermeasures.

**FY05:**

- Congressional plus-ups increased funds (\$26.500) to develop Remote Data Repository for SOJICC (\$2.000M); high density batteries for sensors and tags (\$2.500M); Unmanned Aerial Vehicle (UAV) near real-time video program (\$1.400M); wireless management and control project (\$3.800M); application specific integrated circuit technology design (\$3.500M); microelectromechanical systems (\$2.600M); Optimal Placement of Unattended Sensors (\$1.000M); High Altitude Long Endurance (\$1.500M); Joint Threat Warning System (\$4.900M); and Covert Waveform (\$3.300M).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations (SO) Intelligence Systems Development
<p>FY06:</p> <ul style="list-style-type: none"> <li>- Increased funds (+\$9.785 million) to begin development of Increment 2 upgrade to the Ground Signal Intelligence Kit (GSK) and the Team Transportable Increment 1 variant of Joint Threat Warning System (JTWS).</li> <li>- Decreased SOJICC and National Systems Support to SOF (NSSS) levels of effort (-\$0.971 and -\$0.525 million, respectively).</li> <li>- Increased funds (\$+.039) for Special Operations Command Research Analysis and Threat Evaluations System to continue efforts to develop a multi-level security guard.</li> <li>- Discontinued Special Operations Tactical Video System (SOTVS) evaluation of marketplace emergent systems (-\$0.020 million).</li> <li>- Increased funds (\$+.339) for Counterproliferation Analysis and Planning System (CAPS) to continue development of the CAPS database.</li> </ul> <p>FY07:</p> <ul style="list-style-type: none"> <li>- Increased funds (+\$5.991 million) to continue development of Increment 2 upgrade to the GSK and the Team Transportable Increment 1 variant.</li> <li>- Reduced SOJICC and NSSS levels of effort (-\$.965 and -\$0.533 million, respectively).</li> <li>- Discontinue SOTVS evaluation of marketplace emergent systems (-\$0.020 million).</li> <li>- Increased funds (\$+.394) for CAPS to continue development of the CAPS database.</li> </ul> <p>Schedule: In FY04, the JTWS GSK Milestone C (MS C) slipped from FY04/1Q to FY04/4Q due to hardware not meeting key performance parameters. This deficiency was corrected with the GSK completing testing satisfactorily and MS C being granted in Aug 04.</p> <p>Technical: The RMWS was moved to Program Element 1160404BB, Special Operations Tactical Systems Development, Project S700, Special Operations Communications Advanced Development, since RMWS did not qualify as a Tactical Intelligence and Related Activities program.</p>	

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

Date: FEBRUARY 2005

Appropriation/Budget Activity  
RDT&E BA # 7

Special Operations Intelligence/Project S400

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SO Intelligence	46.680	49.372	33.167	27.018	26.016	31.928	24.234	24.753
RDT&E Articles Quantity								

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 employs 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

Appropriation/Budget Activity  
RDT&E BA # 7

Special Operations Intelligence/Project S400

[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 operations in support of all SOF missions. Each JTWS variant will be capable of operation by a single, trained operator. The four variants are Ground SIGINT Kit, Team Transportable, Air, and Maritime. The Privateer, Silent Shield, and Improved SOF SIGINT Manpack System (I-SSMS) were consolidated under JTWS in FY02 under one JORD.
- 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.

Appropriation/Budget Activity  
RDT&E BA # 7

Special Operations Intelligence/Project S400

#### ABOVE OPERATIONAL ELEMENT (DEPLOYED)

- Special Operations Tactical Video System (SOTVS). The SOTVS/Reconnaissance Surveillance Target Acquisition (RSTA) program employs an EA strategy to meet SOF reconnaissance and surveillance mission requirements. The program consists of a family of interoperable digital Commercial-Off-the-Shelf (COTS) 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 OPERATIONAL ELEMENT (GARRISON)

- Special Operations Joint Interagency Collaboration Center (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 RDT&E funding at USSOCOM for overall program management. U.S. 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

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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 (GOTS)/COTS software.
- 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.
- Sensor Integration with Lithium Polymer Batteries is an initiative to develop high density lithium polymer batteries for low power SOCOM sensors and tags.
- Unattended Aerial Vehicle (UAV) Near Real-Time Video Program is an initiative to develop a smart-pull, geospatial situational awareness information system providing SOF the ability to exploit, in near-real-time, specific segments of UAV electro-optic/infrared video.
- Wireless Management and Control Program is an initiative to establish a wireless center of excellence and follow-on tools and techniques that focus on Wireless Communication Intelligence capabilities to map, exploit and actively manipulate wireless signals of interest. Developed technologies against wireless communications must withstand the rigors of field deployment and be sustainable and upgradeable

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to remain relevant against emerging adversary technologies.

- Application Specific Integrated Circuit Development is an initiative to establish a SOCOM dedicated center for RF transmitter and other application specific integrated circuits technology design and development.
- High Altitude Long Endurance is an initiative to develop Direction Finding antenna system for employment in high altitude airship, UAV, and JTWS–A platforms/systems.
- SOCOM Microelectromechanical Systems (MEMS) is an effort to recommend and evaluate candidate products for development at a state-of-the-art MEMS/nanotech facility.
- Covert Waveform program is an effort to develop a new Joint Tactical Radio System (JTRS)-compliant covert communication capability with embedded positive threat identification, using new Wavelet Packet Modulation technology.

**B. Accomplishments/Planned Program**

	FY04	FY05	FY06	FY07
MATT	0.953			
RDT&E Articles Quantity				
FY04 This initiative was partially funded by a Congressional plus-up. Completed development of an Embedded National Tactical Receiver and a common software baseline for SOF systems requiring an EIR.				
	FY04	FY05	FY06	FY07
NSSS SOF	1.269	1.283	.816	.834
RDT&E Articles Quantity				
FY04 Continued 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. FY06 Continues to leverage space intelligence, surveillance, and reconnaissance technology developments with SOF utility from the				



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National Community and Military Services. NSSS will assess the operational utility of leveraged and developed technology.  
FY07 Continues 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.

	FY04	FY05	FY06	FY07
JTWS	19.954	7.588	11.665	6.659
RDT&E Articles Quantity				

FY04 The bulk of this initiative was funded by Congressional Plus-ups. Completed Ground SIGINT Kit (GSK) development and operational testing, initiated the air variant development, and conducted an Advanced Concept Technology Demonstration (ACTD) of a Manpack Signals Intelligence (SIGINT) capability and a tactical wireless information display suitable for various mission profiles and requirements.  
FY05. This initiative was partially funded by a Congressional plus-up. Continues air variant development, initiates JTWS maritime development.  
FY06 Completes air variant test and evaluation. Commences development of the Team Transportable (TT) variant and GSK Increment 2 evolutionary technology insertion to the GSK.  
FY07 Completes TT development and test and evaluation of TT variant. Continues development of GSK Increment 2.

	FY04	FY05	FY06	FY07
OPUS	1.445	0.959		
RDT&E Articles Quantity				

FY04 This initiative was a congressional plus-up. Developed and demonstrated commercial technology used to identify the optimal placement of unattended sensors.  
FY05 This initiative is a congressional plus-up. Continues development and demonstration of commercial technology used to identify the optimal placement of unattended sensors.

	FY04	FY05	FY06	FY07
SOTVS	.019	.020		
RDT&E Articles Quantity				

FY04 Conducted 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.

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	FY04	FY05	FY06	FY07
SOJICC	3.678	4.279	1.485	1.587
RDT&E Articles Quantity				
<p>FY04 This initiative was partially funded by a Congressional Plus-up. Continued systems engineering and program management efforts to achieve data compatibility by integrating different COTS hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization.</p> <p>FY05 This initiative was partially funded by a Congressional Plus-up. Continue systems engineering and program management efforts to achieve data compatibility by integrating different COTS hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization. Develop a remote data repository.</p> <p>FY06 Continues systems engineering and program management efforts to achieve data compatibility by integrating different COTS hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization.</p> <p>FY07 Continues systems engineering and program management efforts to achieve data compatibility by integrating different COTS hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization.</p>				
	FY04	FY05	FY06	FY07
CAPS	14.872	15.540	17.210	17.938
RDT&E Articles Quantity				
<p>FY04 Supported 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.</p> <p>FY05 Continue 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.</p> <p>FY06 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.</p> <p>FY07 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.</p>				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005		
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	FY04	FY05	FY06	FY07
SOCRATES	1.869	1.875	1.991	
RDT&E Articles Quantity				
<p>FY04 Initiated efforts to develop a Multi-Level Security (MLS) 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.</p> <p>FY05 Continue efforts to develop a MLS 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.</p> <p>FY06 Complete efforts to develop a MLS 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.</p>				
	FY04	FY05	FY06	FY07
Integrated Survey Program (ISP)	0.936			
RDT&E Articles Quantity				
<p>FY04 Tested and integrated candidate replacement technologies for special events. Includes red-green-blue (color) integration with Laser Identification and Ranging technology via the Urban Reconnaissance ACTD. Commenced efforts to integrate ISP data with Operational Preparation of the Battlespace and funded user acceptance testing. Initiated software development for next-generation collection and production baselines.</p>				
	FY04	FY05	FY06	FY07
Sensor Integration with Lithium Polymer Batteries		2.397		
RDT&E Articles Quantity				
<p>FY05 This initiative is a Congressional Plus-up. Develops high density lithium polymer batteries for low power sensors and tags.</p>				
	FY04	FY05	FY06	FY07
UAV Near Real-Time Video Program		1.342		
RDT&E Articles Quantity				
<p>FY05 This initiative is a Congressional Plus-up. Develops a smart-pull, geospatial situational awareness information system providing SOF the ability to exploit, in near-real-time, specific segments of UAV electro-optic/infrared video.</p>				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005		
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	FY04	FY05	FY06	FY07
Wireless Management and Control Project		3.643		
RDT&E Articles Quantity				
FY05 This initiative is a Congressional Plus-up. Establishes a wireless center of excellence and follow-on tools and techniques that focus on Wireless Communication Intelligence.				
	FY04	FY05	FY06	FY07
Application Specific Integrated Circuit Development		3.354		
RDT&E Articles Quantity				
FY05 This initiative is a Congressional Plus-up. Establishes a dedicated center for radio frequency transmitter and other application specific integrated circuits technology design and development.				
	FY04	FY05	FY06	FY07
High Altitude Long Endurance		1.437		
RDT&E Articles Quantity				
FY05 This initiative is a Congressional Plus-up. Develops Direction Finding antenna system for employment in high altitude airship, UAV, and JTWS-A platforms/systems.				
	FY04	FY05	FY06	FY07
SOCOM MEMS		2.491		
RDT&E Articles Quantity				
FY05 This initiative is a Congressional Plus-up. This is an effort to recommend and evaluate candidate products for development at a state-of-the-art MEMS/nanotech facility.				
	FY04	FY05	FY06	FY07
Covert Waveform	1.685	3.164		
RDT&E Articles Quantity				
FY04 This initiative was a Congressional Plus-up. Began development of a new JTRS-compliant covert communication capability with embedded positive threat identification, using new Wavelet Packet Modulation technology. FY05 This initiative is a Congressional Plus-up. Continues development of covert communication capability with embedded positive threat identification, using new Wavelet Packet Modulation technology.				

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**C. Other Program Funding Summary:**

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	To <u>Complete</u> Cont.	Total <u>Cost</u> Cont.
PROC, SOF Intelligence Sys	29.195	31.870	27.642	14.932	17.554	31.780	39.073	35.062		

**D. Acquisition Strategy:**

- MATT is an EA 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 EA program that provides threat warning, force protection, enhanced situational awareness, and target acquisition information to SOF via signals intercept, direction finding and SIGINT. JTWS will employ continuing technology updates to address the changing threat environment.
- OPUS. Systems Readiness Center will leverage existing OPUS COTS technology to provide a capability to plan, coordinate and identify the optimal placement of unattended sensors.
- 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, Chemical and Biological Defense Programs, 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

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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.

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Intelligence Systems Development/PE1160405BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Intelligence/S400							
Actual or Budget Value (\$ in millions)											
Cost Categories	Contract		Total	Budget	Award	Budget	Award	Budget	Award		
(Tailor to WBS, or System/Item Requirements)	Method & Type	Performing Activity & Location	PYs Cost	Cost FY05	Date FY05	Cost FY06	Date FY06	Cost FY07	Date FY07	To Complete	Total Program
Primary Hardware Dev	MIPR	SPAWAR, Charleston, SC	16.816	6.343	Mar-05	7.566	Mar-06			Cont.	Cont.
	Form 9	GovConnection, Rockville, MD	0.065								0.065
	Form 9	Raytheon, Ft Wayne, IN	0.493								0.493
	Form 9	ProLogic Inc., Fairmont, WV	2.410								2.410
	Form 9	L3 Communications, Inc. San Diego, CA	0.300								0.300
SILPB	MIPR	Concurrent Technologies		2.399	Mar-05						
UAVNRTVP	MIPR	ITAC, Colorado Springs		1.343	Mar-05						
WMCP	MIPR	EWA, Fairmont, WV		3.646	Feb-05						
ASICD	MIPR	EWA, Fairmont, WV		3.357	Mar-05						
HALE	MIPR	TBD		1.438	Jan-05						
MEMS	MIPR	Blackbird Technologies/USF, Largo, FL		2.493	Feb-05						
Ancillary Hardware Dev											
Systems Engineering	Various	Various	1.228			2.162	Mar-06	3.523	Mar-07		6.913
	MIPR	SPAWAR, Charleston, SC	0.350								0.350
	MIPR	Lawrence Livermore National Labs, (LLNL) Livermore, CA	4.964								4.964
Materiel/Equipment											
Subtotal Product Dev			26.626	21.019		9.728		3.523		Cont.	Cont.
Remarks:											
DERF Funds:											
Primary Hardware Development	Various	Various									0.000
Development Spt	MIPR	SAF, Washington, DC	0.097	0.075	Jun-05					Cont.	Cont.
	MIPR	SPAWAR, Charleston, SC	0.605	0.045	Dec-04					Cont.	Cont.
	MIPR	Raytheon, Falls Church, VA	0.948								0.948
	MIPR	NSMA, Ft Washington, VA	0.450	0.287	Feb-05					Cont.	Cont.
	MIPR	TBD	0.035								0.035
	TBD	LLNL, Livermore, CA	14.927	15.514	Dec-04	17.438	Dec-05	18.137	Dec-06	Cont.	Cont.
Software Dev/Integ	MIPR	BTG, Inc., Fairfax, VA	1.255								1.255
	MIPR	TBD	2.634		Mar-05	2.500	Mar-06	2.000	Mar-07	Cont.	Cont.
		CECOM/MITRE, Ft Monmouth, NJ	3.703	2.468	Jan-05	1.456	Jan-06	1.552	Jan-07	Cont.	Cont.
		AF Space Battle Lab, Colorado Springs, CO	0.386	0.400	Nov-04					Cont.	Cont.
		ASAP Software, Buffalo Grove, IL	0.025								0.025
		ACTD-TBD	15.416								15.416
Covert Waveform	MIPR	EWA, Fairmont, WV		3.167	Jan-05						
SOJICC	MIPR	JTE, Eglin AFB, FL		1.919	Feb-05						

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Intelligence Systems Development/PE1160405BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Intelligence/S400							
Actual or Budget Value (\$ in millions)											
Cost Categories	Contract		Total	Budget	Award	Budget	Award	Budget	Award		
(Tailor to WBS, or System/Item Requirements)	Method & Type	Performing Activity & Location	PYs Cost	Cost FY05	Date FY05	Cost FY06	Date FY06	Cost FY07	Date FY07	To Complete	Total Program
Primary Hardware Development (Cont.)											
OPUS	MIPR	ProLogic Inc., Fairmont, WV		0.960	Feb-05						
Software Spt		Various	0.911								0.911
Training Development											
Integrated Logistics Spt											
Configuration Management											
Subtotal Spt			41.392	24.835		21.394		21.689		Cont.	Cont.
Remarks:											
DERF Funds (non-add):											
Software Dev/Tng	Various	Various	1.585								1.585
Training Development	FFP/C	EMC Corp, MacLean, VA	0.038								0.038
Developmental Test & Eval	MIPR	SPAWAR, Charleston, SC	0.630	0.528	May-05			0.100	Mar-07		1.258
OT&E	MIPR	SPAWAR, Charleston, SC	1.737								1.737
	MIPR	DESA, Kirtland, NM	0.217	0.020	Dec-04					Cont.	Cont.
		BTG, Tampa, FL	0.020								0.020
		Ft Huachuca, AZ	0.889	1.000	May-05	0.750	Mar-06	0.250	Mar-07		2.889
		NAVAIR, St. Inigoes, MD	0.031								0.031
Subtotal T&E			5.147	1.548		0.750		0.350		Cont.	Cont.
Remarks:											
Government Engineering Spt		SPAWAR, Charleston, SC	0.116								0.116
Program Management Spt	CPAF	Jacobs-Sverdrup, Tampa, FL	0.963	0.616	Jan-05	0.480	Jan-06	0.625	Jan-07	Cont.	Cont.
Travel	N/A	USSOCOM, MacDill AFB, FL	0.151	0.015	Various	0.015	Various	0.015	Various	Cont.	Cont.
Subtotal Management			1.230	0.631		0.495		0.640		Cont.	Cont.
Remarks:											
Government Engineering Spt	MIPR	SPAWAR, Charleston, SC	0.309	0.020	Nov-04	0.020	Nov-06	0.020	Nov-06	Cont.	Cont.
Program Management Spt	CPAF	Jacobs-Sverdrup, Tampa, FL	4.496	0.406	Jan-05	0.406	Jan-07	0.406	Jan-07	Cont.	Cont.
Space Technologies	MIPR	Various	9.152	0.857	Various	0.349	Various	0.365	Various	Cont.	Cont.
Travel	N/A	USSOCOM, MacDill AFB, FL	0.362	0.056	Various	0.025	Various	0.025	Various	Cont.	Cont.
Subtotal Management			14.319	1.339		0.800		0.816		Cont.	Cont.
Remarks:											
Total DERF (non-add)			1.623								
Total Cost			88.714	49.372		33.167		27.018		Cont.	Cont.



Exhibit R-4, Schedule Profile		Date: FEBRUARY 2005																														
Appropriation/Budget Activity RDT&E/7													Project Number and Name Project S400/SO Intelligence																			
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MATT EIR Development	▲	▲	▲	▲																												
NSSS Participation in Space Technology Development and Demonstrations	▲	▲	▲	▲	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
JTWS Ground - Team Transportable Development									△	△	△	△	△	△	△	△																
JTWS Ground - SIGINT Kit Development	▲	▲	▲	▲																												
JTWS Air Variant Development	▲	▲	▲	▲	△	△	△	△																								
JTWS Evolutionary Technology Insertions									△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
JTWS-Tactical Wireless Information Display ACTD	▲	▲	▲	▲																												
JTWS Maritime					△	△	△	△																								
JTWS-Advanced Manpack ACTD	▲	▲	▲	▲																												
OPUS Concept Development	▲	▲	▲	▲	△	△	△	△																								
SOTVS Future System Evaluation	▲	▲			△	△																										
SOJICC RDR					△	△	△	△																								
SOJICC Integration and Test	▲	▲	▲	▲	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
CAPS Integration	▲	▲	▲	▲	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
SOCRATES Multi-Level Security		▲	▲	▲	△	△	△	△	△	△	△	△																				
ISP-Technology Development		▲	▲	▲																												

Exhibit R-4, Schedule Profile												Date: FEBRUARY 2005																				
Appropriation/Budget Activity RDT&E/7												Project Number and Name Project S400/SO Intelligence																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Covert Waveform-Technology Development		▲	—	▲	△	—	—	△																								
Sensor Integration with Lithium Batteries						△	—	△																								
UAV Near Real Time Video Program						△	—	△																								
Wireless Management and Control Project						△	—	△																								
Application Specific Integrated Circuit Dev.						△	—	△																								
High Altitude Long Endurance						△	—	△																								
SOCOM Microelectromachanical Sustum						△	—	△																								

<b>Exhibit R-4a, Schedule Profile</b>				Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u>	<u>Program Element Number and Name</u>			<u>Project Number and Name</u>				
RDT&E/7	PE1160405BB/Special Operations Intelligence Systems Development			Project S400/SO Intelligence				
<u>Schedule Profile</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>
MATT EIR Development	1-4Q							
NSSS Participation in Space Technology Development and Demonstrations	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
JTWS Ground - Team Transportable Development			1-4Q	1-4Q				
JTWS Ground - SIGINT Kit Development	1-3Q							
JTWS Air Variant Development	1-4Q	1-4Q						
JTWS Evolutionary Technology Insertions			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
JTWS Maritime		2-4Q						
JTWS - Tactical Wireless Information Display ACTD	1-4Q							
JTWS - Advanced Manpack ACTD	1-4Q							
Optimal Placement of Unattended Sensors	1-4Q	2-4Q						
SOTVS Future System Evaluation	1-2Q	1-2Q						
SOJICC Integration and Test	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
SOJICC Remote Data Repository		2-4Q						
CAPS Integration	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
SOCRATES Multi-Level Security Guard	2-4Q	1-4Q	1-4Q					
ISP Technology Development	2-4Q							
Sensor Integration with Lithium Polymer Batteries		2-4Q						
UAV Near Real-Time Video Program		2-4Q						
Wireless Management and Control Project		2-4Q						
Application Specific Integrated Circuit Development		2-4Q						
High Altitude - Long Endurance		2-4Q						
Microelectromechanical System		2-4Q						
Covert Waveform Technology Development	2-4Q	2-4Q						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2005
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160421BB Special Operations CV-22 Development
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COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160421BB		62.806	29.954	14.234	32.702	28.937	38.885	59.585	Cont.	Cont.
PE1160404BB	71.305									
SF200 CV-22	71.305	62.806	29.954	14.234	32.702	28.937	38.885	59.585	Cont.	Cont.

***Note: As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations CV-22 Development. FY2005-2011 resources were moved from PE 1160404BB.***

A. Mission Description and Budget Item Justification: The CV-22 is a Special Operations Forces (SOF) variant of the V-22 vertical lift, multi-mission aircraft. The CV-22 will provide critical capability to vertically insert, extract, and resupply special operation forces deep into denied or sensitive territory within a single period of darkness. This is a capability not currently provided by existing aircraft. The CV-22 acquisition program delayed 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. CV-22 production began in FY04.

Block 10 funding is required for integrating and testing the Directional Infrared Countermeasures (DIRCM), a system to provide protection against infrared guided missiles; design, integration and validation 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 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, thus providing a third flight test asset.

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

R-1 ITEM NOMENCLATURE / PROJECT NO.  
PE 1160421BB Special Operations CV-22 Development

Block 20 funding is required to design, integrate, test, and validate enhancements required to meet SOF unique mission requirements and correction of deficiencies identified in previous testing. This block will provide more robust performance of the CV platform in navigation, maneuverability and mission deployment. Initial risk reduction and trade studies will be pursued prior to starting System Development and Demonstration.

Block 30 funding is required to design, integrate, test, and validate enhancements required to meet SOF unique mission requirements to maintain performance against the evolving threat environment. This block will provide improve survivability and performance against potential threats through reduction in electronic signature emissions and improved countermeasures. Initial risk reduction and trade studies will be pursued prior to starting System Development and Demonstration.

B. Program Change Summary:

	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>
Previous President's Budget	78.610			
Current President's Budget	71.305	62.806	29.954	14.234
Total Adjustments	-7.305	62.806	29.954	14.234
Congressional Program Reductions		-1.347		
Congressional Rescissions		-9.390		
Congressional Increases				
Congressional Transfer		75.131	28.811	
Reprogrammings	-5.698	-0.052	1.143	14.234
SBIR Transfer	-1.607	-1.536		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160421BB Special Operations CV-22 Development	
<p>Funding:</p> <p>FY04</p> <ul style="list-style-type: none"> <li>- Decrease of (-\$5.698M) to rephase Block 10 development program.</li> </ul> <p>FY05</p> <ul style="list-style-type: none"> <li>- Decrease reflects sectionals 8095, 8122. and 8135 (-\$1.347M), Congressional rescission (-\$9.390) and (-\$.052M) that was reprogrammed to other programs.</li> </ul> <p>FY06</p> <ul style="list-style-type: none"> <li>- Increase (\$1.143M) for addition of Block 20 and Block 30.</li> </ul> <p>FY07</p> <ul style="list-style-type: none"> <li>- Increase (\$14.234M) for addition of Block 20 and Block 30.</li> </ul> <p>Schedule: Addition of Block 20 and Block 30.</p> <p>Technical: Addition of Block 20 and Block 30.</p>		

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	CV-22/Project SF200	

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
CV-22	See Note	62.806	29.954	14.234	32.702	28.937	38.885	59.585
RDT&E Articles Quantity								

***Note: As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations CV-22 Development. FY2005-2011 resources were moved from PE 1160404BB.***

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, 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 Automatic Link Establishment-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 configuration. Block 20 will provide more robust performance of the CV-22 platform in navigation, maneuverability and mission deployment as well as correction of deficiencies identified in previous testing. Future Block upgrade programs (Block 30 and beyond) to design, integrate, test, and validate enhancements are required to meet SOF unique mission requirements and maintain performance against the threat environment. Initial risk reduction and trade studies will be pursued prior to starting System Development and Demonstration for these efforts.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	CV-22/Project SF200	

B. Accomplishments/Planned Program				
	FY04	FY05	FY06	FY07
Dev/Integration/Test of Block 10 Program	29.108	54.690	23.188	
ATA Modification	37.148			
RDT&E Articles Quantity				
FY04 Continued development and integration of Block 10 capabilities, to include the start of Block 10 flight testing; continued and completed ATA modification efforts. FY05 Continue development/integration/testing of Block 10 capabilities. FY06 Continue development/integration/testing of Block 10 capabilities.				
	FY04	FY05	FY06	FY07
Risk Reduction/Dev/Integration/Test of Block 20 Program			1.143	11.314
RDT&E Articles Quantity				
FY06 Risk reduction, trade studies, system requirements definition for Block 20 capabilities. FY07 Start design and development for Block 20 System Development and Demonstration phase.				
	FY04	FY05	FY06	FY07
Program Office Support	0.270	0.816	.200	.210
RDT&E Articles Quantity				
FY04 Continued program office support for Block 10 program. FY05 Continue program office support for Block 10 program. FY06 Complete program office support for Block 10 program and begin program office support for Block 20 program. FY07 Continue program office support for Block 20 program.				



<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	CV-22/Project SF200	

	FY04	FY05	FY06	FY07
Engineering and Logistics Support	4.779	7.300	5.423	2.710
RDT&E Articles Quantity				

FY04 Continued engineering and logistics support for Block 10 program.  
 FY05 Continue engineering and logistics support for Block 10 program.  
 FY06 Complete engineering and logistics support for Block 10 program and begin engineering and logistics support for Block 20 program.  
 FY07 Continue engineering and logistics support for Block 20 program.

C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
Proc, CV-22 SOF Osprey	81.870	125.494	117.923	171.931	235.508	184.839	183.392	167.646	Cont.	Cont.

D. Acquisition Strategy.

The CV-22 program is managed by the Navy V-22 Joint Program Office (NAVAIR PMA-275). This ensures that the CV-22 changes are incorporated into the ongoing V-22 production line with minimum impact. Funding for the baseline CV-22 Engineering Manufacturing and Development, known as Block 0, is embedded in the Navy budget. Block 10 RDT&E funding is sent from USSOCOM to PMA-275 to be placed on contract with the V-22 prime contractor. Block 10 capability is required for full compliance with the Joint Operational Requirements Document. Future Block upgrades are planned to follow the same acquisition strategy, with the PMA-275 ensuring the integration of the SOF unique systems with the ongoing basic vehicle improvements supporting both the CV-22 and the Marine Corps MV-22.

Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2005						
APPROPRIATION / BUDGET ACTIVITY				Special Operations CV-22 Development/PE1160421BB							
RDT&E DEFENSE-WIDE / 7				CV-22/SF200							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/ Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Primary Hardware (H/W) Dev	SS/CPAF	NAVAIR/PMA-275 & Bell-Boeing, Patuxent River, MD	151.825	51.779	Feb-05	20.723	Feb-06			Cont.	Cont.
Additional Test Aircraft (ATA) Modification	SS/CPAF/IF	NAVAIR/PMA-275 & Bell-Boeing, Patuxent River, MD	62.595							0.000	62.595
Block 20 Risk Reduction and Development	TBD	TBD				1.143	Mar-06	11.314	Feb-07	Cont.	Cont.
Award/Incentive Fees											
Primary H/W Dev			7.756	2.911	Feb-05	2.465	FY06			Cont.	Cont.
ATA			6.350							0.000	6.350
Prior Year Completed Efforts	Various	Various	100.521								
Subtotal Product Dev			329.047	54.690		24.331		11.314		Cont.	Cont.
Remarks:											
Contractor Engineering Spt	WR	Various	3.963	4.089	Dec-04	1.741	Dec-05	1.080	Nov-06	Cont.	Cont.
Government Engineering Spt	WR	Various	21.290	3.627	Nov-04	3.682	Nov-05	1.780	Nov-06	Cont.	Cont.
Travel and Logistics			0.700	0.400	FY05	0.200	FY06	0.060	FY07	Cont.	Cont.
Subtotal Management			25.953	8.116		5.623		2.920		Cont.	Cont.
Remarks:											
Total Cost			355.000	62.806		29.954		14.234		Cont.	Cont.
Remarks:											

Exhibit R-4, Schedule Profile		Date: FEBRUARY 2005																																	
Appropriation/Budget Activity RDT&E/7				Program Element Number and Name PE1160421BB/Special Operations CV-22 Development														Project Number and Name Project SF200/CV-22																	
Fiscal Year		2004				2005				2006				2007				2008				2009				2010				2011					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
CV-22 Block 10 Development		—————▲																																	
Block 0/10 Flight Test		—————▲																																	
V-22 Acquisition Milestone III		▲																																	
CV-22 IOT&E		▲▼▲																																	
CV-22 Block 20 Development		▲—————																																	
CV-22 Deliveries						PRTV ▲#1					PRTV ▲#2	Lot 8 Deliveries (2) ▲—————▲				Lot 9 Deliveries (3) ▲—————▲				Lot 10 Deliveries (2) ▲—————▲				Lot 11 Deliveries (2) ▲—————▲				Lot 12 Deliveries (5) ▲—————▲				Lot 13 Deliveries (6) ▲—————▲			
CV-22 IOC		▲																																	

<u>Exhibit R-4a, Schedule Profile</u>				Date: FEBRUARY 2005					
<u>Appropriation/Budget Activity</u>		<u>Program Element Number and Name</u>		<u>Project Number and Name</u>					
RDT&E/7		PE1160421BB/Special Operations CV-22 Development		Project SF200/CV-22					
<u>Schedule Profile</u>		<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>
CV-22 Block 10 Development		1-4Q	1-4Q	1-4Q	1-4Q				
Block 0/10 Flight Test		1-4Q	1-4Q	1-4Q	1-4Q				
V-22 Milestone III				1Q					
CV-22 IOT&E					4Q				
CV-22 Block 20 Development				2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
CV-22 Deliveries			3Q	1-3Q	1-4Q	2Q, 4Q	2Q, 4Q	1-4Q	1-4Q
CV-22 IOC							2Q		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160425BB Special Operations Aircraft Defensive Systems / Project 3284							

COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160425BB		55.622	38.824	14.372	8.170	4.174	8.629	6.719	Cont.	Cont.
PE1160404BB	54.330									
3284, Special Operations Aircraft Defensive Systems	54.330	55.622	38.824	14.372	8.170	4.174	8.629	6.719	Cont.	Cont.

***As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations Aircraft Defensive Systems. FY 2005-2011 resources were moved from PE 1160404BB.***

A. Mission Description and Budget Item Justification: This program element provides for the definition, development, prototyping and testing of aircraft defensive avionics systems. It includes the identification and development of hardware and software enhancements for each Special Operations Forces (SOF) aircraft to reduce detection, vulnerability, and threat engagement from threat radars and Infrared (IR) missiles, thereby increasing the overall survivability of SOF assets. This program element funds dispenser upgrade and improvement programs, threat and missile warning receiver enhancements, radio frequency jammer improvements, and enhanced IR jamming systems. It also provides systems for SOF-unique portions of the Electronic Warfare Avionics Integrated Systems Facility.

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

DATE

FEBRUARY 2005

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

R-1 ITEM NOMENCLATURE / PROJECT NO.

PE 1160425BB Special Operations Aircraft Defensive Systems / Project 3284

## B. Program Change Summary:

	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>
Previous President's Budget	56.261			
Current President's Budget	54.330	55.622	38.824	14.372
Total Adjustments	-1.931	55.622	38.824	14.372
Congressional Program Reductions		-1.127		
Congressional Rescissions				
Congressional Increases				
Congressional Transfer		58.041	46.858	17.557
Reprogrammings	-0.708		8.034	3.185
SBIR Transfer	-1.223	-1.292		

## Funding:

## FY04

- Net decrease (\$.708) from Directional Infrared Countermeasures (DIRCM) to help source unfunded requirements.

## FY05

- Transfer from PE1160404BB result of congressionally directed program element change.
- Program reductions, (-\$1.127M) from Sections 8122, 8131, and 8095.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160425BB Special Operations Aircraft Defensive Systems / Project 3284	
<p>FY06</p> <ul style="list-style-type: none"> <li>- Transfer from PE1160404BB result of congressionally directed program element change.</li> <li>- Increase to DIRCM program to restore \$8.9M for USSOCOM share of the Next Generation Missile Warning System.</li> <li>- Decrease of (\$.866M) to fund higher command priorities.</li> </ul> <p>FY07</p> <ul style="list-style-type: none"> <li>- Transfer from PE1160404BB result of congressionally directed program element change.</li> <li>- Increase to Low Band Jammer (LBJ) (+1.900M), Towed Decoy (+\$.014M), (+\$1.271) for higher command priorities.</li> </ul> <p>Schedule:</p> <ul style="list-style-type: none"> <li>- LBJ and TD: In FY03, the program rebaselined to first modify the MC130E instead of the AC-130H aircraft since the MC-130E already has the AN/ALQ-196 LBJ. The upgraded AN/ALQ-196 will eventually go on all the MC-130H and AC-130U aircraft. This rebaseline resulted in moving Milestone C (MS C) production decision and Initial Operational Capability (IOC) to one year later. Additionally the effect of further funding reductions to these programs requires another rebaseline, moving the MS C production decision to FY07 for LBJ and TD, and IOC to FY09 for both systems.</li> </ul> <p>Technical: None.</p>		

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

Cost (\$ in million)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
SOF Aircraft Defense System	54.330	55.622	38.824	14.372	8.170	4.174	8.629	6.719
RDT&E Articles Quantity								

***Note: As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations Aircraft Defensive Systems. FY 2005-2011 resources were moved from PE 1160404BB.***

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 (EWASIF). 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.
- EWASIF. The EWASIF directly supports software development and testing for EW systems. The EWASIF 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 MC-130 E/H Talon aircraft. Program funds the testing of the HPFOTD ALE-



Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

55 that uses the ALQ-172 as a techniques generator. The HPFOTD will be installed on all MC-130 E/H aircraft to provide protection against monopulse and other radar guided, surface to air, and air to air missile systems. AC-130U/H for the HPFOTD requirement was rescinded in FY04.

- Low Band Jammer (LBJ). Program funds the integration 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 MC-130H Combat Talon II aircraft and AC-130U Gunships.

B. Accomplishments/Planned Program

Cost (\$ in million)	FY04	FY05	FY06	FY07
DIRCM	4.497	5.418	5.211	1.798
DIRCM NexGen MWS	15.052	17.927	9.079	
RDT&E Articles Quantity				

FY04 Continued to support a cooperative United Kingdom (UK)/U.S. development/production program for 57 SOF C-130 aircraft and contractor engineering support fund nonrecurring engineering costs. Awarded a development contract for a NexGen MWS as Preplanned Product Improvement (P3I) for DIRCM. Exploited Tier II missiles for jam code development.

FY05 Continues 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 a NexGen MWS as P3I for DIRCM. Exploit Tier II missiles for jam code development.

FY06 Continues to support a cooperative UK/US development/production program for 57 SOF C-130 aircraft and contractor engineering support and nonrecurring engineering costs. Completes development of a NexGen MWS as P3I for DIRCM.

FY07 Continues to support a cooperative UK/US development/production program for 57 SOF C-130 aircraft and contractor engineering support and nonrecurring engineering costs.

Cost (\$ in million)	FY04	FY05	FY06	FY07
EWAISF	1.586	1.804	1.927	1.966
RDT&E Articles Quantity				

FY04 Continued to support laboratory efforts to maintain SOF aircraft defensive systems.

FY05 Continues to support laboratory efforts to maintain SOF aircraft defensive systems.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

FY06 Continues to support laboratory efforts to maintain SOF aircraft defensive systems.  
 FY07 Continues to support laboratory efforts to maintain SOF aircraft defensive systems.

Cost (\$ in million)	FY04	FY05	FY06	FY07
HPFOTD	30.644	15.378	11.471	6.632
RDT&E Articles Quantity				

FY04 Continued nonrecurring engineering and development, and completed test of aircraft integration efforts.  
 FY05 Continues nonrecurring engineering and development, and begin Developmental Test/Operational Test and Evaluation (DT/OT&E) efforts for MC-130E aircraft.  
 FY06 Continues nonrecurring engineering and development, and begin DT/OT&E efforts for MC-130H aircraft. Complete MC-130E DT/OT&E.  
 FY07 Completes MC-130H DT/OT&E.

Cost (\$ in million)	FY04	FY05	FY06	FY07
LBJ	2.551	15.095	11.136	3.976
RDT&E Articles Quantity				

FY04 Continued nonrecurring engineering and development for aircraft integration efforts.  
 FY05 Continues nonrecurring engineering and initiate testing for aircraft integration for MC-130H aircraft.  
 FY06 Continues nonrecurring engineering and initiate testing for aircraft integration for MC-130H aircraft.  
 FY07 Completes MC-130H DT/OT&E.

C. Other Program Funding Summary:										
	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
C-130 Mods (Procurement)										
DIRCM	38.795	14.390	6.899							60.084
LBJ			5.908	4.581	9.755	10.271	13.160	13.687	38.500	95.928
HPFOTD		11.447	0.016	14.859	14.056	8.628	5.552	5.351	53.200	113.043

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

D. Acquisition Strategy:

- DIRCM. The memorandum of agreement between the UK/U.S. 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. USSOCOM program manager is the U.S. 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 competitively awarded for the production phase.
- 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 capitalize on previous SOF aircraft modifications using the ALQ-196 system currently installed on MC-130E aircraft. The ALQ-196 system was selected as the best value decision. 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 U.S. 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						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160425BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Aircraft Defensive System/3284							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Primary Hardware Dev											
Directional Infrared Countermeasures (DIRCM)	SS/FFP	Northrop (Chicago)	101.684								101.684
Tech Integration DIRCM	SS/CPFF	Northrop (Chicago)	7.299	3.918	Various	3.711	Various	0.298	Various	Cont	Cont.
NexGen MWS	CPIF	Northrop (Chicago)/Lockheed Martin (Orlando)	17.455	17.927	Jan-05	9.079	Dec-05				44.461
Electronics Warfare Avionics Integrated Systems Facility	SS/CPFF	Various	16.974	1.804	Various	1.927	Various	1.966	Various	Cont.	Cont.
HPFOTD	CPAF	Boeing, Ft. Walton Beach, FL	94.553	15.378	Jan-05	11.471	Jan-06	6.632	Jan-07	1.433	129.467
Low Band Jammer	CPAF	Boeing, Ft. Walton Beach, FL	35.900	15.095	Jan-05	11.136	Jan-06	3.976	Jan-07	1.536	67.643
Subtotal Product Dev			273.865	54.122		37.324		12.872		Cont.	Cont.
Remarks:											
Development Spt											
Subtotal Spt											
Remarks:											
Developmental Test & Eval											
Subtotal T&E											
Remarks:											
Contractor Engineering Spt											
DIRCM	FP	Sverdrup	3.098	1.500	Mar-05	1.500	Dec-05	1.500	Dec-06	Cont.	Cont.
Subtotal Contract Engineering Spt			3.098	1.500		1.500		1.500		Cont.	Cont.
Remarks:											
Total Cost			276.963	55.622		38.824		14.372		Cont	Cont

Exhibit R-4, Schedule Profile												Date: FEBRUARY 2005																				
Appropriation/Budget Activity						Program Element Number and Name												Project Number and Name														
RDT&E/7						PE1160425BB/Special Operations Aircraft Defensive Systems												Project 3284/SOF Aircraft Defensive Systems														
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
DIRCM																																
Tech Integration	_____																															
Missile Warning System Development (NexGen)	_____▲																															
EWASIF Laboratory Testing and Evaluation	_____																															
HPFOTD Development	_____																															
MC-130E	▲_____▲																															
MC-130H	_____▲_____▲																															
LBJ Development	_____																															
MC-130E	▲_____▲																															
MC-130H	_____▲_____▲																															
	_____																															
	_____																															
	_____																															

<b>Exhibit R-4a, Schedule Profile</b>					Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u> RDT&E/7		<u>Program Element Number and Name</u> PE1160425BB/Special Operations Aircraft Defensive Systems			<u>Project Number and Name</u> Project 3284/SOF Aircraft Defensive Systems				
<u>Schedule Profile</u>		FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011
DIRCM									
Tech Integration		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Missile Warning System Development (NexGen)		1-4Q	1-4Q	1-4Q					
EWASIF Laboratory Testing and Evaluation		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
HPFOTD Development									
MC-130E		1-4Q	1-4Q						
MC-130H			2-4Q	1-4Q	1-4Q				
LBJ Development									
MC-130E		1-4Q	1-4Q						
MC-130H			2-4Q	1-4Q	1-4Q				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE FEBRUARY 2005				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160426BB Special Operations Advanced SEAL Delivery System Development							
COST (Dollars in Millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Cost to Complete	Total Cost
PE1160426BB		19.072	2.040	2.096	2.150	2.203	2.257	2.311	Cont.	Cont.
PE1160404BB	15.578									
S0418, Advanced SEAL Delivery System Development		19.072	2.040	2.096	2.150	2.203	2.257	2.311	Cont.	Cont.
<p><b><i>As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations Advanced SEAL Delivery Systems Development. FY 2005-2011 resources were moved from PE 1160404BB, project S0417, Underwater Systems Advanced Development.</i></b></p> <p>A. Mission Description and Budget Item Justification:</p> <p>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.</p>										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160426BB Special Operations Advanced SEAL Delivery System Development		

B. Program Change Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Previous President's Budget	15.578			
Current President's Budget	15.078	19.072	2.040	2.096
Total Adjustments	-0.500	19.072	2.040	2.096
Congressional Reductions		-0.479		
Congressional Rescissions				
Congressional Increases		18.386		
Congressional Transfers		1.612	1.627	1.662
Reprogrammings	-0.500		0.413	0.434
SBIR Transfer		-0.449		

Funding:

FY04

Reflects decrease of (-\$.500M) to higher command priorities to support the War on Terrorism.

FY05

Reflects decrease (-\$.479M) for Sectional's 8095, 8122 and 8131. Congressional increase of (\$18.386M) for program restructure.

FY06

Transfer from PE 1160404BB (\$1.627M) result of congressionally directed program element change. Increase based on current inflation factors (+\$.413M).



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2005
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160426BB Special Operations Advanced SEAL Delivery System Development	
<p>FY07 Transfer from PE 1160404BB (\$1.662M) result of congressionally directed program element change. Increase based on current inflation factors (+\$.434M).</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2005
Appropriation/Budget Activity RDT&E BA # 7	Advanced SEAL Delivery System Development(ASDS)/Project S0418	

Cost (\$ in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
ASDS Development		19.072	2.040	2.096	2.150	2.203	2.257	2.311
RDT&E Articles Quantity		19.072	2.040	2.096	2.150	2.203	2.257	2.311

***As directed by Congress, a new program element was established beginning in FY 2005 for Special Operations Advanced SEAL Delivery Systems Development. FY 2005-2011 resources were moved from PE 1160404BB, project S0417, Underwater Systems Advanced Development.***

A. Mission Description and Budget Item Justification: This project funds the development of Naval Special Warfare (NSW) support items used during hydrographic and costal inland reconnaissance, indications and warning, 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.

B. Accomplishments/Planned Program

	FY04	FY05	FY06	FY07
ASDS Development		19.072	2.040	2.096
RDT&E Articles Quantity				

FY05 Develop improvements to ASDS #1 to correct acoustic, reliability (includes unexpected tail section redesign) and maintainability deficiencies.

FY06 Continue P3I efforts.

FY07 Continue P3I efforts.

Appropriation/Budget Activity  
RDT&E BA # 7

Advanced SEAL Delivery System Development(ASDS)/Project S0418

C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
ASDS	10.852	5.837	12.350	212.204	17.670	161.774	18.182	17.569		456.439
ASDS Adv Proc			71.694		70.906					165.961

D. Acquisition Strategy

- ASDS. ASDS was designated an Acquisition Category (ACAT) 1D Major Defense Acquisition Program in Nov 04. Milestone C decision from USD (AT&L) scheduled for 1<sup>st</sup> QTR FY06 will allow procurement of follow on submersibles (ASDS).

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2005					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160426BB							
RDT&E DEFENSE-WIDE / 7				Advanced SEAL Delivery System Development/S0418							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY05	Award Date FY05	Budget Cost FY06	Award Date FY06	Budget Cost FY07	Award Date FY07	To Complete	Total Program
Primary Hardware Dev											
ASDS	CPIF/C	Northrop-Grumman	299.468	10.558						Cont.	310.026
ASDS	CPFF	Newport News Ship Yard, VA	8.605							Cont.	8.605
ASDS P3I and Host Support	Various	Various	35.849	1.431	Various	2.040	Various	2.096	Various	Cont.	41.416
Subtotal Product Dev			343.922	11.989		2.040		2.096		Cont.	Cont.
Remarks											
Technical Data											
ASDS	Various	Northrop-Grumman	8.044	2.850							10.894
Subtotal Supt.			8.044	2.850							10.894
Remarks											
Test & Evaluation											
OT&E (ASDS)	Various	OPTEVFOR, Norfolk, VA	5.585	0.700							6.285
Host Testing (ASDS)	Various	NAVSEA, Washington Navy Yard	20.615								20.615
LFT&E (ASDS)	Various	NAVSEA, Washington Navy Yard	1.650	1.345							2.995
Subtotal T&E			27.850	2.045							29.895
Remarks											
Management											
Various (ASDS)	Various	Various	11.897	2.188						Cont.	14.085
Subtotal Management			11.897	2.188						Cont.	Cont.
Remarks:											
Total Cost			391.713	19.072		2.040		2.096			414.921
Remarks:											

Exhibit R-4, Schedule Profile													Date: FEBRUARY 2005																											
Appropriation/Budget Activity RDT&E/7					Program Element Number and Name PE1160426BB/Special Operations Advanced SEAL Delivery System Development												Project Number and Name Project S0418/Advanced SEAL Delivery System Development																							
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Advanced Sea, Air Land (SEAL Delivery System)																																								
P3I Development																																								
Milestone C																																								

<u>Exhibit R-4a, Schedule Profile</u>				Date: FEBRUARY 2005				
<u>Appropriation/Budget Activity</u> RDT&E/7	<u>Program Element Number and Name</u> PE1160426BB/Special Operations Advanced Sea, Air, Land (SEAL) Delivery System Development			<u>Project Number and Name</u> Project S0418/Advanced SEAL Delivery System				
<u>Schedule Profile</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>
Advanced SEAL Delivery System								
P3I Development	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Milestone C			1Q					