



# **UNITED STATES SPECIAL OPERATIONS COMMAND**

## **FISCAL YEAR (FY) 2004/FY 2005 BIENNIAL BUDGET ESTIMATES**

**RDT&E, DEFENSE-WIDE**

**FEBRUARY 2003**

UNITED STATES SPECIAL OPERATIONS COMMAND  
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE

TABLE OF CONTENTS

Table of Contents by R-1 Line Item ..... i

Table of Contents Alphabetically .....iii

Organizations ..... v

Acronyms ..... vi

RDT&E Program, Exhibit R-1 ..... 1

TABLE OF CONTENTS BY R-1 LINE ITEM

<u>R-1</u>	<u>P.E. Number</u>	<u>P.E. Title</u>	<u>Page No.</u>
157	0304210BB	Special Applications for Contingencies	3
	9999, Non-MFP 11		5
183	1160279BB	Small Business Innovative Research	11
23	1160401BB	Special Operations Technology Development	13
	S100, Special Operations Forces Technology Base Development		15

UNITED STATES SPECIAL OPERATIONS COMMAND  
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE

TABLE OF CONTENTS ALPHABETICALLY (CONT.)

<u>R-1</u>	<u>P.E. Number</u>	<u>P.E. Title</u>	<u>Page No.</u>
61	1160402BB	Special Operations Advanced Technology Development S200, Special Operations Special Technology	25 29
186	1160404BB	Special Operations Tactical Systems Development 3129, MC-130H Combat Talon 3284, Special Operations Forces Aircraft Defensive System 3326, AC-130U Gunship D476, PSYOP Advanced Development D615, Special Operations Forces Aviation S0417, Underwater Systems Advanced Development S350, Special Operations Forces Planning and Rehearsal System S375, Weapons and Support Systems Advanced Development S625, SOF Training Systems SF100, Aviation Systems Advanced Development SF200, CV-22	37 43 47 55 61 67 75 85 93 103 109 119
187	1160405BB	Special Operations Intelligence Systems Development S400, Special Operations Intelligence	125 129
24	1160407BB	SOF Medical Technology Development S275, Special Operations Forces Medical Technology	141 143

UNITED STATES SPECIAL OPERATIONS COMMAND  
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE

TABLE OF CONTENTS ALPHABETICALLY (CONT.)

<u>P.E. Title</u>	<u>R-1</u>	<u>P.E. Number</u>	<u>Page No.</u>
Small Business Innovative Research	183	1160279BB	11
Special Applications for Contingencies 9999, Non-MFP 11	157	0304210BB	3 5
Special Operations Advanced Technology Development S200, Special Operations Special Technology	61	1160402BB	25 29
SOF Medical Technology Development S275, Special Operations Forces Medical Technology	24	1160407BB	141 143
Special Operations Intelligence Systems Development S400, SOF Intelligence	187	1160405BB	125 129
Special Operations Tactical Systems Development 3129, MC-130H Combat Talon 3284, Special Operations Forces Aircraft Defensive System 3326, AC-130U Gunship D476, PSYOP Advance Development D615, Special Operations Forces Aviation S0417, Underwater Systems Advanced Development S350, Special Operations Forces Planning and Rehearsal System	186	1160404BB	37 43 47 55 61 67 75 85

UNCLASSIFIED

FEBRUARY 2003

UNITED STATES SPECIAL OPERATIONS COMMAND  
RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE

TABLE OF CONTENTS ALPHABETICALLY (CONT.)

<u>P.E. Title</u>	<u>R-1</u>	<u>P.E. Number</u>	<u>Page No.</u>
S375, Weapons and Support Systems Advance Development			93
S675, SOF Training Systems			103
SF100, Aviation Systems Advanced Development			109
SF200, CV-22			119
Special Operations Technology Development	23	1160401BB	13
S100, Special Operations Technology Base Development			15

## ***ORGANIZATIONS***

---

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

**ACRONYMS**


---

A2C2S	Army Aviation Command & Control System
ACTD	Advanced Concepts Technology Demonstration
ADRAC	Altitude Decompression Sickness Risk Assessment Computer
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
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
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
CBN	Chemical, Biological and Nuclear
CCD	Coherent Change Detection
CDR	Critical Design Review
CESE	Civil Engineering Support Equipment
CINC	Commander in Chief

**ACRONYMS**

---

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
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
DMCS	Deployable Multi-Channel SATCOM
DMS	Defense Message System
DMT/DMR	Distributed Mission Training and Rehearsal
ECP	Engineering Change Proposal
EDM	Engineering Development Model
EFP	Explosively Forced Penetrator
EGLM	Enhanced Grenade Launcher Module
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
FCT	Foreign Comparative Testing
FLIR	Forward Looking Infrared Radar
FOL	Family of Loud Speakers
FW	Fixed Wing
GBS	Global Broadcasting System
GEO	Geological
GFE	Government Furnishment Equipment



**ACRONYMS**


---

GPS	Global Positioning System
H-SUV	Hardened-Sport Utility Vehicle
HF	High Frequency
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
HSR	Heavy Sniper Rifle
IDAP	Integrated Defensive Armed Penetrator
IDAS	Interactive Defensive Avionics Subsystem
IDS	Infrared Detection System
ILM	Improved Limpet Mine
INOD	Improved Night/Day Observation/Fire Control Device
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
JTWS	Joint Threat Warning System
LASIK	Laser-Assisted IN-Situ Keratomileusis
LAN/WAN	Local Area Network/Wide Area Network
LASAR	Light Assault Attack Reconfigurable Simulator

**ACRONYMS**


---

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 Probably of Detection
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
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
MET	Meteorological
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
NAVSCIATTS	Naval Small Craft Instructor and Technical Training School
NBC	Nuclear, Biological, and Chemical
NBOE	Non-Gasoline Burning Outboard Engine
NDI	Non-Developmental Item
NOSC	Network Operations Systems Center

**ACRONYMS**


---

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
OMB	Office of Management and Budget
OMMS	Organizational Maintenance Manual Sets
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
PC	Personal Computer
PC	Patrol Coastal
PDR	Preliminary Design Review
PDS	Psychological Operations Distribution System
PFPS	Portable Flight Planning System
PGCB	Precision Guided Canister Bomb
PLTD	Precision Laser Targeting Device
PM	Program Manager
PM-MCD	Project Manager for Mines, Countermeasures and Demolitions
POBS	PSYOP Broadcasting System
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
RW	Rotary Wing
SAFC	Special Applications for Contingencies
SAHRV	Semi-Autonomous Hydrographic Reconnaissance Vehicle
SATCOM	Satellite Communication

**ACRONYMS**


---

SBIR	Small Business Innovative Research
SBR	System Baseline Review
SDS	Sniper Detection System
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
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
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**

---

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
TDFD	Time Delay Firing Device
TEI	Technology Exploitation Initiative
TF/TA	Terrain Following/Terrain Avoidance
TRS	Tactical Radio System
TTHM	Titanium Tilting Helmet Mount
UAV	Unmanned Aerial Vehicle
UBA	Underwater Breathing Apparatus
UHF	Ultra High Frequency
UK	United Kingdom
US	United States
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			FEBRUARY 2003			
Appropriation: 0400 Research Development Test & Evaluation Defense-Wide			TOA, \$ in Millions			
Program Element #	Item	Budget Activity	FY 2002	FY 2003	FY 2004	FY 2005
0304210BB	Special Applications for Contingencies	7	4.400	22.817	24.587	24.511
1160279BB	Small Business Innovative Research	7	9.744	12.620		
1160401BB	Spec Operations Technology Development	7	19.961	18.006		
1160401BB	Spec Operations Technology Development	2			9.715	13.142
1160402BB	Spec Operations Advanced Technology Development	7	17.804	79.550		
1160402BB	Spec Operations Advanced Technology Development	3			67.017	48.925
1160404BB	Spec Operations Tactical Systems Development	7	233.524	287.621	255.981	253.588
1160405BB	Spec Operations Intelligence Systems Development	7	14.913	4.648	16.726	15.679
1160407BB	SOF Medical Technology Development	7	4.883	3.339		
1160407BB	SOF Medical Technology Development	2			1.961	2.167
1160408BB	SOF Operational Enhancements	7	76.665	83.860	64.430	50.009
<b>Total Operational Systems Development:</b>			<b>381.894</b>	<b>512.461</b>	<b>440.417</b>	<b>408.021</b>
<b>Total Special Operations Command:</b>			<b>381.894</b>	<b>512.461</b>	<b>440.417</b>	<b>408.021</b>

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2003					
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)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Cost to Complete	Total Cost
PE1160279BB	9.744	12.620							Cont.	Cont.
S050, SBIR	9.744	12.620							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.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160279BB Small Business Innovative Research (SBIR)	
B. Program Change Summary:			
		<u>FY2002</u>	<u>FY2003</u>
Previous President's Budget			
President's Budget		9.744	12.620
Total Adjustments		9.744	12.620
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR Transfer		9.744	12.620
Schedule: None.			
Technical: None.			



UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2003					
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)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Cost to Complete	Total Cost
PE0304210BB	4.400	22.817	24.587	24.511	24.459	24.425	24.885	25.351	Cont.	Cont.
9999.PR SAFC	4.400	22.817	24.587	24.511	24.459	24.425	24.885	25.351	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>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>
Previous President's Budget				
Current BES/President's Budget	4.400	22.817	24.587	24.511
Total Adjustments	4.400	22.817	24.587	24.511
Congressional Program Reductions				
Congressional Rescissions		-0.584		
Congressional Increases		24.000		
Reprogrammings				
SBIR Transfer		-0.599		

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2003
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>FY03 - At the request of the Department, Congress transferred \$24.000 from the Defense Emergency Response Fund in the FY 2003 Appropriations Act.</p> <p>FY04 - Funds (\$24.587) were transferred from the Air Force by the Department.</p> <p>Schedule: None.</p> <p>Technical: None.</p>		

UNCLASSIFIED

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Applications for Contingencies/Project 9999	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Special Applications for Contingencies	4.400	22.817	24.587	24.511	24.459	24.425	24.885	25.351
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**

	FY02	FY03	FY04	FY05
SAFC	4.400	22.817	24.587	24.511
RDT&E Articles Quantity				

FY03 Develop, deploy and evaluate selected unmanned delivery platforms and mounted or deliverable ISR sensor systems. Develop, deploy and evaluate advanced auto-pilot technologies. Perform research on advanced mobile secure networking and detection technologies to create or enhance deployed, remotely emplaced surveillance architectures. Develop and evaluate a common ground station. Research and assess emerging ISR technologies. Research, evaluate and integrate red force tagging, tracking and locating capabilities to enable remote and stand-off emplacement. Conduct Federally Funded Research and Development in support of a Joint Staff approved requirement for data mining.

FY04 Continue development and combat evaluation of selected unmanned delivery platforms and mounted or deliverable Intelligence Surveillance and Reconnaissance (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.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Applications for Contingencies/Project 9999	

C. Other Program Funding Summary:

	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	To Complete	Total Cost
Special Applications For Contingencies (SAFC) Proc		18.240	18.260	18.223	18.181	18.174	18.441	18.806	NA	NA

D. Acquisition Strategy:

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

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				SPECIAL APPLICATIONS FOR CONTINGENCIES PE0304210BB/C3I							
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 FY03	Date FY03	Cost FY04	Date FY04	Cost FY05	Date FY05	To Complete	Total Program
UAV Capability Development	MIPR	NAVAIR	NA	9.800	Mar-03	9.800	Dec-03	9.800	Dec-04	Cont.	Cont.
Remotely Delivered Sensor and Networking Development	MIPR	NAVAIR	NA	6.470	Mar-03	9.800	Dec-03	9.800	Dec-04	Cont.	Cont.
TT&L R&D	MIPR	Various		0.500	Feb-03						
FFRDC Support to SOJICC	MIPR	MITRE CECOM	NA	0.500	Jan-03						
FFRDC Support to SOJICC	MIPR	MITRE ESC	NA	0.330	Jan-03						
Technical Collection R&D	MIPR	ASD C3I		1.000	Feb-03						
NRT Congingency		Various	NA	4.217	TBD	4.987	TBD	4.911	TBD		
Subtotal Product Dev			0.000	22.817		24.587		24.511		Cont.	Cont.
Remarks:											
Subtotal Spt			0.000	0.000		0.000		0.000			Cont.
Remarks:											
Subtotal T&E			0.000			0.000		0.000			Cont.
Remarks:											
Subtotal Management			0.000	0.000		0.000		0.000		Cont.	Cont.
Remarks:											
Total Cost			0.000	22.817		24.587		24.511		Cont.	Cont.

UNCLASSIFIED

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2003																					
Appropriation/Budget Activity					Program Element Number and Name												Project Number and Name															
RDT&E/7					PE0304210BB/C3I-SAFC												9999.PR SAFC															
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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					▲	→		△	△	→		△	△	→		△	△	→		△	△	→		△	△	→		△	△	→		△

UNCLASSIFIED

<u>Exhibit R-4a. Schedule Profile</u>				Date: FEBRUARY 2003				
<u>Appropriation/Budget Activity</u>	<u>Program Element Number and Name</u>			<u>Project Number and Name</u>				
RDT&E/7	PE0304210BB/C3I-SAFC			Project 9999/SAFC				
<u>Schedule Profile</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>
SAFC Technology Development		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

UNCLASSIFIED

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 2			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development							

COST (Dollars in Millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Cost to Complete	Total Cost
PE1160401BB	19.961	18.006	9.715	13.142	13.749	14.472	15.764	17.471	Cont.	Cont.
S100, SO TECHNOLOGY BASE DEV	19.961	18.006	9.715	13.142	13.749	14.472	15.282	17.471	Cont.	Cont.

**Note: In FY 2002 and 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 2.**

A. Mission Description and Budget Item Justification:

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

B. Program Change Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>
Previous President's Budget	20.506	6.741	7.378	8.488
President's Budget	19.961	18.006	9.715	13.142
Total Adjustments	-0.545	11.265	2.337	4.654
Congressional Program Reductions				
Congressional Rescissions		-0.461		
Congressional Increases		12.200		
Reprogrammings	-0.033			
SBIR/STTR Transfer	-0.512	0.474		



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2003
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 2	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development
<p>Funding:</p> <p>FY02 Reprogrammings – Minor changes between programs (-\$0.033)</p> <p>FY03 Reflects \$12.200 million for Congressionally added programs as follows:</p> <ul style="list-style-type: none"> <li>- Night Vision Fusion &amp; Rapid Transmission (\$2.600)</li> <li>- Knowledge Superiority for the Transitional Warfighter (\$1.700)</li> <li>- Large Format Uncooled Infrared Sensors (\$1.000)</li> <li>- Imaging Auto Sensors for Autonomous Vehicles (\$1.700)</li> <li>- Shortwave Infrared Imagers (\$1.700)</li> <li>- SPIKE Urban Warfare System (\$3.500)</li> </ul> <p>FY04 Program increases for the following:</p> <ul style="list-style-type: none"> <li>- C4I Technologies to provide SOF with improved situational awareness and communication (\$.506)</li> <li>- Mobility Technologies to provide SOF the capability to conduct ground, air, and sea operations (\$.500)</li> <li>- Weapons Technologies to provide SOF with standoff capabilities for targeting and locating personnel and equipment (\$.500)</li> <li>- Sustainment Technologies to provide SOF increases in survivability, countermeasures technologies, and performance (\$.642)</li> <li>- Concept Exploration to provide for concepts being continued or initiated in support of desired operational capabilities (\$.188)</li> </ul> <p>Schedule: None.</p> <p>Technical: None.</p>	

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2	Special Operations Technology Development/Project S100	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
SOF Technology Base Development	19.961	18.006	9.715	13.142	13.749	14.472	15.764	17.471
RDT&E Articles Quantity								

***Note: In FY 2002 and 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 2.***

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

- SOF Command, Control, Communications, Computers, and Intelligence (C4I) Technologies. Exploit technologies that provide SOF with improved situational awareness and communications in all environments. Develop technologies to provide significant improvements to SOF's capability to accurately detect and track threats or targets. Exploit and demonstrate technologies that provide enhanced sensors and command and control. Develop technologies to provide new and improved capabilities in information operations and psychological operations.
- SOF Mobility Technologies. Exploit technologies to improve the performance and survivability, and reduce the detectability of SOF mobility assets. Exploit and develop technologies to provide SOF the capability to conduct ground, air, and sea mobility operations in denied areas. Exploit and develop technologies to enhance logistics support, reduce cost and improve the performance of SOF mobility platforms.

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100

- **SOF Weapons Technologies.** Exploit technologies to provide SOF with standoff capabilities for targeting, and locating personnel and equipment. Exploit technologies to discriminate targets and provide real-time active decision-making capabilities. Exploit technologies that enhance logistics, reduce cost and enhance performance of SOF weapons and munitions. Exploit technologies to provide multipurpose, adaptable weapons applicable to SOF platform and missions.
- **SOF Sustainment Technologies.** Exploit technologies to increase SOF's survivability and performance. Exploit technologies to improve the human endurance and sensory performance without interfering with normal sensory functions. Exploit and develop technologies to counter the threat of electro-optical devices, devices that detect human presence, and enhance individual operator capabilities.
- **Concept Exploration Studies.** Explore and validate concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities.
- **Technology Development Exploitation.** Exploit technologies to meet critical SOF capability objectives. Requirements in these areas may be advertised to industry and government research and development agencies via broad area announcements and calls for white papers.

Additionally, these efforts were added by Congress:

- **Dual Band Detector Imaging Technologies.** Congressional add for an integrated multi-spectrum capable system.
- **Lightweight Counter-Mortar Radar System.** Congressional add for a small man-portable radar for the SOF operator.
- **Shoulder Fired Smart Round Urban Warfare System.** Congressional add for a man-portable fire-and-forget rocket for anti-materiel use. Possible maritime platform applications.
- **Wireless Video Links for Special Operations Miniature Remotely Operated Vehicle.** Congressional add to focus tele-operated and tele-supervised (limited autonomy) systems using wireless video technology.

Exhibit R-2a, RDT&E Project Justification			Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2			Special Operations Technology Development/Project S100

- Night Vision Fusion & Rapid Transmission. Congressional add to integrate near infrared and long wave infrared sensors coupled to a covert long range communications device.
- Knowledge Superiority. Congressional add for knowledge superiority for transitional warfighter.
- Large Format Uncooled Infrared Sensors. Congressional add for development of larger format arrays to enhance surveillance systems.
- Imaging Auto Sensors For Autonomous Vehicles. Congressional add to incorporate unique microelectronics and opto-electronic processing in low cost micro-sensors.
- Shortwave Infrared Imagers. Congressional add to develop large area focal plane arrays and cameras for unattended sensors and navigation in difficult terrain.

#### B. Accomplishments/Planned Program

	FY02	FY03	FY04	FY05
SOF Command, Control, Communications, Computers, and Intelligence (C4I) Technologies.	1.776	1.082	2.075	3.037
RDT&E Articles Quantity				
<p>FY02 Continued to develop Color Night Vision Fusion through broad-spectrum sensors to include polarimetry and fuse sensors while incorporating SOF size, weight, and human factor requirements; Psychological Operations (PSYOP) Extended-Range Broadcast to increase the range of broadcasts from SOF assets; Reconnaissance Technologies to provide the capability to identify, collect, store, transmit, exploit tactically significant information; Man-Portable Counter Mortar Radar System; and Undersea Master Communications Node for maritime communications devices that transmit across the air water boundary and within each medium. Initiated Enhanced Situational Awareness for SOF Combatant Craft using Joint Surveillance and Target Attack Radar System data. Completed Cassandra.</p> <p>FY03 Continue development of FY02 efforts. Continue Color Night Vision Fusion, PSYOP Extended-Range Broadcast, Reconnaissance Technologies, Man-Portable Counter Mortar System, Undersea Master Communications Node, and Enhanced Situational Awareness.</p> <p>FY04 Continue development of FY03 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</p>				

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100

sensors and command and control, and conduct initial investigations of technology thrust areas. Planned projects include: Software Definable Receiver Size Reduction; and Radio Frequency Planning and Assessment Tool for C4I Systems Development.

	FY02	FY03	FY04	FY05
SOF Mobility Technologies	1.481	1.375	2.012	2.776
RDT&E Articles Quantity				

FY02 Continued to develop Night Vision Windshield technologies that permit SOF pilots to view external sensor data on a heads up display allowing the pilot to virtually see through the fuselage and Tactile Sensors to demonstrate tactile sensors on MH-53 pilots to improve pilot situational awareness in brown-out, low visibility conditions. Initiated Conformal Load-Bearing Antenna Structure/Systems for low probability of intercept/low probability of detection antennas on SOF combatant craft, and small versatile maritime craft modeling and scaling to include use of composite material technologies to enhance SOF craft reliability and survivability. Completed Active Noise Cancellation to reduce acoustic signature of SOF propeller craft, Wind Tunnel Integrated Real Time in the Cockpit/Real Time Out of the Cockpit Experiments and Demonstrations to provide capability to interface SOF platforms communications and intelligence systems with new situational awareness; and Special Threat Awareness Receiver/Transmitter for enhanced SOF platform survivability in high threat environments.

FY03 Continue development of FY02 efforts. Continue Night Vision Windshield, Conformal Load-Bearing Antenna, and small versatile maritime craft. Complete Tactile Sensors.

FY04 Continue development of FY03 efforts. Continue to exploit technologies to improve the performance and survivability, and reduce the detectability 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 conduct initial 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. Planned projects include implementation of Hypersteriopsis for Improved Target Identification on AC-130 Gunships.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003		
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100
	FY02	FY03	FY04	FY05
SOF Weapons Technologies	1.644	1.023	2.066	2.835
RDT&E Articles Quantity				
<p>FY02 Continued Shoulder Fired Smart Round for a man-portable fire-and-forget missile for anti-materiel use and Universal Initiator that is a modular safe and arm device for hand emplaced explosives. Initiated Joint SOF Demolitions Kit Enhancements to enhance accuracy and lethality of advanced demolition technology; and Enhanced Small Arms Technology inquiries to improve fire accuracy and lethality of SOF weapons.</p> <p>FY03 Continue development of FY02 efforts. Continue the development of the SOF Demolitions Kit Enhancements, Enhanced Small Arms Technology, and Universal Initiator.</p> <p>FY04 Continue development of FY03 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. Conduct initial investigations of technology thrust areas.</p>				
	FY02	FY03	FY04	FY05
SOF Sustainment Technologies	1.244	1.397	1.424	1.059
RDT&E Articles Quantity				
<p>FY02 Continued Geological (GEO) Survey Kit to determine if the California bearing ratio for surfaces is safe for aircraft landing and use; Accurate Tactical Navigation System to use in Global Positioning System denied areas; and Phrase Translation System for a handheld system for SOF operators in a tactical environment. Initiated Special Tactics Rappel/Fast Rope to provide an improved and safer rappel and fast rope system.</p> <p>FY03 Continue development of FY02 efforts. Continue Special Tactics Rappel/Fast Rope, and countermeasures technologies, Accurate Tactical Navigation System, and GEO Survey Kit. Complete and transition Phrase Translation System to PE 1160402BB/Project S200.</p> <p>FY04 Continue development of FY03 efforts. Continue to exploit technologies to increase SOF's survivability, countermeasures technologies, and performance. Continue to exploit technologies to improve the human endurance and sensory performance. Conduct initial investigations of technology thrust areas. Planned efforts include Special Reconnaissance Simulator.</p>				

		<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100

	FY02	FY03	FY04	FY05
Concept Exploration Studies	.560	.700	.688	.785
RDT&E Articles Quantity				
<p>FY02 Continued to explore/validate concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities. Continued Maritime Studies to enhance NAVSPECWARCOM operation survivability with special emphasis on the area of shock mitigation.</p> <p>FY03 Continue to explore/validate concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities. Continue Maritime Studies and initiate Low Cost Autonomous Attack System AC-130 concept to address SOF aircraft using a small UAV for armed reconnaissance.</p> <p>FY04 Continue to explore/validate concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities.</p>				
	FY02	FY03	FY04	FY05
Technology Development Exploitation	.299	.357	.500	.750
RDT&E Articles Quantity				
<p>FY02 Exploited technologies to meet critical SOF capability objectives. Initiated environmental characterization study of tactical rotary wing aircraft landings in brown out and white out conditions.</p> <p>FY03 Continue to 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. Initiated virtual periscope study for algorithm development of above water data collection from below the surface and initiate technology roadmaps for the technology thrust areas.</p> <p>FY04 Continue to 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.</p>				

		Exhibit R-2a, RDT&E Project Justification			Date: FEBRUARY 2003
Appropriation/Budget Activity				Special Operations Technology Development/Project S100	
RDT&E BA # 2					
		FY02	FY03	FY04	FY05
Dual Band Imaging Technologies		4.186			
RDT&E Articles Quantity					
FY02 This initiative was a congressional plus-up. Developed manufacturing technologies for novel, optically coated lens assemblies and systems, demonstrated via custom prototypes, necessary to begin producing night vision systems. This will provide the warfighter with unprecedented nighttime advantage.					
		FY02	FY03	FY04	FY05
Lightweight Counter-Mortar Radar System		2.920			
RDT&E Articles Quantity					
FY02 This initiative was a congressional plus-up. Developed technologies for a man pack (2 man packable) lightweight counter mortar prototype capable of automatically detecting and determining the origin of enemy mortar fire, short-range artillery and rockets with sufficient accuracy to commit counter fire by airborne assets. FY03 Complete and transition Lightweight Counter-Mortar Radar System.					
		FY02	FY03	FY04	FY05
SPIKE Urban Warfare System		3.894	3.327		
RDT&E Articles Quantity					
FY02 This initiative was a congressional plus-up. Funds were used to develop technologies to enhance Shoulder Fired Guided Missiles (SPIKE), and refine the guidance system for more accurate prosecution of hardened targets. FY03. This initiative was a congressional plus-up. Continue to develop technologies to SPIKE, and refine the guidance system for more accurate prosecution of hardened targets. Work continues to refine target tracking sub-system and warhead development.					
		FY02	FY03	FY04	FY05
Wireless Video Links for SOMROV		1.557			
RDT&E Articles Quantity					
FY02 This initiative was a congressional plus-up. Developed technologies for high data rate video links between various unmanned systems. These systems were evaluated during Millenium Challenge 2002.					



		Exhibit R-2a, RDT&E Project Justification			Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100	
Night Vision Fusion & Rapid Transmission		FY02	FY03	FY04	FY05
RDT&E Articles Quantity			2.473		
FY03 This initiative was a congressional plus-up. Develop novel lens assemblies which are smaller and lighter and prototype night vision systems and assemblies for a variety of warfighter applications including reconnaissance, battlefield imaging, situational awareness, and night sights.					
Knowledge Superiority		FY02	FY03	FY04	FY05
RDT&E Articles Quantity			1.615		
FY03 This initiative was a congressional plus-up. Improve methods and tools used to increase operational efficiency and performance while providing access to tactical data.					
Large Format Uncooled Infrared Sensors		FY02	FY03	FY04	FY05
RDT&E Articles Quantity			.950		
FY03 This initiative was a congressional plus-up. Funds will develop larger format arrays to enhance surveillance systems. Issues to be addressed include uniformity of very thin layers over a large area, deposition and processing of thin micro-support structures, and understanding fundamental issues associated with semi-crystalline and amorphous infrared materials.					
Imaging Auto Sensors For Autonomous Vehicles		FY02	FY03	FY04	FY05
RDT&E Articles Quantity			1.616		
FY03 This initiative was a congressional plus-up. Funds will develop and design miniature sensor packages to incorporate parallel processing which significantly increases processing power that support autonomous vehicles. This development will explore low cost micro-sensors with a focused effort to incorporate unique microelectronics and opto-electronic processing.					

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003		
Appropriation/Budget Activity RDT&E BA # 2				Special Operations Technology Development/Project S100
Shortwave Infrared Imagers		FY02	FY03	FY04
RDT&E Articles Quantity			1.616	
<p>FY03 This initiative was a congressional plus-up. Funds will develop large area Short Wave Infrared focal plane arrays and cameras for unattended sensors and navigation in difficult terrain. Effort will significantly expand the camera's capability by extension of the spectral response to full 1.0 to 2.0 micron spectral region and expansion of the array size to 480 x 640 and 960 x 1280 elements, providing a low cost, large area array for a wide range of systems.</p>				
Classified		FY02	FY03	FY04
RDT&E Articles Quantity		.400	.475	.950
<p>FY02 Provided under separate cover.  FY03 Provided under separate cover.  FY04 Provided under separate cover.</p>				
<p>C. Other Program Funding Summary: None.</p>				

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 3			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations (SO) Advanced Technology Development							

COST (Dollars in Millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Cost to Complete	Total Cost
PE1160402BB	17.804	79.550	67.017	48.925	71.386	54.962	20.346	21.534	Cont.	Cont.
S200, SO SPECIAL TECHNOLOGY	17.804	79.550	67.017	48.925	71.386	54.962	20.346	21.534	Cont.	Cont.

**Note: In FY 2002 and 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 3.**

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>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>
Previous President's Budget	10.982	62.276	62.593	42.023
President's Budget	17.804	79.550	67.017	48.925
Total Adjustments	6.822	17.274	4.424	6.902
Congressional Program Reductions		-7.500		
Congressional Rescissions		-2.034		
Congressional Increases		28.900		
Reprogrammings	6.373			
SBIR	-0.449	-2.092		

## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2003
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>FY02</p> <ul style="list-style-type: none"> <li>- Received \$8.581 million of FY02 Defense Emergency Response Funds for Air Robotics Technologies (Pointer Unmanned Aerial Vehicle).</li> <li>- Reflects a \$7.000 million adjustment for congressionally added programs that were more appropriately executed in different Program Element (PE) within the following projects: <ul style="list-style-type: none"> <li>- Surface Planing Wet Submersible from PE 1160404BB (\$3.700).</li> <li>- Rotary Wing UAV from PE 1160404BB (\$6.700).</li> <li>- Aircraft Defensive System to PE 1160404BB (-\$2.000).</li> <li>- Electronic Digital Compass System to PE 1160404BB (-\$1.400).</li> </ul> </li> </ul> <p>FY03</p> <ul style="list-style-type: none"> <li>- Reflects \$28.900 million for Congressionally added programs as follows: <ul style="list-style-type: none"> <li>- Robot Reconnaissance &amp; Surveillance (\$1.000)</li> <li>- Rotary Wing UAV (\$22.100)</li> <li>- Foreign Language Translator (\$1.000)</li> <li>- Adaptive Deployable Sensor Suite (\$4.800)</li> </ul> </li> </ul> <p>FY04</p> <ul style="list-style-type: none"> <li>- Program increases as follows: <ul style="list-style-type: none"> <li>- C4IAS ATDS (\$.586)</li> <li>- Mobility ATDS (\$.572)</li> <li>- Weapons ATDS (\$.439)</li> <li>- Sustainment ATDS (\$.639)</li> </ul> </li> </ul>	

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 2003
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 3	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations (SO) Advanced Technology Development		
<p>- TEI (\$.100) - PSYOP (\$2.950) Program reduction due to revised economic assumptions (\$-912)</p> <p>Schedule: None.</p> <p>Technical: None.</p>			

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

Date: FEBRUARY 2003

Appropriation/Budget Activity  
RDT&E BA # 3

Special Operations Special Technology Project S200

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Special Operations Special Technology	17.804	79.550	67.017	48.925	71.386	54.962	20.346	21.534
RDT&E Articles Quantity								

**Note: In FY 2002 and 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 3.**

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 operations 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

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

Date: FEBRUARY 2003

Appropriation/Budget Activity  
RDT&E BA #3

Special Operations Special Technology Project S200

for SOF weapons systems.

- SOF Sustainment Advanced Technology Demonstration (ATD). Exploit emerging technologies to conduct ATDs that provide SOF with increased survivability and performance. Exploit emerging technologies and to counter the threat of electro-optical devices, and devices that detect human presence, and to enhance individual operator capabilities.
- Technology Exploitation Initiative. Exploit emerging technologies to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.
- Advanced Tactical Laser (ATL) Technology Demonstration (ACTD). The ATL ACTD was started in FY 02 through funding provided by DUSD (AS&C) and the Joint Non-Lethal 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 war fighter. 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 war fighter. The steps toward demonstrating the utility of a high-energy laser weapon to conduct ultra-precision strike missions for the war fighter are:
  - a. Demonstrate weaponization of the sealed-exhaust Chemical Oxygen Iodine Laser in a modular system, capable of deployment 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 Design, build and demonstrate military utility of directed energy weapon on a C-130 aircraft.
- Psychological Operations Technology Demonstration (ACTD). Design, fabricate and demonstrate military utility of space based and advanced global reach broadcasts.

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

Date: FEBRUARY 2003

Appropriation/Budget Activity  
RDT&E BA # 3

Special Operations Special Technology Project S200

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

- Surface Planing Wet Submersible. Demonstrate future mobility for Naval Special Warfare with a craft incorporating both surface planning and subsurface wet submersible characteristics.
- Rotary Wing Unmanned Aerial Vehicle. Congressional add to provide intelligence gathering and dissemination capabilities for urban and complex terrain environments.
- Robot Reconnaissance & Surveillance. Evaluate emerging ground robotic platforms and payloads for special operations utility.
- Foreign Language Translator. Develop, demonstrate, and evaluate advanced hand-held voice-response translation device with on-board high-speed processing and speech algorithms.
- Adaptive Deployable Sensor Suite. Fabricate and evaluate network-based sensors and sensor architectures.

**B. Accomplishments/Planned Program**

	FY02	FY03	FY04	FY05
SOF Command, Control, Communications, Computers, and Intelligence (C4I) ATDs	2.237	2.477	1.789	7.228
RDT&E Article Quantity				

FY02 Continued the development of Antenna Enhancements high bandwidth receiver/transmitter conformal antennas for SOF platforms; Low Probability of Intercept/Detection (LPI/D) Imagery Forwarding to demonstrate a self-forming, self-queuing, networked communications link for SOF applications; Night Vision Electro-Optic to enhance night vision capability in lightweight systems; high bandwidth communications and sensor improvements for Robotics; and Burst Communications and LPD Antenna/Periscope for maritime platforms permitting multi-band LPI/D communications. Completed LPI/D Imagery Link demonstrating a short range, high data rate communications link; and Tactical Personal Computer to demonstrate advanced wearable computer technology for SOF special reconnaissance and combat control team applications. Initiated Special Tactics Man-packable Integrated Global Broadcasting System/Joint Broadcasting System (GBS/JBS) to provide a lightweight, man-packable, integrated GBS/JBS receiver system for quick reaction communications use by special tactics personnel.

FY03 Continue development and evaluation of FY02 efforts. Continue development of Antenna Enhancements; Low Probability of



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

Date: FEBRUARY 2003

Appropriation/Budget Activity  
RDT&E BA # 3

Special Operations Special Technology Project S200

Intercept/Detection (LPI/D) Imagery Forwarding; Night Vision Electro-Optic Enhancements; Communications for Robotics; Burst Communications and LPD Antenna; and Global Broadcasting System/Joint Broadcasting System.

FY04 Continue the development and evaluation of FY03 efforts. Continue to exploit emerging technologies to conduct Advanced Technology Demonstrations (ATD) that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Continue to exploit emerging technologies to conduct ATDs that provide SOF with increased sensory performance. Continue to exploit emerging technologies to locate and track targets or items of interest. Planned efforts include the Enhanced Tactical Antenna Suite.

	FY02	FY03	FY04	FY05
SOF Mobility ATDs	1.824	1.064	2.405	3.121
RDT&E Article Quantity				

FY02 Continued the development of SOF Robotics to leverage air, ground, and maritime robotics technology for SOF evaluations to determine operational utility; Sea, Air, Land Delivery Vehicle (SDV) Airdrop to assess and develop the capability to airdrop an SDV; and Vehicle Camouflage System for an easy on/off camouflage system for SOF vehicles providing mission ready advanced camouflage.

FY03 Continue development and evaluation of FY02 efforts. Continue SDV Airdrop and SOF Robotics. Complete Vehicle Camouflage system.

FY04 Continue development and evaluation of FY03 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.

	FY02	FY03	FY04	FY05
SOF Weapons ATDs	.842	.795	2.403	3.325
RDT&E Article Quantity				

FY02 Continued the development of the Anti-Materiel Payload Rifle. Completed Advanced Sniper Weapon Fire Control System and Active Denial Technology. Initiated Remote Standoff Capable/Remote Operated Small Arms Mount to increase effectiveness and operator survivability.

FY03 Continue development and evaluation of FY02 efforts. Continue development of Small Arms Mount and Anti-Materiel Payload Rifle.

FY04 Continue development and evaluation of FY03 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

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>	Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 3	Special Operations Special Technology Project S200

to increase standoff from threat weapons systems. Decrease cost and logistic support requirements for SOF weapons systems. Planned efforts include new NSW Combatant Craft Weapons.				
	FY02	FY03	FY04	FY05
SOF Sustainment ATDs	1.647	1.084	2.090	1.468
RDT&E Article Quantity				
<p>FY02 Completed development and evaluation of FY01 efforts. Continued the development of Intrusion Sensor System to detect and characterize local threats (miniature/multi-sensor system); Battery Recharging System, Equipment Waterproofing Technologies for underwater operations; and Underwater Adhesive Technologies to demonstrate advanced adhesive technologies for emplacing underwater demolitions; and initiated Military Free Fall Advanced Navigation System for high altitude, high opening insertion.</p> <p>FY03 Continue development of FY02 efforts. Continue Intrusion Sensor System, Military Free Fall Advanced Navigation System, and countermeasures technologies. Complete and transition Equipment Waterproofing, Underwater Adhesives Technologies, and Battery Recharging System. Initiate development of alternative power sources.</p> <p>FY04 Continue development and evaluation of FY03 efforts. Continue to exploit emerging technologies to conduct Advanced Technology Demonstrations that provide SOF with increased survivability, performance and countermeasures technologies. Planned efforts include evaluation of alternative power sources, a Phrase Translation System for a handheld system for use by SOF operators in a tactical environment, Accurate Tactical Navigation, Geological Survey Kit, and Night Vision Compatible Head Mounted Display.</p>				
	FY02	FY03	FY04	FY05
Technology Exploitation Initiative (TEI)	.330	.580	.600	.750
RDT&E Article Quantity				
<p>FY02 Exploited emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. Initiated Shot Counter Project for Small Arms Life Extension and evaluated Polymer Cased Ammunition Technology.</p> <p>FY03 Exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. Initiate SOF Visualization to develop and demonstrate C3 software tools.</p> <p>FY04 Exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas.</p>				

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003		
Appropriation/Budget Activity RDT&E BA # 3		Special Operations Special Technology Project S200		
	FY02	FY03	FY04	FY05
Surface Planing Wet Submersible	3.602			
RDT&E Article Quantity				
FY02 This initiative was a Congressional Plus-Up. Designed, fabricated and evaluated a six-man surface planing wet submersible to determine its benefits to future Naval Special Warfare mobility. The Special Warfare Littoral Warfare Craft (LWC)-6/Surface Planing Wet Submersible Boat is a hybrid Sea, Air, and Land Delivery Vehicle and LWC. The craft can transit at planing speeds to the operational area, transition to a free-flooding submersible capable of conducting wet submersible missions, and return to surface operations to depart the area.				
	FY02	FY03	FY04	FY05
Rotary Wing Unmanned Aerial Vehicle (UAV)	6.522	21.022		
RDT&E Article Quantity				
FY02 This initiative was a Congressional Plus-Up. Developed a long endurance UAV that will provide intelligence gathering and dissemination capabilities for urban and complex terrain environments. Continued the reduction in size, weight and power requirements of the current prototype and enhanced the detection algorithms of the system. FY03 This initiative was a Congressional Plus-Up. Fabricate four additional air vehicles (two Maverick and two Hummingbird) payloads and Miniature Ground Control Stations. Conduct maturation flight tests and participate in Joint Exercises.				
	FY02	FY03	FY04	FY05
Robot Reconnaissance & Surveillance		.952		
RDT&E Article Quantity				
FY03 This initiative was a Congressional Plus-Up. Evaluate emerging ground robotic platforms and payloads for special operations utility.				
	FY02	FY03	FY04	FY05
Foreign Language Translator		.952		
RDT&E Article Quantity				
FY03 This initiative was a Congressional Plus-Up. Develop, demonstrate, and evaluate advanced hand-held voice-response translation device with on-board high-speed processing and speech algorithms.				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>	Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 3	Special Operations Special Technology Project S200

	FY02	FY03	FY04	FY05
Adaptive Deployable Sensor Suite		4.550		
RDT&E Article Quantity				
FY03 This initiative was a Congressional Plus-Up. Fabricate and evaluate network-based sensors and sensor architectures.				
	FY02	FY03	FY04	FY05
Advanced Tactical Laser (ATL) Advanced Concepts Technology Demonstration (ACTD)	.300	45.624	54.270	28.721
RDT&E Article Quantity				
<p>FY 02 Developed the Systems Engineering Management Plan and the Integrated Technical and Management Plan. These documents set the programmatic baseline for the Advanced Tactical Laser (ATL) Advanced Concepts Technology Demonstration (ACTD). Initiated analysis and testing which will lead to an FY03 System Baseline Review (SBR). The SBR preparation consists of design experiments, modeling and simulation, and design analysis/trade studies.</p> <p>FY03 Continue the development of the ATL ACTD system. Effort at the start of the fiscal year focused on completion of the SBR. The SBR will establish the technical baseline for the ATL system, allowing us to allocate performance requirements and system integration constraints to the various ATL ACTD system components. Begin design of the system hardware for the Laser device (i.e., fluid supply system, resonator cavity and optics, energy flow path elements), surveillance and beam control (i.e., acquisition system, laser beam turret, beam control mirrors and sensors and software) and the hardware/software for the operator workstation. In the fourth quarter, conduct a Preliminary Design Review (PDR) of the ATL hardware and software. The Preliminary Design Review is an intermediate review to verify that the subsystem components and requirements allocations will allow the ATL system to continue to meet program objectives. Extensive work will be accomplished to analyze and assess the ATL system lethality vs. the design reference mission targets. Materials testing and analysis will be accomplished.</p> <p>FY04 Complete the design and begin the build-up of the ATL ACTD system. Accomplish the subsystem and system Critical Design Reviews, the final reviews of the system component designs before assembly and check out. Procure long-lead components and begin acquisition and delivery of ATL ACTD system hardware and software. Begin the Military Utility Assessment using ATL simulations and component hardware testing in conjunction with military exercises.</p>				

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003		
Appropriation/Budget Activity RDT&E BA # 3		Special Operations Special Technology Project S200		
	FY02	FY03	FY04	FY05
Classified	0.500	0.450	0.460	1.370
RDT&E Article Quantity				
FY02 Provided under separate cover. FY03 Provided under separate cover. FY04 Provided under separate cover.				
	FY02	FY03	FY04	FY05
Defense Emergency Response Fund Plan:	8.581			
RDT&E Article Quantity				
FY02 Demonstration of air robotics technologies and subsequent fielding of prototypes (Pointer Unmanned Aerial Vehicle).				
	FY02	FY03	FY04	FY05
Psychological Operations (PSYOPS) Advanced Concepts Technology Demonstration (ACTD)			3.000	2.942
RDT&E Article Quantity				
FY04 Demonstrate single channel satellite radio receivers modified for air delivery. Develop Unmanned Aerial Vehicle payload to retransmit Psychological Operations (PSYOP) broadcasts in FM/TV bands. Conduct Limited Objective Experiments supporting PSYOP Global Reach Advanced Concepts Technology Demonstration.				
C. Other Program Funding Summary: None.				
D. Acquisition Strategy. None.				

## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE				
						FEBRUARY 2003				
APPROPRIATION / BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE / PROJECT NO.							
RDT&E, DEFENSE-WIDE / 7			PE 1160404BB Special Operations (SO) Tactical Systems Development							
COST (Dollars in Millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Cost to Complete	Total Cost
PE1160404BB	233.524	287.621	255.981	253.588	145.227	72.713	65.322	38.337	Cont.	Cont
3129 MC-130H COMBAT TALON				23.980						
3284 SOF AIRCRAFT DEFENSIVE SYSTEM	13.762	69.018	53.615	20.985	15.557	5.794	6.054	5.281	Cont.	Cont
3326 AC-130U GUNSHIP	.457	28.969	1.228	1.291	2.541	2.586	2.686	2.763		
D476 PSYOPS ADV DEV		.475	2.273	.358	.360	4.518	1.351	2.363		
D615 SOF AVIATION	11.920	36.450	46.094	37.196	36.693	22.789	10.704	6.805		
S0417 UNDERWATER SYSTEMS ADV DEV	45.189	31.305	16.254	2.400	2.222	1.666	.385	1.487		
S1684 SOF SURFACE CRAFT ADV SYSTEMS	1.173	.950	.471			1.338	18.796	9.283		
S350 SOFPARS	4.454	1.704	2.603	3.933	3.843	3.765	3.870	3.962		
S375 WEAPONS SYSTEMS ADV DEV	3.251	3.568	3.840	2.771	.479	4.387	.587	.256		
S625 SOF TRAINING SYSTEMS	21.414		10.326	4.707	1.534	4.499	9.940	4.339		
S700 SO COMMUNICATIONS ADV DEV	3.382	2.095								
S800 SO MUNITIONS ADV DEV	3.020	3.690	.216	.216	.215	.215	.212	.212		
S900 SO MISCELLANEOUS EQUIPMENT ADV DEV	.488	1.427								
SF100 AVIATION SYSTEMS ADV DEV	34.170	48.150	82.605	114.331	58.890	21.156	10.737	1.586		
SF200 CV-22	90.844	59.820	36.456	41.420	22.893					

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	FEBRUARY 2003
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations (SO) Tactical Systems Development		

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>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>
Previous President's Budget	255.604	281.443	205.697	156.531
Current President's Budget	233.524	287.621	255.981	253.588
Total Adjustments	-22.080	6.178	50.284	97.057
Congressional Program Reductions	-5.500	-12.200		
Congressional Rescissions	-3.003	-4.864		
Congressional Increases		59.800		
Reprogrammings	-7.376	-29.358		
SBIR/STTR Transfer	-6.200	-7.200		

Funding:

- This program element received \$2.404 million of FY02 Defense Emergency Response Funds for the following: Leaflet Delivery System (\$.940), Psychological Operations Broadcasting System (\$.150), Special Purpose Receivers (\$.630), and Man-Portable Decontamination (\$.684).

## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2003
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations (SO) Tactical Systems Development	
<p>FY02</p> <ul style="list-style-type: none"> <li>- Project SF200: Office of Management and Budget Mid-Session Inflation adjustment (-\$3.004).</li> <li>- FY02 reflects (-\$9.900) decrease Congressionally added programs that were more appropriately executed in different program elements within the following projects: <ul style="list-style-type: none"> <li>- Project 3284: SOF A/C Defense System from PE1160402BB (\$2.000).</li> <li>- Project D615: Rotary Wing Unmanned Aerial Vehicle to PE 1160402BB (-\$6.700). Rebreather to PE 1160407BB (-\$1.000).</li> <li>- Project S0417: Surface Planing Wet Submersible to PE 1160402BB (-\$3.700).</li> <li>- Project S900: Electronic Digital Compass System from PE 1160402BB (\$.525).</li> <li>- Project S375: Titanium Tilting Helmet Mounts to procurement line item Small Arms and Weapons (-\$1.000)</li> <li>- Project 375: Reprogrammed \$1.500 for continued development of the Lightweight Counter Mortar Radar, which was transitioned from Project S200.</li> </ul> </li> </ul> <p>FY03</p> <ul style="list-style-type: none"> <li>- Reflects (\$59.800) for Congressionally added programs as follows: <ul style="list-style-type: none"> <li>- D615: Rotary Wing Unmanned Aerial Vehicle (\$22.100), and Knowledge Superiority (\$1.700)</li> <li>- SF100: Leading Edge Technology (\$1.500)</li> <li>- S0417: Advanced SEAL Delivery System (\$21.000), and Rebreather (\$1.300)</li> <li>- S1684: MKV Computer Upgrade (\$1.000)</li> <li>- S375: Precision Target Locator Designator (\$3.500), and Joint Threat Warning System (\$1.300)</li> <li>- S700: Blue Force Tracking (\$2.200), and Large Format Uncooled Infrared Sensors (\$1.000)</li> <li>- S800: Imaging Auto Sensors for Autonomous Vehicle (\$1.700)</li> <li>- S900: TACNAV Electronic Digital Compass System (\$1.500)</li> </ul> </li> </ul> <p>The following adjustments to Congressional adds were made to move the adds to a more appropriate program element (-\$26.975):</p> <ul style="list-style-type: none"> <li>- D615: Rotary Wing Unmanned Aerial Vehicle (-\$22.100), and Knowledge Superiority (-\$1.700) to PE 1160402BB</li> </ul>		



## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2003
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations (SO) Tactical Systems Development	
<ul style="list-style-type: none"> <li>- S0417: Rebreather (-\$1.300) to PE1160407BB</li> <li>- S375: Joint Threat Warning System (-\$1.300) to PE1160405BB</li> <li>- S700: Large Format Uncooled Infrared Sensors (-\$1.000)</li> <li>- S800: Imaging Auto Sensors for Autonomous Vehcile (-\$1.700) to PE1160401BB and, Navy transfer for the Lightweight Anti-Armored Weapon (\$2.125)</li> <li>- Project 3284: Net Decrease (-\$6.114) is a result of execution delay reduction.</li> <li>- Project 3326: Net increase (\$0.32) is a result of execution delay reduction.</li> <li>- Project D615: Net decrease (-\$1.111) is a result of execution delay reduction.</li> <li>- Project S0417: Net decrease (-\$1.223) is a result of execution delay reduction.</li> <li>- Project S800: Net decrease (-0.165) is a result of execution delay reduction.</li> <li>- Project SF100: Net decrease (\$0.871) is a result of execution delay reduction.</li> <li>- Project SF200: Net decrease (\$2.684) is a result of execution delay reduction.</li> </ul> <p>Congressional Reductions: Sections 8100, 8109, and 8135 (-\$4.864)</p> <p>FY04</p> <ul style="list-style-type: none"> <li>- Project 3284: Decrease of (\$1.085) reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project 3326: Decrease of (\$15.020) reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project D476: Increase of \$1.961 reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project D615: Increase of \$9.250 reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project S0417: Increase of \$13.201 reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project S1684: Increase of \$.471 reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project S350: Increase of \$0.706 reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project S375: Increase of \$3.339 reflects USSOCOC realignment of resources to support higher command priorities.</li> <li>- Project S625: Increase of \$10.326 reflects USSOCOM realignment of resources to support higher command priorities.</li> <li>- Project S800: Decrease of (\$1.068) reflects USSOCOM realignment of resources to support higher command priorities.</li> </ul>		

## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2003
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations (SO) Tactical Systems Development	
<p>- Project SF100: Increase of \$42.641 reflects USSOCOM realignment of resources to support higher command priorities</p> <p>- Project SF200: Decrease of (\$14.387) reflects USSOCOM realignment of resources to support higher command priorities.</p> <p>Schedule:</p> <p>Project SF200:</p> <ul style="list-style-type: none"> <li>- CV-22. USD (AT&amp;L) approved a new Acquisition Program Baseline for the CV-22 program in May 2002, which incorporates numerous CV-22 schedule changes.</li> </ul> <p>Project 3284:</p> <ul style="list-style-type: none"> <li>- Low Band Jammer. The Low Band Jammer program was structured in the FY 2003 President's Budget assuming aircraft integration work could be done concurrently with initial procurement. However, the program office has found that major modifications to aircraft structure and wiring are required for proper integration, testing, and installation of the jammers. Consequently, procurement will not begin until FY 2005, and the program funds have been restructured accordingly.</li> </ul> <p>Project S0417:</p> <ul style="list-style-type: none"> <li>- Non-Gasoline Burning Outboard Engine. Original vendor declared Chapter 11 bankruptcy. The purchasing company has assumed development duties. Milestone C is now scheduled for 3<sup>rd</sup> quarter FY 2004.</li> </ul> <p>Technical: None.</p>		

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	MC-130 Combat Talon II/Project 3129	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
				23.980				
RDT&E Articles Quantity								

A. Mission Description and Budget Item Justification: In an effort to mitigate Low Density/High Density assets, the Department increased USSOCOM's MC-130H inventory by ten aircraft in FY 2005. This program modifies 10 C-130H2 aircraft to an MC-130H Combat Talon II configuration. These aircraft provide low level infiltration, exfiltration, resupply of special operations forces and equipment in hostile/denied territories. Aircraft will also refuel SOF helicopters.

B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
System Development and Engineering				23.980
RDT&E Articles Quantity				

C. Other Program Funding Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To Complete	Total Cost
Procurement				72.178	76.021	239.509	182.912	11.024		

D. Acquisition Strategy. Spiral development will be implemented. Initial 5 aircraft will be fielded as with Talon aircraft limited capabilities, and 6-10 fielded as MC-130H in the post Common Avionics Architecture for Penetration configuration (See SF100 exhibit). Initial 5 aircraft will be retrofitted to the final configuration.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
TBD	CPAF CPAF/FFP							23.980	Feb-05		23.980
Subtotal Product Dev								23.980			23.980
Remarks:											
Development Spt											
Subtotal Spt											
Remarks:											
Developmental Test & Eval											
Subtotal T&E											
Remarks:											
Contractor Engineering Spt											
Subtotal Management											
Remarks:											
Total Cost								23.980			23.980
Remarks:											

UNCLASSIFIED

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2003																									
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	2002				2003				2004				2005				2006				2007				2008				2009							
	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 Deveopment Contract Award														▲																						
Interim Talon Fielding (1-5)																																				
MC-130H Fielding																																				■
System Design Dev/Non-Recurring Engineering																																				

<u>Exhibit R-4a. Schedule Profile</u>				Date: FEBRUARY 2003					
<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 3129/MC-130H Combat Talon II				
<u>Schedule Profile</u>		<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>
System Design Development Contract Award					2Q				
System Design Development/Non-Recurring Engineering						1-4Q	1-4Q	1-4Q	1-3Q
Interim Talon (acft 1-5)						4Q	1-4Q	1Q	
MC-130H Talon (acft 6-10)									1-4Q

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

Cost (\$ in million)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
SOF Aircraft Defense System	13.762	69.018	53.615	20.985	15.557	5.794	6.054	5.281
RDT&E Articles Quantity								

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

- Directional Infrared Countermeasures (DIRCM). The baseline program is a joint international cooperative United Kingdom/United States project to develop and procure an IR jammer for MC-130E/H and AC-130H/U aircraft capable of countering missile threats in the band one, two and four IR frequency spectrum. The DIRCM Pre-Planned Product Improvement program includes upgrades to a laser jamming source and the development and installation of an advanced missile warning system.
- APR-46 Upgrades. Program focus is to reduce parts obsolescence and incorporate performance improvements on the APR-46 Electronic Warfare System installed on multiple SOF C-130 platforms.
- Electronic Warfare Avionics Integrated Systems Facility (EWAISF). The EWAISF directly supports software development and testing. The EWAISF effort is a type of systems integration laboratory designed to support the incorporation of SOF aircraft defensive systems modifications into specific SOF platforms.
- High Power Fiber Optic Towed Decoys (HPFOTD) for AC-130 H/U Gunships and MC-130 E/H Talon aircraft. Program funds the testing of a nondevelopmental item, HPFOTD, that uses the ALQ-172 as a techniques generator. The HPFOTD will be installed on all AFSOC AC-130 H/U and MC-130 E/H aircraft to provide protection against monopulse and other radar guided and surface to air and air to air missile systems.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

- Low Band Jammer (LBJ). Program funds the development of the ALQ-172 LBJ modification. The LBJ will improve the capability of the ALQ-172 radio frequency jammer by adding low band jamming coverage for 13 AC-130U Gunships and 22 MC-130H Combat Talon II aircraft.

**B. Accomplishments/Planned Program**

Cost (\$ in million)	FY02	FY03	FY04	FY05
DIRCM	4.108	14.972	22.822	18.419
RDT&E Articles Quantity				
FY02 Continued to support a cooperative United Kingdom (UK)/United States (US) development/production program for 57 SOF C-130 aircraft. Continue to fund Directional Infrared Countermeasures (DIRCM) non-recurring engineering costs and contractor engineering support. Complete OT&E for MC-130-E/H Combat Talon and AC-130U Gunship models. FY03 Continue to support a cooperative UK/US development/production program for 57 SOF C-130 aircraft and contractor engineering support and fund non-recurring engineering costs. Fund development and non-recurring engineering costs of a laser upgrade jammer/lamp replacement and the Multi-Spectral Missile Warning System as pre-planned product improvement for DIRCM. FY04 Continue development of an advanced Multi-Spectral Missile Warning System as P3I for DIRCM.				
Cost (\$ in million)	FY02	FY03	FY04	FY05
APR-46 Upgrades	1.947			
RDT&E Articles Quantity				
FY02 Developed and quality tested upgrades to the APR-46 Electronic Warfare System. Goal of program is to reduce parts obsolescence and incorporate performance improvements.				
Cost (\$ in million)	FY02	FY03	FY04	FY05
Electronic Warfare Avionics Integrated Systems Facility	1.465	1.429	1.670	1.885
RDT&E Articles Quantity				
FY02 Continued to support laboratory efforts to maintain SOF aircraft defensive systems. FY03 Continue to support laboratory efforts to maintain SOF aircraft defensive systems. FY04 Continue to support laboratory efforts to maintain SOF aircraft defensive systems.				



<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

Cost (\$ in million)	FY02	FY03	FY04	FY05
High Power Fiber Optic Towed Decoys (HPFOTD)	6.242	27.078	16.606	
RDT&E Articles Quantity				

FY02 Began nonrecurring engineering efforts and on aircraft integration requirements efforts.  
 FY03 Continue nonrecurring engineering, and initiate development and testing of aircraft integration efforts.  
 FY04 Continue nonrecurring engineering, development and complete testing of aircraft integration efforts.

Cost (\$ in million)	FY02	FY03	FY04	FY05
Low Band Jammer (LBJ)		25.539	12.517	681
RDT&E Articles Quantity				

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

C. Other Program Funding Summary:

	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	To Complete	Total Cost
C-130 Mods (Procurement)										
Directional Infrared Countermeasures (DIRCM)		33.632	31.824	24.492	6.762	10.839	9.069	8.482		125.100
LBJ				55.276	57.025	56.750	3.242			172.293
HPFOTD			8.563	66.233	63.598	1.542	.820			140.756

D. Acquisition Strategy:

- DIRCM. The memorandum of agreement between the United Kingdom (UK)/United States (US) established the cooperative international baseline DIRCM program. The UK Ministry of Defense is the lead for the program. UK law applies to all baseline acquisition actions. USSOCOM program manager is the US Deputy to the UK Directional Infrared Countermeasures (DIRCM) program manager. There is a separate contract which includes laser and advanced missile warning systems development. (Current DOD policy prevents cooperative laser development with United Kingdom.) The laser upgrade will be a sole source contract with the existing DIRCM contractor. The advanced missile warning system contract will be competitively awarded.

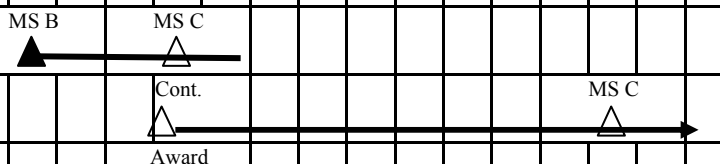
Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	SOF Aircraft Defensive System/Project 3284	

- Electronic Warfare Avionics Integrated Systems Facility (EWAISF). Award sole source contracts to the manufacturer of the prime mission equipment required for hardware and software integration into the EWAISF.
- Low Band Jammer (LBJ). Program will complete modification of two remaining aircraft series (AC-130U and MC-130H) with LBJ capability. Program will capitalize on previous SOF aircraft modifications with the LBJ, evaluate two competing systems and use a best value approach. Program management will be provided through an Air Force System Program Office and a pre-competed contract will be used for integration and installation. Memorandum of Agreement approved combining High Power Fiber Optic Towed Decoys (HPFOTD) and LBJ programs into one engineering and manufacturing development acquisition.
- High Power Fiber Optic Towed Decoy. Perform a market survey of the existing Towed Decoy currently available in the US market place. Conduct an assessment to determine which non-developmental item meets operational requirements. If more than one vendor meets all requirements, down-select based on best value. Perform nonrecurring engineering efforts in preparation of aircraft integration on all Air Force Special Forces Command AC-130H/U and MC-130E/H platforms.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Primary Hardware Dev											
Directional Infrared Countermeasures (DIRCM)	SS/FFP	Northrop (Chicago)	77.507								77.507
PM Engineering DIRCM	SS/CPFF	Northrop (Chicago)	1.734	0.310	Mar-03	4.111	Various	4.372	Various	Cont	Cont.
DIRCM Laser	SS/CPFF	Northrop (Chicago)	10.510	11.139	Jan-03	2.459	Various				24.108
DIRCM MSMWS	MIPR	AFEWS	0.500	2.359	Dec-02	14.752	Various	12.747	Various	2.935	33.293
Infrared Suppression System	CPFF/FFP	Boeing, Ft. Walton Beach, FL	5.890								5.890
Electronics Warfare Avionics											
Integrated Systems Facility	SS/CPFF	GTRI, GA	11.379	1.429	Feb-03	1.670	Feb-04	1.885	Feb-05	Cont.	Cont.
HPFOTD	CPAF	Boeing, Ft. Walton Beach, FL	9.242	27.078	Various	16.606	Feb-04				52.926
Low Band Jammer	CPAF	Boeing, Ft. Walton Beach, FL		25.539	Mar-03	12.517	Feb-04	0.681	Feb-05		38.737
Subtotal Product Dev			116.762	67.854		52.115		19.685		Cont.	Cont.
Remarks:											
Development Spt											
Subtotal Spt											
Remarks:											
Developmental Test & Eval											
Subtotal T&E			0.000	0.000		0.000					0.000
Remarks:											
Contractor Engineering Spt	FP	SVERDRUP	0.706	1.164	May-03	1.500	May-04	1.300	May-05		4.670
Subtotal Management			0.706	1.164		1.500		1.300			4.670
Remarks:											
Total Cost			117.468	69.018		53.615		20.985		Cont	Cont
Remarks:											

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2003																									
Appropriation/Budget Activity					Program Element Number and Name												Project Number and Name																			
RDT&E/7					PE1160404BB/Special Operations Tactical System Development												Project 3284/SOF Aircraft Defensive Systems																			
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	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																																				
AC-130H/U/MC-130E/H OT&E	_____																																			
Tech Integration	_____																																			
Laser Development																																				
Missile Warning System Development																																				
EWASIF Facility SDD	_____																																			
Laboratory Testing and Evaluation																																				
HPFOTD/LBJ																																				
Contract Award (Pre-EMD) and HPFOTD																																				
Non-Recurring Engr HPFOTD																																				
Production HPFOTD																																				
Contract Award (Pre-EMD) and LBJ																																				
Non-Recurring Engr/Aircraft Integration																																				
Production LBJ																																				



<u>Exhibit R-4a, Schedule Profile</u>					Date: FEBRUARY 2003				
<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 3284/SOF Aircraft Defensive Systems				
<u>Schedule Profile</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	
DIRCM									
AC-130H/U/MC-130E/H OT&E	1-4Q								
Tech Integration		1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Laser Development		1-4Q	1-2Q						
Missile Warning System Development			1-4Q	1-4Q	1-3Q				
EWASIF Facility									
Laboratory Testing and Evaluation	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
HPFOTD/LBJ									
Contract Award (Pre-EMD) - HPFOTD	4Q								
Non-Recurring Engr - HPFOTD		2-4Q	1-4Q						
Production - HPFOTD			2-4Q	1-4Q	1-4Q	1-3Q			
Contract Award (Pre-EMD) - LBJ		1-2Q							
Non-Recurring Engr/Aircraft Integration - LBJ		1-4Q	1-4Q	1-4Q					
Production - LBJ				1-4Q	1-4Q	1-3Q			

UNCLASSIFIED

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	AC-130U Gunship/Project 3326	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
AC-130U Gunship	.457	28.969	1.228	1.291	2.541	2.586	2.686	2.763
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. The AC-130U aircraft is more capable and survivable than the AC-130H aircraft. These subsystems enable the gunship to strike targets with surgical accuracy, to loiter safely in the target area for extended periods, and to perform these tasks at night and in adverse weather conditions. Every effort has been made to adapt off-the-shelf equipment. To the maximum extent possible, the subsystems in the AC-130U are common with systems on other Air Force (AF) Special Operations Command aircraft. AC-130U software is developed and sustained using a systems integration laboratory.

B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
Electro-Optical Sensor Technologies	.059	.058	.075	
RDT&E Articles Quantity				

FY02 Continued cooperative effort with AF laboratory to analyze and demonstrate gunship-related emerging electro-optical sensor technologies.  
 FY03 Continue cooperative effort with AF laboratory to analyze and demonstrate gunship-related emerging electro-optical sensor technologies.  
 FY04 Complete cooperative effort with AF laboratory to analyze and demonstrate gunship-related emerging electro-optical sensor technologies.

	FY 2002	FY 2003	FY 2004	FY 2005
Organizational Maintenance Manual Sets (OMMS)	.196	.191	.200	.091
RDT&E Articles Quantity				

FY02 Technical order verification/validation and printing for various ongoing AC-130U modifications and for Organizational Maintenance Manual Sets (OMMS).  
 FY03 Continue technical order verification/validation and printing for various ongoing AC-130U modifications and for OMMS.  
 FY04 Continue technical order verification/validation and printing for various ongoing AC-130U modifications and for OMMS.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	AC-130U Gunship/Project 3326	

	FY 2002	FY 2003	FY 2004	FY 2005
Technical Studies and Reliability/Maintainability Studies	.149	.477	.200	.200
RDT&E Articles Quantity				

FY02 Continued technical studies and reliability/maintainability studies.  
 FY03 Continue technical studies and reliability/maintainability studies.  
 FY04 Continue technical studies and reliability/maintainability studies.

	FY 2002	FY 2003	FY 2004	FY 2005
C-130 Modifications	0	27.796	.300	.500
RDT&E Articles Quantity				

FY03 Develop modifications to four C-130H's being added to the gunship inventory, including weight and drag reduction designs, redesigns for obsolescence issues, revised survivability studies, and a common electro-optical sensor system study.  
 FY04 Continue weight and drag reduction design, obsolescence engineering drawings, survivability studies, and a common electro-optical sensor system study.

	FY 2002	FY 2003	FY 2004	FY 2005
Flight Test Operations Support	.053	.447	.450	.500
RDT&E Articles Quantity				

FY02 Continued annual ground/flight test operations and support for ongoing AC-130 modifications.  
 FY03 Continue annual ground/flight test operations and support for ongoing AC-130 modifications.  
 FY04 Continue annual ground/flight test operations and support for ongoing AC-130 modifications.

C. Other Program Funding Summary:										
	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To Complete	Total Cost
AC-130U Gunship (Procurement)	12.152	128.842	390.054	38.979	165.198	177.930	5.104	5.253	Cont.	Cont.

D. Acquisition Strategy. Modify C-130H airframes into a side-firing gunship configuration on a sole-source fixed price incentive contract. A cost plus fixed fee contract line item will be included to accommodate any required changes due to obsolescence, vanished vendors or other required changes. The AC-130U is logistically supported at organizational, intermediate and depot levels. Initial operational capability occurred in March 1996, and full operational capability was declared March 2002. Funding increase in FY 2003 supports diminishing manufacturing source issues and non-recurring engineering for the four additional gunships.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Product Dev Organizations Tech Studies & Analysis	AF616	Air Force Research Lab, Wright Patterson AFB, OH	0.230							Cont.	Cont.
Tech Order Verification and Validation	Various	Various	0.542	0.191	Various	0.200	Various	0.091	Various	Cont.	Cont.
Reliability and Maintainability	C/CPAF	Boeing, Ft. Walton Beach, FL	0.572	0.477	Dec 02	0.203	Jan-04	0.200	Jun-05	Cont.	Cont.
Subtotal Product Dev			1.344	0.668		0.403		0.291		Cont.	Cont.
Dev Spt	AF616	Air Force Research Lab, Wright Patterson AFB, OH	1.276	0.058	Dec 02	0.075	Jun-04			Cont.	Cont.
Subtotal Spt			1.276	0.058		0.075		0.000		Cont.	Cont.
Devel Test & Eval	PO	46OG Det 1, Hurburt Field, FL	36.865	0.447	Dec 02	0.450	Feb-04	0.500	Jun-05	Cont.	Cont.
Test & Eval - (4 new Gunships)	FFP/CPFF	Boeing, Ft. Walton Beach, FL		27.796	Mar 03	0.300	Feb-04	0.500			28.096
Subtotal T&E			36.865	28.243		0.750		1.000		Cont.	Cont.
Management											
Subtotal Management											
Remarks:											
Total Cost			39.485	28.969		1.228		1.291		Cont.	Cont.
Remarks:											



UNCLASSIFIED

Exhibit R-4, Schedule Profile												Date: FEBRUARY 2003																								
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	2002				2003				2004				2005				2006				2007				2008				2009							
	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 Integration																																				
Acceptance Test Procedures																																				
Full Operation Capability		▲																																		
Contract Award for 4 additional AC-130U Gunships						△				△																										

<b>Exhibit R-4a, Schedule Profile</b>				Date: FEBRUARY 2003				
Appropriation/Budget Activity	Program Element Number and Name			Project Number and Name				
RDT&E/7	PE1160404BB/Special Operations Tactical Systems Development			Project 3326/AC-130U Gunship				
Schedule Profile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
System Integration		3-4Q	1-4Q	1-4Q				
Acceptance Test Procedures				2-4Q	1-2Q			
Full Operational Capability	2Q							
Contract Award for 4 additional AC-130U Gunships		2Q	2Q					

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	PSYOP Advanced Development/Project D476	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
		0.475	2.273	.358	.360	4.518	1.351	2.363
RDT&E Articles Quantity								

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

This program 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 programs funded in this project are grouped by the level of organization they support: Operational Element (Team) and Above Operational Element (Deployed). Sub-projects include:

**ABOVE OPERATIONAL ELEMENT (DEPLOYED)**

- 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.

**B. Accomplishments/Planned Program**

	FY 2002	FY 2003	FY 2004	FY 2005
POBS			1.999	
RDT&E Articles Quantity				

FY04 Conduct concept exploration study to determine future long range PSYOP broadcast assets. Acquire long range broadcast advanced developmental assets for evaluation.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	PSYOP Advanced Development/Project D476	

	FY 2002	FY 2003	FY 2004	FY 2005						
POBS		.475	.274	.358						
RDT&E Articles Quantity										
<p>FY03 Begin environmental and operational testing of Psychological Operations (PSYOP) Fly-Away Broadcast System (FABS) variants. Complete Developmental Testing and Operational Test &amp; Evaluation of the Theater Media Production Center .</p> <p>FY04 Complete environmental and operational testing of PSYOP Distribution System (PDS) FABS variants.</p>										
	FY 2002	FY 2003	FY 2004	FY 2005						
Defense Emergency Response Fund Plan:	1.090									
RDT&E Articles Quantity										
<p>FY02 Leaflet Delivery System (0.940). Conducted airworthiness compatibility and certification of the PDU-5 Leaflet Bomb (0.940) and conducted user evaluation of the PDS variants (0.150).</p>										
C. Other Program Funding Summary:									To	Total
	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>Complete</u>	<u>Cost</u>
Proc, PSYOP Equipment	4.522	5.532	18.264	12.433	15.204	15.835	19.659	45.370	Cont.	Cont.
D. Acquisition Strategy.										
<ul style="list-style-type: none"> <li>PSYOP Broadcast System (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 to meet PSYOP mission requirements commercial and governmental off the shelf systems and equipment to replace or enhance current system capabilities. The program also acquires performance enhancements to meet emergent requirements.</li> </ul>										

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Primary Hardware Dev	MIPR	Natick Lab, Natick, MA	1.582								
	MIPR	NAWC AD, St Indigoes, MD	0.132								
	MIPR	NAWC AD, St Indigoes, MD	0.168								
	ALLOT	Army-CECOM, Ft Monmouth, NJ	3.655								
	MIPR	DOE, Nat'l Engr Lab, Idaho Falls, ID	3.240								
Systems Engineering	ALLOT	Army-CECOM, Ft Monmouth, NJ	1.336								
	REQN	Various	0.142								
	MIPR	SPAWAR, Charleston, SC	0.060								
	TBD	TBD				1.999	Jan-04			Cont.	Cont.
Subtotal Product Dev			10.315			1.999				Cont.	Cont.
Remarks:											
Development Spt											
Subtotal Spt											
Remarks:											
Developmental Test & Eval	Various	Various	0.113								
	MIPR	Army ATC, Aberdenn Prov Gd, MD	0.448	0.240	Jan-03	0.035	Jan-04	0.035	Jan-05	Cont.	Cont.
	MIPR	TBD	0.546								
	MIPR	JITC, Ft Huachuca, AZ	0.697	0.235	Jan-03	0.239	Jan-04	0.323	Jan-05	Cont.	Cont.
	MIPR	JITC, Ft Huachuca, AZ	0.673								
Subtotal T&E			2.477	0.475		0.274		0.358		Cont.	Cont.
Remarks:											
Contractor Engineering Spt											
Subtotal Management											
Remarks:											
Total Cost			12.792	0.475		2.273		0.358		Cont.	Cont.
Remarks:											

UNCLASSIFIED

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2003																						
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	2002				2003				2004				2005				2006				2007				2008				2009				
	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 Testing FABS						Δ	—	Δ	Δ	—	—	Δ																					
POBS Testing TMPC						Δ	—	Δ																									
POBS Long Range Broadcast Systems									Δ	—	—	Δ																					
POBS Media Production Center PSYOP Distribution System (PDS) Testing														Δ	—	—	Δ																

<u>Exhibit R-4a, Schedule Profile</u>				Date: FEBRUARY 2003				
<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 D476/PSYOP Advanced Development				
<u>Schedule Profile</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>
POBS Testing FABS		2-4Q	1-4Q					
POBS Testing TMPC		2-4Q						
POBS Long Range Broadcast Systems			1-4Q					
POBS Media Production Center PDS Testing				1-4Q				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Aviation /Project D615	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
SOF Aviation	11.920	36.450	46.094	37.196	36.693	22.789	10.704	6.805
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. Third World operations are apt to involve greater distances and more challenging geographical environmental conditions than the European theater. This project will develop/upgrade SOF rotary wing aircraft systems that will be capable of successful operations in these increasingly hostile environments. Rotary wing systems supported by this project include: A/MH-6, MH-60L/K, MH-47D/E/G and MH-53. Efforts include:

- A/MH-6. (1) Integrates and tests G Cal 50 machine gun. (2) Conducts Electromagnetic Interference/Electromagnetic Countermeasure testing on Mission Enhancement Little Bird. (3) Develops lightweight conformal communications antennas. (4) Develops and qualifies a lightweight version of the MIL-STD-1760 Hellfire launcher.
- MH-47/MH-60 Aircraft. (1) Develops a follow-on weapon system to the currently fielded M-134 Mini Gun. Replacement will be lighter, more reliable/maintainable, with improved suppressive fire capability. (2) Continues nonrecurring engineering, integration and testing for MH-47 Service Life Extension Program (SLEP). (3) Develops, integrates and tests growth engine development for the MH-60 SLEP.
- MH-47/MH-60 Avionics/Sensors. (1) Develops and qualifies a “next generation” Forward Looking Infrared Radar (FLIR). New FLIRs will provide significantly increased performance, weight savings, and improved reliability/maintainability. Develops and qualifies a multiple sensor night vision system (Distributed Aperture System) that incorporates and blends the best attributes of image intensification, infrared, and low light level camera. (2) Develops and qualifies a Low Probability of Intercept/Low Probability of Detection (LPI/LPD) Obstacle Avoidance/Cable Warning system. (3) Develops and qualifies a rotary wing Terrain Following/Terrain Avoidance (TF/TA) navigation system. The system is characterized by a forward-looking LPI/PLD active sensor, digital elevation terrain data (passive) and a blended TF/TA solution of the processed active and passive navigation information. (4) Develops/integrates the Army-provided Army Aviation Command & Control System (A2C2S) into the MH-47. Develops the ability to control Unmanned Aerial Vehicles from the



<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Aviation /Project D615	

A2C2S and SOF Command & Control platforms. (5) Develops and qualifies an infrared exhaust suppressor for MH-47 aircraft. (6) Develops and qualifies a Common Avionics Architecture for Penetration radar altimeter. (7) Develops qualifies an Intelligence Broadcast Receiver which enhances situational awareness.

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

**B. Accomplishments/Planned Program**

	FY02	FY03	FY04	FY05
A/MH-6	.420	.411		
RDT&E Articles Quantity				

FY02 Completed prototype testing of the Mission Enhanced Little Bird (MELB) aircraft. Completed the integration of Allison 250-C30/R3 engine and Full Authority Digital Electronic Control software refinement. Completed testing of the G Cal 50 machine gun, which replaced the current M2AC machine gun for the MELB aircraft. Completed Electromagnetic Interference/Electromagnetic Countermeasure integration and testing of MELB aircraft. This included shipboard compatibility, full certification at the Naval Surface Warfare Center – Dahlgren facility, and additional shielding/protection for the aircraft’s systems.  
 FY03 Completed flight testing of MELB aircraft.

	FY02	FY03	FY04	FY05
MH-47/MH-60 – Aircraft	7.693	4.679	10.658	8.825
RDT&E Articles Quantity				

FY02 Provided airframe vibration analysis and nonrecurring engineering drawings for the MH-47 Service Life Extension Program (SLEP).  
 FY03 Continue nonrecurring engineering and integration for the MH-47 SLEP.  
 FY04 Continue nonrecurring engineering and integration for the MH-47 SLEP. Begin engineering development for MH-60 SLEP.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Aviation /Project D615	

	FY02	FY03	FY04	FY05
MH-47/MH-60 – Avionics/Sensors	3.807	24.694	35.436	28.371
RDT&E Articles Quantity				

FY02 Continued integration and testing of Modular Avionics, which incorporated modularized avionics and an open system computer architecture. Continued development, integration, and testing of an infrared exhaust suppressor system on MH-47 aircraft.

FY03 Begin development of assault and attack Forward Looking Infrared Radar (FLIR) systems to replace aging Q-16B and D systems for the fleet of Army Special Operations Aviation (ARSOA) aircraft. Begin effort to develop a replacement radar altimeter that is less detectable. Begin development and testing of a multisensor night vision system, a rotary wing Terrain Following/Terrain Avoidance (TF/TA) navigation system and an Obstacle Avoidance/Cable Warning (OA/CW) system for use on all ARSOA platforms.

FY04 Continue development of assault and attack FLIR systems to replace aging Q-16B and D systems for the fleet of ARSOA aircraft. Completed effort to develop a replacement radar altimeter that is less detectable. Continue development and testing of a rotary wing TF/TA navigation system and an OA/CW system for use for all ARSOA platforms.

	FY02	FY03	FY04	FY05
MH-53		6.666		
RDT&E Articles Quantity		2		

FY03 Complete nonrecurring engineering associated with incorporation of the Directional Infrared Countermeasures (DIRCM) system. DIRCM provides an Infrared (IR) jamming capability that counters missile threats in the band one, two, and four IR frequency spectrum.

C. Other Program Funding Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To <u>Complete</u>	Total <u>Cost</u>
Rotary Wing Upgrades & Sustainment	168.391	297.206	675.063	452.069	412.728	348.833	354.830	271.395	Cont.	Cont.

D. Acquisition Strategy. A/MH-6 - This effort provides necessary structural and fatigue analyses, component testing, and test support/data analysis efforts required to enhance operational safety margins and airworthiness of A/MH-6M aircraft. A contract modification is being evaluated for the existing Mission Enhancement Little Bird (MELB) flight test contract with the Boeing Company which has proprietary data rights to the A/MH-6 structural design, MELB flight load survey data, and the necessary test equipment to perform the required component fatigue testing and analysis efforts. The results of this effort will significantly improve the safety margin and retirement fatigue lives of flight critical components and assess the potential impact damage resulting from weapons firing. In addition, a service support contract was issued

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Aviation /Project D615	

with Rolls Royce Allison Company, the manufacturer of the MELB 250 C30R3/M engine, which assisted the Army Aviation Technical Test Center with aircraft instrumentation and installation design manual specification compliance. MH-47/MH-60 Aircraft - This effort provides for the development of the MH-47 and MH-60 fleet airframe Service Life Extension programs (SLEP) and develops and qualifies the replacements for the M-134 weapons system. The program leverages engineering and production assets off the CH-47F remanufacture and UH-60 SLEP programs (both funded by the Army) that will minimize costs required to install special operations forces-peculiar modernization initiatives. Proprietary considerations drive efforts to each original airframe manufacturer. A complete source selection process will be held for M-134 replacement program. MH-47/MH-60 Avionics/Sensors - determination and development of next-generation improvements, enhancements, and upgrades to sensors and avionics systems will be conducted using competitive processes to the maximum extent practicable. Proprietary considerations may direct some efforts to the original equipment manufacturer.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS							DATE: FEBRUARY 2003				
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Aviation/D615							
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Primary Hardware Dev											
MH-47/60 Aircraft	Various	PM TAPO/Ft Eustis, VA	9.691	4.679	Various	5.968	Various	6.619	Various	Cont.	Cont.
MH-47/60 Avionics/Sensors	Various	PM TAPO/Ft Eustis, VA		16.221	Various	19.844	Various	21.278	Various	Cont.	Cont.
A/MH-6	Various	PM-MELB/Ft Eustis, VA	1.239							Cont.	Cont.
MH-53	TBD	TBD		6.666	Various						6.666
Subtotal Product Dev			10.930	27.566		25.812		27.897		Cont.	Cont.
Remarks:											
Management											0.000
Subtotal Spt			0.000			0.000		0.000			0.000
Remarks:											
Developmental Test & Eval											
MH-47/60 Aircraft	Various	PM TAPO/Ft Eustis, VA				4.690	Various	2.206	Various	Cont.	Cont.
MH-47/60 Avionics/Sensors	Various	PM TAPO/Ft Eustis, VA	7.047	8.473	Various	15.592	Various	7.093	Various	Cont.	Cont.
A/MH-6	Various	PM-MELB/Ft Eustis, VA	3.741	0.411	Jun-03					Cont.	Cont.
Subtotal T&E			10.788	8.884		20.282		9.299		Cont.	Cont.
Remarks:											
Subtotal Management											
Remarks:											
Total Cost			21.718	36.450		46.094		37.196		Cont.	Cont.
Remarks:											

Exhibit R-4, Schedule Profile													Date: FEBRUARY 2003																							
Appropriation/Budget Activity					Program Element Number and Name												Project Number and Name																			
RDT&E/7					PE1160405BB/Special Operations Tactical System Development												Project D615/SOF Aviation																			
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	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				
MELB Prototype Testing																																				
MELB Electro-magnetic Interference/Electro-magnetic Countermeasures Integration and Testing	▲																																			
MH-47 SLEP	▲																																			
A/MH-6 G Cal 50	▲			▲																																
Modular Avionics	▲			▲																																
Army Airborne Command and Control System																																				
Multi-Function Displays	▲			▲																																
Next Generation FLIR					▲																															
Radar Altimeter Modification																																				
Panoramic Night Vision Goggles																																				
Vertical Lift TF/TA					▲																															
OA/CW					▲																															
A/MH-6 Lightweight Hellfire Launcher																																				

Exhibit R-4, Schedule Profile													Date: FEBRUARY 2003																							
Appropriation/Budget Activity					Program Element Number and Name													Project Number and Name																		
RDT&E/7					PE1160405BB/Special Operations Tactical System Development													Project D615/SOF Aviation																		
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	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				
A/MH-6 Conformal Antenna																																				
MH-47 Machine Gun Replacement																																				
MH-60 Machine Gun Replacement																																				
MH-53 DIRCM Milestone B																																				
DT/OT																																				
Milestone C																																				
Full Rate Production																																				

<u>Exhibit R-4a, Schedule Profile</u>				Date: FEBRUARY 2003					
<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 D615/SOF Aviation				
<u>Schedule Profile</u>		<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>
MELB Prototype Testing		1-4Q	1-4Q						
MELB Electro-magnetic Interference/Electro-magnetic Countermeasures Integration and Testing		1Q							
MH-47 SLEP		1-4Q	1-4Q	1-4Q					
A/MH-6 G Cal 50		1-4Q							
Modular Avionics		1-4Q							
Army Airborne Command and Control System					2-4Q				
Multi-Function Displays		1-4Q							
Next Generation FLIR			1-4Q	1-4Q					
Radar Altimeter Modification			2-3Q						
Panoramic Night Vision Goggles			3-4Q				3-4Q	1-4Q	1-4Q
Vertical Lift TF/TA			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
OA/CW			1-4Q	1-4Q					
A/MH-6 Lightweight Hellfire Launcher							2-4Q		
A/MH-6 Conformal Antenna							2-4Q		
MH-47 Machine Gun Replacement								2-4Q	
MH-60 Machine Gun Replacement						2-4Q			
MH-53 DIRCM MS B			2Q						
DT/OT			3-4Q						

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Underwater Systems Advanced Development/Project S0417	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Underwater Systems Advanced Dev	45.189	31.305	16.254	2.400	2.222	1.666	.385	1.487
RDT&E Articles Quantity								

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

- Advanced Sea, Air, Land (SEAL) Delivery System (ASDS). The ASDS is a one atmosphere submersible that will provide Naval Special Operations Forces with a new clandestine long range insertion capability required to conduct traditional SEAL missions ranging from reconnaissance to direct action. ASDS advantages over the current SEAL Delivery Vehicle, a wet submersible, include greatly increased range, increased payload and passenger capacity, state of the art communications, the ability to loiter in a target area and protection of personnel from complex dive profiles and exposure to long cold water transit.
- Undersea Systems. Development of undersea systems, which provide the SOF combat swimmers with the necessary diving and diving related equipment to fulfill assigned underwater combat missions, includes the following:
  - Naval Special Warfare (NSW) Very Shallow Water Mine Countermeasures (VSW MCM). Phased development/improvement of equipment to support the combat swimmer in the NSW VSW MCM operational environment.
  - Non-Gasoline Burning Outboard Engine (NBOE). Development of a submersible alternative fuel outboard engine for use on SOF Combat Rubber Raiding Craft.
  - SEAL Delivery Vehicle (SDV). Develop replacements for obsolete and/or unsupportable electronics with current technology to improve safety, reliability and performance. Upgrade mobility capabilities for insertion and extraction of the SDVs.



Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Underwater Systems Advanced Development/Project S0417	

B. Accomplishments/Planned Program				
	FY02	FY03	FY04	FY05
Advanced Sea, Air, Land (SEAL) Delivery System (ASDS)	42.253	30.337	15.082	1.618
RDT&E Articles Quantity				
<p>FY02 Completed host ship sea trials and acoustic trials. Continue Live Fire Test and Evaluation efforts. Continue P3I (battery and acoustics) development efforts and host submarine support. Redesign propeller for silencing improvements.</p> <p>FY03 Complete government testing phase to include operational evaluation. Continue P3I efforts on battery and acoustics. Continue development effort for NSSN host platform.</p> <p>FY04 Continue P3I efforts. Continue development effort for NSSN host platform.</p>				
	FY02	FY03	FY04	FY05
Naval Special Warfare (NSW) Very Shallow Water Mine Countermeasures (VSW MCM)	1.830	.523	.600	.201
RDT&E Articles Quantity				
<p>FY02 Completed operational test for both Semi-Autonomous Hydrographic Reconnaissance Vehicle (SAHRV) and Hydrographic Reconnaissance Littoral Mapping Device (HRLMD). Achieved MS C for SAHRV. Continue P3I development efforts for the SAHRV program.</p> <p>FY03 Achieve MS C for HRLMD and continue P3I development and integration efforts for the SAHRV program.</p> <p>FY04 Continue P3I development and integration efforts for the SAHRV program.</p>				
	FY02	FY03	FY04	FY05
Non-Gasoline Burning Outboard Engine	.858	.238		
RDT&E Articles Quantity				
<p>FY02 Continue development of the alternative fuels engine.</p> <p>FY03 Complete development of the alternative fuels engine.</p>				

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Underwater Systems Advanced Development/Project S0417	

	FY02	FY03	FY04	FY05
Sea, Air, Land (SEAL) Delivery Vehicle (SDV)	.248	.207	.572	.581
RDT&E Articles Quantity				

FY02 Developed, upgraded/replaced obsolete and/or unsupportable electronic equipment.

FY03 Continue to develop and upgrade/replace obsolete and/or unsupportable electronic equipment.

FY04 Continue to develop and upgrade/replace obsolete and/or unsupportable electronic equipment.

#### C. Other Program Funding Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To <u>Complete</u>	Total <u>Cost</u>
ASDS	27.098	27.564	8.351	11.698	132.998	28.337	147.446	152.586	Cont.	Cont.
ASDS Adv Proc	13.697		23.573	35.007		62.203	66.134		Cont.	Cont.
SOF Maritime Equip										
VSW MCM	5.151	.824		.794	1.127					7.896
NBOE		1.099	.925							2.024
STD	.996							1.927		2.923
MK 8 Mod 1 SDV	.501	10.673	10.100	1.772	2.109	2.394	1.946	1.596	Cont.	Cont.

#### D. Acquisition Strategy

- Advanced Sea, Air, Land Delivery System (ASDS). Selected three qualified companies to develop independent preliminary designs. Following completion of the preliminary design efforts, a request for proposal for the engineering and manufacturing development contract was released to these companies for proposal submittal for the design, fabrication, and test of the first ASDS. A single contractor was selected based on a best value source selection process.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Underwater Systems Advanced Development/Project S0417	

- Hydrographic Reconnaissance Littoral Mapping Device. Established to acquire a small, handheld unit to be used by Naval Special Warfare (NSW) forces in the conduct of clandestine hydrographic reconnaissance, ship attack and harbor penetration missions. The program utilizes commercial-off-the-shelf (COTS) technology and employs a phased acquisition strategy designed to leverage similar efforts currently being pursued by the Navy. Following user evaluation of prototype units and further design refinement, as well as developmental testing and a follow-on operational assessment, the program was authorized to proceed with production.
- Non-Gasoline Burning Outboard Engine. Transition of technology demonstrator to an acquisition program which commenced with advanced demonstration and validation. Modifications to current Military Amphibious Reconnaissance System engine include advanced electronically controlled direct fuel injection and ignition technologies. A competitive source selection was held, with three vendors responding, resulting in a down-select to a single contractor. That contractor filed Chapter 11 bankruptcy and the purchasing company has assumed development duties.
- Semi-Autonomous Hydrographic Reconnaissance Vehicle (SAHRV). The SAHRV is a small unmanned underwater vehicle for use by NSW personnel in the conduct of hydrographic reconnaissance. SAHRV utilizes commercial off-the-shelf (COTS) technology and employs a phased acquisition strategy designed to leverage Office of Naval Research sponsored initiatives. Four Engineering Development Models (EDM) were delivered in December 2000. The EDM supported developmental testing and operational testing and evaluation. Following operational testing and evaluation, a production decision commenced the production phase. Initial operational capability is planned for 3rd Qtr FY03. Full operational capability of 14 units is planned to be completed by 2nd Qtr FY04.
- Sea, Air, Land (SEAL) Delivery Vehicle (SDV). This effort replaces obsolete and/or unsupportable electronics equipment with current equipment. Identification and development of equipment for upgrading and/or replacing systems on the SDV will be accomplished through either Best-Value acquisition or, where appropriate, original equipment manufacturer replacement efforts.
- Swimmer Transport Device (STD). The STD is a modified, COTS, non-developmental item. The system is a hydrodynamic, rugged, reliable, highly maneuverable, underwater mobility transport system built of marine grade aluminum capable of transporting two combat swimmers and 80 pounds of payload up to 5 nautical miles at speeds greater than 2 knots. The system weighs 160 pounds, is 24 inches in diameter and 48 inches when completely collapsed, and 79 inches long when fully extended. The STD provides SOF combat

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Underwater Systems Advanced Development/Project S0417	

swimmers and their mission essential equipment an intermediate transport capability when operating from an insertion/extraction platform to and from target areas. The Swimmer Transport Device (STD) limits exposure time to cold water and minimizes the excessive exertion and fatigue placed on the combat swimmers while transiting the distance to target and return. The STD allows SOF combat swimmers to transit longer distances, while delivering increased payload, in adverse conditions. Determination and development of next-generation improvements, enhancements, and upgrades will be conducted using competitive processes to the maximum extent practicable. Proprietary considerations may direct some efforts to the original equipment manufacturer.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Underwater Systems Advance Development/S0417							
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Primary Hardware Dev											
SAHRV	FFP	WHOI, Woods Hole, MA	4.853	0.323	Mar-03	0.387	Jan-04	0.060	Jan-05		5.623
HRLMD	FFP	UT-ARL, Austin, TX	0.500								0.500
NBOE	Various	Various	0.757								0.757
SDV	WR	CSS, Panama City, FL	12.424	0.207	Various	0.572	Various	0.581	Various	Cont.	Cont.
STD	FFP	Stidd Systems, Inc. Greenport, NY	0.162								0.162
ASDS	CPIF/C	Northrop-Grumman	292.000	7.468	Various					Cont.	Cont.
ASDS	CPFF	Newport News Ship Yard, VA	6.774	1.831	Various					Cont.	Cont.
ASDS P31 and Host Support	Various	Various	13.571	12.672	Various	15.082	Various	1.618	Various		42.943
Subtotal Product Dev			331.041	22.501		16.041		2.259		Cont.	Cont.
Remarks											
Technical Data											
ASDS	Various	Various	8.044								8.044
SAHRV	WR	CSS, Panama City, FL		0.105	Jan-03	0.113	Jan-04	0.035	Jan-05		0.253
HRLMD	WR	CSS, Panama City, FL	0.200								0.200
NBOE	WR	CSS, Panama City, FL	0.043	0.024	Jan-03						0.067
Subtotal Supt.			8.287	0.129		0.113		0.035		0.000	8.564
Remarks											
Test & Evaluation											
Engineering T&E (NBOE)	Various	Various	0.268								0.268
DT&E (STD)	MIPR	CSS, Panama City, FL	0.153								0.153
OT&E (ASDS)	Various	OPTEVFOR, Norfolk, VA	1.085	2.000	Various						2.000
Host Testing (ASDS)	Various	NAVSEA, Arlington, VA	19.115	1.500	Various						1.500
Launch & Recovery Trials (ASDS)	Various	NAVSEA, Arlington, VA									0.000
LFT&E (ASDS)	Various	NAVSEA, Arlington, VA	0.050	1.100	Various						1.100
DT&E (SAHRV)	WR	CSS, Panama City, FL	0.222					0.050	Oct-04		0.272
DT&E (SAHRV)	WR	CARDEROCK, West Bethesda, MD	0.037								0.037
OT&E (SAHRV)	WR	OPTEVFOR, Norfolk, VA	0.049								5.330

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Underwater Systems Advance Development/S0417							
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Test & Evaluation (Cont.)											
DT&E (HRLMD)	WR	CSS, Panama City, FL	0.118								0.118
OT&E (HRLMD)	WR	TBD	0.020								0.020
DT&E (NBOE)	MIPR	CSS, Panama City, FL		0.095	Jan-03						0.095
OT&E (NBOE)	WR	OPTEVFOR, Norfolk, VA		0.048	Jan-03						0.048
Subtotal T&E			21.117	4.743		0.000		0.050			0.138
Remarks											
Management											
Contract Eng. Supt. (SAHRV)	FFP	ANADAC, Arlington, VA	0.898								0.898
Govt. Eng. Supt. (SAHRV)	WR	CSS, Panama City, FL	0.910	0.070	Jan-03	0.074	Jan-04	0.040	Jan-05	0.254	1.348
Program Mgt. Supt.(SAHRV)	WR	NAVSEA, Washington, DC	0.250	0.025	Feb-03	0.026	Jan-04	0.016	Jan-05	0.077	0.394
Contract Eng. Supt. (HRLMD)	FFP	ANADAC, Arlington, VA	0.050								0.050
Govt. Eng. Supt. (HRLMD)	WR	CSS, Panama City, FL	0.089								0.089
Program Mgt. Supt. (HRLMD)	WR	NAVSEA, Arlington, VA	0.072								0.072
Contract Eng. Supt. (NBOE)	FFP	DMR, Panama City, FL	0.165	0.019	Jan-03						0.184
Program Mgt. Supt (NBOE)	MIPR	CSS, Panama City, FL	0.832	0.052	Jan-03						0.884
Program Mgt Spt (SDV)	WR	NAVSEA, Arlington, VA	0.433							Cont.	Cont.
Various (ASDS)	Various	Various	5.431	3.766	Various					Cont.	Cont.
Program Mgt Supt. (STD)	Various	Various	0.013								0.013
Govt. Eng Support (STD)	MIPR	CSS, Panama City, FL	0.040								0.040
Subtotal Management			9.183	3.932		0.100		0.056		Cont.	Cont.
Remarks:											
Total Cost			369.628	31.305		16.254		2.400		Cont.	Cont.
Remarks:											

UNCLASSIFIED

Exhibit R-4, Schedule Profile															Date: FEBRUARY 2003																			
Appropriation/Budget Activity RDT&E/7								Program Element Number and Name PE1160404BB/Special Operations Tactical System Development												Project Number and Name Project S0417/Underwater System Advanced Development														
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009					
	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)																																		
Host Ship/ Acoustic Trials/LFT&E/OPEVAL																																		
Delivery to User (IOC)																																		
P3I Development																																		
Non-Gasoline Burning Outboard Engine																																		
Development/ Testing																																		
Milestone C																																		
Naval Special Warfare Very Shallow Water Mine Countermeasures																																		
OT (Semi-Autonomous Hydrographic Reconnaissance Vehicle [SAHRV])																																		
Milestone C (SAHRV)																																		
P3I (SAHRV)																																		
DT/OT (Hydrographic Reconnaissance Littoral Mapping Device [HRLMD])																																		

UNCLASSIFIED

Exhibit R-4, Schedule Profile															Date: FEBRUARY 2003																	
Appropriation/Budget Activity RDT&E/7										Program Element Number and Name PE1160404BB/Special Operations Tactical System Development										Project Number and Name Project S0417/Underwater System Advanced Development												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
Milestone C (HRLMD)					▲																											
Swimmer Transport Device																																
Test COTS/NDI																																
SEAL Delivery Vehicle																																
Develop and Test Improved Electronics	▲				—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
Next Generation Studies																																



UNCLASSIFIED

<b>Exhibit R-4a, Schedule Profile</b>				Date: FEBRUARY 2003				
<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 S0417/Underwater Systems Advanced Development				
<u>Schedule Profile</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>
Advanced Sea, Air, Land (SEAL) Delivery System								
Host Ship/Acoustic Trials/LFT&E/OPEVAL	1-4Q	1-3Q						
Delivery to User (IOC)		4Q						
P3I Development		1-4Q	1-4Q	1-4Q				
Non-Gasoline Burning Outboard Engine								
Development/Testing	4Q	1-4Q	1Q					
Milestone C			3Q					
Naval Special Warfare Very Shallow Water Mine Countermeasures								
OT (Semi-Autonomous Hydrographic Reconnaissance Vehicle [SAHRV])	1Q							
Milestone C (SAHRV)	2Q							
P3I (SAHRV)	3-4Q	1-4Q	1-4Q	1-4Q	1Q			
DT/OT (Hydrographic Reconnaissance Littoral Mapping Device [HRLMD])	1-3Q							
Milestone C (HRLMD)		1Q						
Swimmer Transport Device								
Test COTS/NDI								2-4Q
SEAL Delivery Vehicle								
Develop and Test Improved Electronics	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q			
Next Generation Studies								1-4Q

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	SOFPARS/Project S350	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
SOFPARS	4.454	1.704	2.603	3.933	3.843	3.765	3.870	3.962
RDT&E Articles Quantity								

A. Mission Description and Budget Item Justification: Special Operations Forces (SOF) Planning and Rehearsal System (SOFPARS) improves and streamlines SOF mission planning and mission execution capabilities in support of the USSOCOM core mission and tasks. This is achieved by improving data flow and information management; accelerating planning folder preparation; collaborating and sharing mission data; and providing mission equipment data initialization and interfaces. The mobility, complexity, quantity, elusiveness, and lethality of today's enemy threats dictate that SOF requires dynamic automated tools to maintain information superiority. SOFPARS will improve SOF response times and increase opportunities for pre-mission rehearsal, joint forces coordination, and crew/team rest.

The SOFPARS is a software development program following evolutionary acquisition strategies for delivering automated mission planning applications and tools with automated interfaces to Command, Control, Communications, Computers, and Intelligence systems. The applications and tools include SOF enhancements to the Air Force Mission Support System's personal computer-based Portable Flight Planning Software (PFPS) and the emerging Joint Mission Planning System (JMPS). The software enhancements tailor the baseline PFPS functions to support the Joint Chiefs Staff Pub series 3-05 that direct the methodologies for the conduct and execution of SOF missions. Additionally, the software improvements are developed to be tailorable for support of the component (Air, Ground, and Maritime) service and unit required training, tactics, and procedures, and the Theater Special Operations Commands (TSOC).

Current funding supports software development, force sustainment, operational support, and emergent requirements for the United States Army Special Operations Command, Air Force Special Operations Command, and the Naval Special Warfare Command. Future funding minimally supports the development of TSOC capabilities, and migration of the warfighter's capabilities to the JMPS. SOF commanders and warfighters must be able to plan and respond to missions of national importance, as well as day-to-day taskings and multiple command directed missions. Auto-assisted planning capabilities for SOF commands, components, forward operating bases, locations, teams, and crew are mission critical.

UNCLASSIFIED

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	SOPARS/Project S350	

<b>B. Accomplishments/Planned Program:</b>				
	FY 2002	FY 2003	FY 2004	FY 2005
Planned Portable Flight Planning Software (PFPS) releases	1.468	0.830	1.496	2.400
RDT&E Articles Quantity				
FY02 Release of SOF-version PFPS 3.2, 4Q FY02. Includes first issue to Army Special Forces Command. Development of PFPS SOF-only version 3.3 ongoing. FY03 Release of PFPS 3.3, 2QFY03. Development of joint version PFPS 4.0 with Army, Air Force and Navy functions, release 4QFY03. FY04 Begin development of SOC-level software development and integration. First-look migration evaluation of Joint Mission Planning System (JMPS). Transition planning and software conversion to JMPS framework begins.				
	FY 2002	FY 2003	FY 2004	FY 2005
Deferred/Future Requirements	1.030	.524	.717	.503
RDT&E Articles Quantity				
FY02 Developed and integrated aircraft weapons/electronics interfaces support for personal computer development and interface with joint systems. FY03 Develop and integrate aircraft weapons/electronics enhancements and interfaces with joint systems. FY04 Develop and integrate aircraft weapons/electronics enhancements and interfaces with joint systems.				
	FY 2002	FY 2003	FY 2004	FY 2005
Development and Modification of Automated Tools	1.579			0.600
RDT&E Articles Quantity				
FY02 Conducted the development and modification of automated tools to meet ground mission planning requirements.				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	SOPARS/Project S350	

	FY 2002	FY 2003	FY 2004	FY 2005
Test and Evaluation of Core Software	.377	0.350	.390	.430
RDT&E Articles Quantity				

FY02 Continued test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models.

FY03 Continue test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models.

FY04 Continue test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models.

C. Other Program Funding Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To <u>Complete</u>	Total <u>Cost</u>
SOPARS	4.660	0.294	0.292	0.192	0.663	0.472	0.491	0.494	Cont.	Cont.

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

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Planning and Rehearsal System /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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Subtotal Product Dev											
Remarks:											
Development Support	C/CPFF	CAS, Huntsville, AL	2.040	0.524	Dec-02	0.717	Dec-03	0.503	Dec-04	Cont.	Cont.
	C/CPFF	LMFS, Owego, NY	7.629								7.629
	Various	Various	0.847					0.600	Dec-04		0.847
Software Dev/Integ	SS/CPFF	GTRI, Atlanta, GA	2.893	0.830	Apr-03	1.496	Apr-04	2.400	Apr-05	Cont.	Cont.
	T&M	Tybrin, Ft Walton Beach, FL	5.346								5.346
	Various	Various	2.099								2.099
Subtotal Spt			20.854	1.354		2.213		3.503		Cont.	Cont.
Remarks:											

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Planning and Rehearsal System /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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Developmental Test & Eval	MIPR	46th FTS, Hurlburt Field, FL	1.135	0.150	Apr-03	0.165	Apr-04	0.180	Apr-05	Cont.	Cont.
	SS/CPFF	ARINC, Annapolis, MD	0.584	0.200	Apr-03	0.225	Apr-04	0.250	Apr-05	Cont.	Cont.
	SS/CPFF	Salinas Tech, FL	0.017								0.017
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			2.678	0.350		0.390		0.430		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			35.781	1.704		2.603		3.933		Cont.	Cont.
Remarks:											

UNCLASSIFIED

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2003																					
Appropriation/Budget Activity					Program Element Number and Name											Project Number and Name																
RDT&E/7					PE1160404BB/Special Operations Tactical System Development											Project S350/SOFPARS																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
Mission Planning Environment Software Suite																																
Portable Flight Planning System (PFPS) Releases																																
3.2				▲																												
3.3							Δ																									
4.0 Joint Build								Δ																								
4.X									Δ	—	Δ																					
4.X													Δ	—	Δ																	
JMPS																	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	
Aircraft/Weapons & Electronics Software Modules																																
Enhancements required to take advantage of new:																																
PFPS Functionality					▲	—	Δ		Δ	—	Δ		Δ	—	Δ		Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	
Route Analysis Tool		▲	▲		▲	—	Δ		Δ	—	Δ		Δ	—	Δ		Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	
Mission Planning Module		▲	▲		▲	—	Δ		Δ	—	Δ		Δ	—	Δ		Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	Δ	—	Δ	
Development of Automated Tools		▲	▲														Δ	—	Δ													





<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E.A BA # 7	Weapons and Support Systems Advanced Development /Project S375	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Weapons and Support Sys Adv Dev	3.251	3.568	3.840	2.771	.479	4.387	.587	.256
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:

- **Lightweight Counter Mortar Radar (LCMR).** The LCMR provides a man-portable, lightweight, 360° counter-mortar radar system designed to acquire hostile mortar and other indirect fire out to a range of 5,000 meters. The LCMR is compatible with current Command and Control communications and provides an all weather capability to the SOF operator on the ground, providing the operator with a precise target location used for counter-fire. This effort was transitioned from Project S200 in FY 2002.
- **M4A1 SOF Carbine Accessory Kit (M4MOD).** The M4MOD Kit enhances the standard Army M4 Carbine by using the latest technological advances in optional accessories (up to 30 different functions/capabilities) such as day scopes, night scopes, active aiming laser module, visible lights, grenade launchers, suppressors, hand grips, and close quarters battle sights. These accessories greatly enhance the lethality of the weapon system and the survivability of the SOF operator.
- **Night Vision Devices (NVD).** The SOF NVD system includes advanced field of view goggles, improved sensors, multi-spectral imaging, sensor fusion, Precision Targeting Location Designator (PTLD), and micro-laser integration and improved displays. The PTLD will be a combined laser range finder, geological locator, and laser designator for directing precision guided munitions.
- **SOF Tactical Advanced Parachute System (SOFTAPS).** SOFTAPS is a static line parachute system designed to provide operators with a dependable, reduced opening shock, and lower rate of decent steerable parachute capable of use in the full spectrum of SOF operating environments. SOFTAPS will be the eventual parachute of the SOF community. In the interim, the SF-10A will be used by SOF Forces. The SF-10A will replace the aging MC1-1C and T-10 parachutes currently used by SOF. SOFTAPS will attempt to leverage the Army's Advanced Tactical Parachute System.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E.A BA # 7	Weapons and Support Systems Advanced Development /Project S375	

- SOF Personal Equipment Advanced Requirements (SPEAR) Lightweight Environmental Protection (LEP). SPEAR-LEP is a continuation of an on-going clothing insulation subsystem, which includes five garments designed to provide protection to -40 degrees Fahrenheit. LEP includes lightweight underwear, mid-weight underwear, medium weight stretch bib overalls, a pile jacket and wind resistant jacket. The system is designed to be individually configured based upon mission, terrain and climatic requirements. Follow-on Block II efforts include flame resistant capabilities designed specifically for SOF aviators and a next generation (LEP II) which will offer increased protection to the operator.

#### B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
Lightweight Counter Mortar Radar (LCMR)	1.500			
RDT&E Articles Quantity	2			
FY02 Built/procured two LCMRs, established program management office, tested and gained system production certificate.				
	FY 2002	FY 2003	FY 2004	FY 2005
M4A1 SOF Carbine Accessory Kit (M4MOD)	1.460	.241	1.136	1.800
RDT&E Articles Quantity				
FY02 This initiative was a Congressional Plus-up. Funds were used to research, develop and test the Miniature Day/Night Sight. FY03 Develop Enhanced Combat Optical Sights and clip-on night vision devices, and continue efforts on the Enhanced Grenade Launcher Module (EGLM). FY04 Research, develop and test the next generation day/night and various next generation lasers and continue efforts on the EGLM.				
	FY 2002	FY 2003	FY 2004	FY 2005
Night Vision Devices (NVD)		3.327	2.704	.971
RDT&E Articles Quantity				10
FY03 This initiative is a Congressional Plus-up funding will be used to develop and test the next generation laser target designator. FY04 Design and test the next generation SOF NVD.				

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003			
Appropriation/Budget Activity RDT&E.A BA # 7	Weapons and Support Systems Advanced Development /Project S375				
	FY 2002	FY 2003	FY 2004	FY 2005	
SOF Tactical Advanced Parachute System	.128				
RDT&E Articles Quantity					
FY02 Tested the SF-10A, the interim solution parachute, in order to reduce the restrictions on use.					
	FY 2002	FY 2003	FY 2004	FY 2005	
SOF Personal Equipment Advanced Requirements (SPEAR)	.163				
RDT&E Articles Quantity					
FY02 Tested the next generation SPEAR-LEP.					
Defense Emergency Response Fund (DERF)	FY 2002	FY 2003	FY 2004	FY 2005	
Special Purpose Receiver-Variant (SPR-V)	.630				
RDT&E Articles Quantity	12				
FY02 Developed a SPR-V that uses existing Kalashnikov magazines and Soviet Bloc 7.62X3.9MM ammunition while retaining the characteristics of the M4A1 and remaining compatible with M4MOD accessory kit components. Program has since been terminated.					
DERF	FY 2002	FY 2003	FY 2004	FY 2005	
Man-Portable Decontamination	.684				
RDT&E Articles Quantity	6				
FY02 Conducted decontamination testing analysis/protocol development and report, live agent testing/safety certification, materials testing, and test articles.					

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

Date: FEBRUARY 2003

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

Weapons and Support Systems Advanced Development /Project S375

## C. Other Program Funding Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To <u>Complete</u>	Total <u>Cost</u>
Small Arms and Weapons	71.576	20.356	16.003	8.240	18.385	24.964	62.768	66.961	Cont.	Cont.

## D. Acquisition Strategy.

- Lightweight Counter Mortar Radar. Transition the program from Director of Technology to a Program Executive Office, with two working prototypes. Conduct additional research and development prior to production decision.
- M41A SOF Carbine Accessory Kit (M4MOD). The intent of the M4MOD program is to provide SOF with the ability to adapt the M4A1 Carbine to increase its operational effectiveness through improved target recognition, acquisition, and hit capability during day and night from close quarters to 600 meters. The program calls for continuing efforts contained in blocks that are first developed and tested, and then fielded to the full spectrum of SOF operators. Future blocks include a program to develop a pocket scope mount, an enhanced M203 capability, family of muzzle break suppressors, shot counter and numerous other components designed to enhance the capabilities of the weapon while at the same time combining or increasing capability.
- Night Vision Devices (NVD). Development of next generation NVD. Program will use evolutionary acquisition approach.
- SOF Tactical Advanced Parachute System (SOFTAPS). The SOFTAPS acquisition strategy calls for leveraging RDT&E efforts from the Army.
- SOF Personal Equipment Advanced Requirements (SPEAR)-Lightweight Environmental Protection (LEP). The SPEAR-LEP program is a continuation of currently fielded LEP. Resource dependent, the strategy calls for the full fielding of the current LEP followed by current and future RDT&E efforts designed at providing a fire retardant capability to SOF aviators across all components in the next generation LEP.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Hardware Dev											
M4MOD	Various	NSWC-Crane, Crane, IN	3.570	0.163	Various	0.225	Various	0.350	Various	Cont.	Cont.
SPEAR	FFP	Natick Soldier Center, Natick, MA	2.277							Cont.	Cont.
Titanium Tilting Helmet Mounts	FFP	Natick Soldier Center, Natick, MA	0.973								0.973
NVD	TBD	Various		3.000	Various	0.995	Various	0.287	Various	Cont.	Cont.
Subtotal Product Dev			6.820	3.163		1.220		0.637		Cont.	Cont.
Remarks:											
DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN	0.442								0.442
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG	0.503								0.503
Development Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.193	0.009	Various	0.138	Various	0.225	Various	Cont.	Cont.
NVD	TBD	Various		0.100	Various	0.824	Various	0.233	Various	Cont.	Cont.
Intregated Logistics Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.069	0.004	Various	0.072	Various	0.108	Various	Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.036							Cont.	Cont.
Configuration Mgmt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.102	0.005	Various	0.072	Various	0.109	Various	Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.069							Cont.	Cont.
NVD	TBD	Various		0.027	Various	0.330	Various	0.101	Various	Cont.	Cont.
Subtotal Spt			0.469	0.145		1.436		0.776		Cont.	Cont.
Remarks:											
DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN	0.055								0.055
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG	0.046								0.046

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Developmental Test											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.257	0.035	Various	0.225	Various	0.444	Various	Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.171							Cont.	Cont.
Operational Test											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.360							Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.346							Cont.	Cont.
SOFTAPS	MIPR	OTC, ABNSOTD, Ft. Bragg, NC	0.128								0.128
NVD	TBD	Various		0.100	Various	0.500	Various	0.249	Various	Cont.	Cont.
Subtotal T & E			1.262	0.135		0.725		0.693		Cont.	Cont.
Remarks:											
DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN	0.045								0.045
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG	0.040								0.040
Government Eng Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.112	0.006	Various	0.007	Various	0.013	Various	Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.070							Cont.	Cont.
Program Mgmt Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.369	0.012	Various	0.280	Various	0.459	Various	Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.240							Cont.	Cont.
Travel											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.123	0.007	Various	0.117	Various	0.093	Various	Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.104							Cont.	Cont.
NVD	TBD	Various		0.100	Various	0.055	Various	0.100	Various	Cont.	Cont.
Subtotal Management			1.018	0.125		0.459		0.665		Cont.	Cont.
Remarks:											
DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN	0.088								0.088
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG	0.073								0.073
Total Cost											
			9.569	3.568		3.840		2.771		Cont.	Cont.
Remarks:											

UNCLASSIFIED

Exhibit R-4, Schedule Profile													Date: FEBRUARY 2003																							
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	2002				2003				2004				2005				2006				2007				2008				2009							
	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				
Lightweight Counter Mortar Radar																																				
Developmental Test	▲				—————				△																											
Transition to PEO							△																													
Operational Test									△	———	△																									
MS C																△																				
IOC																△																				
FOC																				△																
M4MOD																																				
MDNS MS C												△																								
GLD/NSM MS C												△																								
FMBS MS C												△																								
Shot Counter MS C												△																								
EGLM MS C																△																				
NVD																																				
MS A							△																													

Exhibit R-4, Schedule Profile													Date: FEBRUARY 2003																			
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	2002				2003				2004				2005				2006				2007				2008				2009			
	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
MS B										Δ																						
Developmental Test												Δ																				
SOFTAPS																																
Concept Exploration	▲	▲																														
MS O/II		▲																														
Developmental Test			▲																													
Operational Test				▲																												
MS C/III								Δ																								
SPEAR																																
FOC	▲																															
PEPSE & MBSS Proc								▲																								
LEP Nomex SPC/F&DR								▲																								
LEP II/PCU SPC												Δ																				
LEP II/PCU MS C												Δ																				



UNCLASSIFIED

<b>Exhibit R-4a, Schedule Profile</b>				Date: FEBRUARY 2003				
<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				
Schedule Profile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Lightweight Counter Mortar Radar								
Developmental Test	1-4Q	1-4Q	1Q					
Transition to Special Programs		3Q						
Operational Test			1-3Q					
Milestone C			4Q					
IOC			4Q					
FOC				4Q				
M4MOD								
MDNS MS C			2Q					
GLD/NSM MS C			2Q					
FMBS MS C			2Q					
Shot Counter MS C			2Q					
EGLM MS C				3Q				
NVD								
MS A		3Q						
MS B			2Q					
Developmental Test			4Q					
SOFTAPS								
Concept Exploration	1-2Q							
MS O/II	2Q							
Developmental Test	3Q							
Operational Test	4Q							
MS C		3Q						
SPEAR								
FOC	1Q							
PEPSE & MBSS Proc		1Q						
LEP Nomex SPC/F&DR		1Q						
LEP II/PCU SPC		2-3Q						
LEP II/PCU MS C		3Q						

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Training Systems /Project S625	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
SOF Training Systems	21.414		10.326	4.707	1.534	4.499	9.940	4.339
RDT&E Articles Quantity								

A. Mission Description and Budget Item Justification: This project funds analysis, development, test, and integration of Special Operations Forces (SOF) aviation-related simulator training and mission rehearsal systems and upgrades. Sub-projects include:

- Common Avionics/Architecture for Penetration (CAAP) for fixed wing aircraft and Common Avionics Architecture Systems (CAAS) for rotary wing aircraft: Conduct training systems requirements analysis and market surveys of leading industry to determine the best approach/strategy to configure CAAP/CAAS SOF simulators concurrent with their respective aircraft.
- Light Assault Attack Reconfigurable (LASAR) Simulator: Develops an integrated, combat mission flight simulator into the existing High Level Architecture (HLA) environment to conduct real-world mission rehearsal for A/MH-6M, Mission Enhanced Little Bird (MELB), aircraft. The MELB LASAR simulator enables initial, mission, special qualification, continuation, and upgrade flight training, including weapons training. Currently, no training devices exist with this capability.
- HLA: DOD-wide effort sponsored by Defense Modeling and Simulation Office to establish a Distributed Mission Training and Rehearsal (DMT/DMR) capability, building on the experience of distributed interactive simulation protocols.
- Conduct nonrecurring engineering in preparation for upgrade of an older MH 47E simulator

B. Accomplishments/Planned Program

	FY02	FY03	FY04	FY05
SOF Training Systems	21.414		10.326	4.707
RDT&E Articles Quantity				

FY02 MELB LASAR: Conducted source selection award contract and began systems engineering and requirements analysis.  
 FY04 Perform development efforts for the new MH 47G/60 Combat Mission Simulator and the MH 60 CAAS Desktop and Part Task Trainer. Develop SOF Training and Rehearsal Systems to improve joint rehearsal capability and yield higher fidelity DMT/DMR. Conduct research and analysis of improved joint common architecture resulting in higher levels of correlation between the simulator's Out-the-Window view, sensors, threat, weather, and weapons effects with the rest of the SOF training and rehearsal network. Nonrecurring engineering in preparation for

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Forces (SOF) Training Systems /Project S625	

upgrading older MH 47/60 combat mission simulators.

C. Other Program Funding Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To <u>Complete</u>	Total <u>Cost</u>
Proc, SOF Training Systems	4.200	13.728	56.133	57.900	17.943	24.021	135.056	51.634	Cont.	Cont.

D. Acquisition Strategy. Mission Enhanced Little Bird Light Assault Attack Reconfigurable Simulator will be developed in two phases. Phase 1 provides for a simulator capable of satisfying basic training requirement. Phase II will provide a fully inter-operable Distributed Mission Training and Rehearsal System. MH 47G/60 Combat Mission Simulator will also be procured in 2 similar Phases – 1 in FY 04, 1 in FY 05.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Sys Eng Design/Dev HLA/Interoperability						1.475	Nov 04	0.988	Feb 05		2.463
Part Task Trainer (47/60 CMS)						4.917	Jan 04				4.917
CAAS - RW Aircraft NRE (47/60 CMS)						3.934	Jan 04	3.719	Jan 05		7.653
LASAR MELB	CPAF/CPFR FFP	PEO STRI, Orlando, FL	21.414								21.414
Subtotal Product Dev			21.414			10.326		4.707			36.447
Remarks:											
Total Cost			21.414			10.326		4.707			15.033
Remarks:											

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2003																						
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	2002				2003				2004				2005				2006				2007				2008				2009				
	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	
LARSAR MELB Phase I																																	
Contract Award		▲																															
SRR				▲																													
PDR					▲																												
CDR						▲																											
TRR										▲																							
RFT																▲																	
HLA Innovations/Architecture											▲																						
CAAP R/D RFI/S.S											▲																						
CAAS (DTT, PTT)											▲																						



<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Aviation Sys Adv Dev	34.170	48.150	82.605	114.331	58.890	21.156	10.737	1.586
RDT&E Articles Quantity								

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

- AC-130U Pre-Planned Product Improvement. Provides correction of system deficiencies and enhancement of mission capabilities for the AC-130U Gunship fleet.
- Aviation Engineering Analysis. Provides a rapid response capability to support SOF fixed-wing aircraft. The purpose is to correct system deficiencies, improve asset life, and enhance mission capability through the means of feasibility studies and engineering analyses. This sub-project provides the engineering required to improve the design and performance integrity of the aircraft support systems, sub-systems equipment, and embedded computer software as they relate to the maintenance, overhaul, repair, quality assurance, modifications, materiel improvements and service life extensions.
- Common Avionics Architecture for Penetration (CAAP). This program initiates development of terrain following/terrain avoidance radar having LPI/LPD characteristics. It also initiates development of an On-Board Enhanced Situational Awareness System which consolidates threat data from on and off-board sensors into a single coherent image to the crew, to include software development for electronic warfare data bus to coordinate on-board defensive system response to threats.
- EC-130 Obsolescence. This program provides for development and design to resolve special mission equipment obsolescence and vanishing vendor issues.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

- **Leading Edge Technology.** This program is directed toward improving near real time intelligence on SOF aircraft. This program will mature technologies enabling exploitation of vibroacoustic signatures relating to targets or tracking of friendly forces
- **MC-130E/P Upgrades.** This program is directed toward upgrading current capabilities while examining parts obsolescence and vanishing vendor issues associated with these aircraft. This effort will focus on design and integration of new and existing technologies with emphasis on commercial off-the shelf and non-developmental solutions.
- **MC-130H Aerial Refueling.** This program extends the range of vertical lift aircraft operating in politically sensitive/denied airspace through the use of MC-130H as a penetrating tanker aircraft. Integrates the air refueling system and necessary accessories into the MC-130H 1553 data bus. Elements of the air refueling system include enlarged paratroop door windows and non-developmental item aerial refueling pods.

#### B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
AC-130U Pre-Planned Product Improvement		1.843	2.439	1.890
RDT&E Articles Quantity				
FY03 Initiated APQ-180 Radar improvements: identified reliability and maintainability problems, implemented corrections, incorporated deficiency report corrections, and updated test program sets.				
FY04 Initiate All Light Level Television Selectable Laser Illuminator Beam improvements. Investigate reduced drag/weight reduction improvements.				
	FY 2002	FY 2003	FY 2004	FY 2005
Aviation Engineering Analysis	.478	.462	1.436	1.451
RDT&E Articles Quantity				
FY02 Conducted engineering analysis of SOF fixed wing aircraft avionics and sensors.				
FY03 Continued engineering analysis of SOF fixed wing aircraft avionics and sensors.				
FY04 Continue engineering analysis of SOF fixed wing aircraft avionics and sensors.				



UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003		
Appropriation/Budget Activity RDT&E BA # 7		Aviation Systems Advance Development/Project SF100		
	FY 2002	FY 2003	FY 2004	FY 2005
Common Avionics Architecture for Penetration (CAAP)	17.827	17.545	58.156	81.487
RDT&E Articles Quantity				
<p>FY02 Completed prototyping and conducted a ground demonstration of complex waveform modifications to an off-the-shelf airborne radar. Incorporated production of complex waveform modification. Conducted demonstration of vertical lift mission processor with CAAP functionality and time/space partitioning. Continued Terrain Following /Terrain Avoidance (TF/TA) and enhanced situational awareness (ESA) development under the US Air Force Avionics Modernization Program (AMP).</p> <p>FY03 Continue TF/TA and off-board ESA development under the US Air Force AMP contract. Specific CAAP activities scheduled under this contract for FY03 are: integration and test of TF/TA radar, C-130 CAAP risk reduction effort, CAAP software specification review, integration of intelligence broadcast receiver.</p> <p>FY04 Acceleration of TF/TA and off-board ESA development under the US Air Force AMP contract. Department of Defense added \$45M to CAAP in FY 2004 to accelerate TF/TA development and qualification. This acceleration was necessitated by a 26 month slip in the Air Force AMP program which creates unacceptable risks and cost to SOF's effort to field additional Talon II's to address low density/high demand issues. Specific CAAP activities scheduled are acceleration of TF/TA risk reduction, initiation of developmental testing for MC-130H platforms, CAAP preliminary design review and critical design review.</p>				
	FY 2002	FY 2003	FY 2004	FY 2005
CAAP On-Board ESA		8.782	18.607	22.379
RDT&E Articles Quantity				
<p>FY03 Initiate development of below line-of-sight on-board ESA (OBESA) system. Initiate engineering analysis and development of special receiver technology for ESA.</p> <p>FY04 Continue development of below line-of-sight OBESA system. Continue engineering analysis and development of special receiver, digital map and color displays. Software development for correlation fusion of special receive data with off/on-board threat information.</p>				
	FY 2002	FY 2003	FY 2004	FY 2005
EC-130 Equipment Obsolescence				.680
RDT&E Articles Quantity				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

	FY 2002	FY 2003	FY 2004	FY 2005
Leading Edge Technology	4.186	1.426		
RDT&E Articles Quantity				

FY02 This effort was a congressional add. Explored and demonstrated the suitability of the integration of Coherent Change Detection, Vivro-Electronic Signature Target Analysis (VESTA), Passive Acoustic Reflection Device (PARD), and Enhanced Digital Geodata Environment visualization technology on-board the AC-130U Gunship.  
 FY03 Congressional add. Continue effort focusing on VESTA and PARD technologies to design, and build an aircraft interface unit and associated algorithms for target characterization.

	FY 2002	FY 2003	FY 2004	FY 2005
MC-130E/P Upgrades				1.747
RDT&E Articles Quantity				

	FY 2002	FY 2003	FY 2004	FY 2005
MC-130H Aerial Refueling	11.679	18.092	1.967	4.697
RDT&E Articles Quantity				

FY02 Continued Engineering & Manufacturing Development (EMD); integration of aerial refueling system, aircraft plumbing and fuel tanks; and ground testing.  
 FY03 Continue EMD activities. Initiate trial install and flight test.  
 FY04 Continue EMD activities.

C. Other Program Funding Summary:									To	Total
	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>Complete</u>	<u>Cost</u>
Proc, C-130 Mods	16.626	71.768	214.798	174.548	154.969	89.903	22.056	33.865	Cont.	Cont.

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

Includes C-130 Modification sub-line item funds for AC-130H aircrew information mapping system, AVQ-19 replacement system, pitot static boom replacement, night vision imaging system, and oxygen regulators; AC-130U centerwing replacement and reduced drag/weight reduction; selectable laser illuminator beam; electro-optical sensors; APX-116 beacons; MC-130E/P upgrades; EC-130 environmental control units, special mission equipment obsolescence, media compatibility, part task trainer, wideband satellite, and other upgrades; MC-130H air refueling capability; and T-56 quick engine change kits.

#### D. Acquisition Strategy.

- AC-130U P3I, All Light Level Television Laser Beam Shaping. Maximize use of nondevelopmental laser technology to integrate improvements to the laser illuminator. Use Integrated Weapon System Support Program contract with Boeing.
- Aviation Engineering Analysis: Continue engineering analysis activities to correct system deficiencies, improve asset life, and enhance mission capability of SOF fixed-wing aircraft avionics and sensors.
- Common Avionics Architecture for Penetration (CAAP). Develop a common technical solution satisfying fixed and rotary wing requirements for penetration missions. The program will leverage knowledge gained on previously conducted advanced technology demonstrations to implement a low risk solution. The fixed wing application of CAAP will be accomplished by merging with the USAF C-130 Avionics Modernization Program. Optimal integration for vertical lift application is under investigation and will be implemented separately. USAF funds will pay for the majority of production items.
- EC-130 Obsolescence: Initiate a special mission equipment program via a pre-competed contract to identify obsolete and vanishing vendor parts replacements, maximizing use of commercial off the shelf and non-developmental items.
- MC-130E/P Upgrades: Initiate an upgrade program via a pre-competed contract to identify opportunities to improve required capabilities and provide solutions to parts obsolescence and vanishing vendor issues. This program will focus on maximizing use of commercial off the shelf and non-developmental item (NDI).

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

- MC-130H Aerial Refueling. Maximize use of NDI technology to develop, design, build and test an integrated aerial refueling system via Integrated Weapon System Support Program contract. The first phase of this program is Foreign Comparative Testing (FCT) of the MK 32B-902E Aerial Refueling POD. The FCT contract includes options to support engineering, manufacturing and development and production installs.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Aviation Systems Advance Development/SF100							
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Primary Hardware Development											
CAAP	C/CPAF	Boeing, Long Beach, CA	37.202	16.529	Various	58.156	Various	81.487	Various	Cont.	Cont.
Award Fees			1.065	1.016	Dec-03					Cont.	Cont.
MC-130 Air Ref (P3I)	C/CPFF(AF)	Boeing, Ft. Walton Beach, FL	12.434	18.092	Nov-02	1.967	Jan-04	4.697	Jan-05		37.190
Leading Edge Technology	Allot	SPAWAR, Charleston, SC	7.211	1.426							8.637
ALGS	Allot	Hanscom AFB, MA	4.366	8.782							13.148
CAAP ESA	TBD	TBD			Various	18.607	Various	22.379	Various	Cont.	Cont.
Subtotal Product Dev			62.278	45.845		78.730		108.563		Cont.	Cont.
Remarks:											
Development Support											
Engineering/Studies											
Aviation Engineering Analysis	Various	AF Research Laboratory	1.811	0.462	Various	1.436	Various	1.451	Various	Cont.	Cont.
AC-130U Gunship	Various	Various	4.785	1.843	Various	2.439	Various	1.890		Cont.	Cont.
MC-130H Air Refueling	MIPR	46TH TW, Hurlburt Fld, FL	0.300								0.300
ALE-47	SS/FFP	Boeing	0.200								0.200
MC-130E/P Sustainment	TBD	Lockheed Martin, Rockwell Collins						1.747	Various	Cont.	Cont.
EC-130 Obsolescence	TBD	Lockheed Marietta						0.680	Various	Cont.	Cont.
Subtotal Spt			7.096	2.305		3.875		5.768		Cont.	Cont.
Remarks:											
Total Cost			69.374	48.150		82.605		114.331		Cont.	Cont.
Remarks:											





<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	CV-22/Project SF200	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
CV-22	90.844	59.820	36.456	41.420	22.893			
RDT&E Articles Quantity	2 (AF)							

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 consists of 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 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 SOF infiltration/exfiltration 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.

B. Accomplishments/Planned Program

	FY 2002	FY 2003	FY 2004	FY 2005
Dev/Integration/Test of Block 10 Program	78.343	52.620	29.256	34.220
RDT&E Articles Quantity	2 (AF)			

FY02 Continue development/integration/testing of Block 10 program – cost plus award fee.  
 FY03 Will continue development and integration of the Block 10 capabilities, and will include the start of Block 10 Developmental Test & Evaluation (DT&E) flight testing.  
 FY04 Continue development/integration/testing of Block 10 capabilities and start of Block 10 DT&E flight testing.



<b>Exhibit R-2a, RDT&amp;E Project Justification</b>	Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	CV-22/Project SF200

	FY 2002	FY 2003	FY 2004	FY 2005
Program Office Support	.700	.700	.700	.700
RDT&E Articles Quantity	2 (AF)			
FY02 Continued program office support for Block 10 program. FY03 Continue program office support for Block 10 program. FY04 Continue program office support for Block 10 program.				
	FY 2002	FY 2003	FY 2004	FY 2005
Engineering and Logistics Support	6.500	6.500	6.500	6.500
RDT&E Articles Quantity	2 (AF)			
FY02 Engineering and logistics support for Block 10 program. FY03 Continue engineering and logistics support for Block 10 program. FY04 Continue engineering and logistics support for Block 10 program.				
	FY 2002	FY 2003	FY 2004	FY 2005
Directional Infrared Countermeasures (DIRCM) Laser Integration	5.301			
RDT&E Articles Quantity	2 (AF)			
FY02 Completed Viper laser integration testing for DIRCM system.				

C. Other Program Funding Summary:									To	Total
	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>Complete</u>	<u>Cost</u>
Proc, CV-22 SOF Osprey	18.202	57.404	108.790	133.244	125.646	160.343	222.638	202.920	Cont	Cont

D. Acquisition Strategy. The CV-22 program is managed by the Navy V-22 program office (NAVAIR PMA-275). This ensures that the CV-22 changes are incorporated into the ongoing V-22 production line with minimum impact. RDT&E funding is sent from USSOCOM to PMA-275 to place on contract with the V-22 prime contractor. The RDT&E funding will be used to fund block 10 (formerly Pre-Planned Product Improvement) development. Block 10 capability is required for full compliance with the Joint Operational Requirements Document. Funding for the baseline CV-22 Engineering Manufacturing and Development, known as Block 0, is embedded in the Navy budget.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
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 FY03	Award Date FY03	Budget Cost FY04	Award Date FY04	Budget Cost FY05	Award Date FY05	To Complete	Total Program
Primary Hardware Dev	SS/CPAF	NAVAIR/PMA-275 & Bell-Boeing, Patuxent River, MD	115.908	51.620	Feb-03	27.184	Jan-04	32.953	Jan-05	Cont.	Cont.
Award Fees			3.890	1.000	Feb-03	2.072	Jan-04	1.267	Jan-05	Cont.	Cont.
Subtotal Product Dev			119.798	52.620		29.256		34.220		Cont.	Cont.
Remarks:											
Contractor Engineering Spt											
Government Engineering Spt	WR	NAVAIR/PMA-275, Patuxent River, MD	9.505	7.200	Oct-02	7.200	Oct-03	7.200	Oct-04	Cont.	Cont
Travel and Logistics			0.400								0.400
Subtotal Management			9.905	7.200		7.200		7.200		Cont.	Cont
Remarks:											
Total Cost			129.703	59.820		36.456		41.420		Cont.	Cont.
Remarks:											

Exhibit R-4, Schedule Profile													Date: FEBRUARY 2003																								
Appropriation/Budget Activity						Program Element Number and Name												Project Number and Name																			
RDT&E/7						PE1160404BB/Special Operations Tactical System Development												Project SF200/CV-22																			
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009								
	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					
Acquisition Milestones																																					
CV-22 Block 10 Development	—————																																				
Block 0/10 Flight Test					△	—————																															
CV-22 IOT&E																					△	△															
CV-22 Deliveries																	PRTV #1 △	PRTV #2 △	Lot 8 Deliveries (2) △ △		Lot 10 Deliveries (3) △ △ △		Lot 9 Deliveries (3) △ △ △		Lot 11 Deliveries (2) △ △												
CV-22 IOC																																					



UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations (SO) Intelligence Systems Development							

COST (Dollars in Millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Cost to Complete	Total Cost
PE1160405BB	14.913	4.648	16.726	15.679	15.009	12.433	13.846	20.251	Cont.	Cont.
S400, SO INTELLIGENCE	14.913	4.648	16.726	15.679	15.009	12.433	13.846	20.251	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. The intelligence programs funded in this project are grouped by the level of organizational element they support: Operational Element (Team), Above Operational Element (Deployed), and Above Operational Element (Garrison).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
		FEBRUARY 2003		
APPROPRIATION / BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE / PROJECT NO.			
RDT&E, DEFENSE-WIDE / 7	PE 1160405BB Special Operations (SO) Intelligence Systems Development			
<b>B. Program Change Summary:</b>				
	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>
Previous President's Budget	14.989	1.590	6.063	5.706
President's Budget	14.913	4.648	16.726	15.679
Total Adjustments	-0.076	3.058	10.663	9.973
Congressional Program Reductions				
Congressional Rescissions		-0.120		
Congressional Increases		3.300		
Reprogrammings	0.299			
SBIR Transfer	-0.375	-0.122		
<b>Funding:</b>				
<b>FY02</b>				
- (Non-Add) This program element received \$3.085 million of FY02 Defense Emergency Response Funds for development, integration, and testing of commercial off-the-shelf hardware and software applications necessary for establishing initial capabilities of the Special Operations Joint Interagency Collaboration Center.				
<b>FY03</b>				
- Congressional increases of \$3.300 for the following programs:				
- \$1.350 for completion of development of the Joint Threat Warning System Ground Signals Intelligence Kit				
- \$1.000 for development of a common software baseline for an Embedded Integrated Broadcast System Receiver				
- \$1.950 for development and demonstration of a commercial technology used to identify optimal placement of unattended sensors.				
<b>FY04</b>				
- Transfer of funds from USAF to USSOCOM of \$6.000 million was implemented for USSOCOM unique requirements for the Counter-Proliferation Analysis and Planning System.				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2003
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations (SO) Intelligence Systems Development
<p>- A program increase of \$4.400 for the following programs:</p> <p>- \$2.458 for the Special Operations Joint Interagency Collaboration Center and \$2.000 for the Special Operations Command Research Analysis &amp; Threat Evaluation System in support of the Global War on Terrorism.</p> <p>- Internal realignments within the Command resulted in a net increase of \$0.443 million to this program element, with funding primarily supporting the Remote Miniature Weather System integration of an alternative comms link and eye-safe laser into existing components.</p> <p>- Additionally, revised economic assumptions of (\$0.180 million) were applied.</p> <p>Schedule: None.</p> <p>Technical: None.</p>	

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Intelligence/Project S400	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
SO Intelligence	14.913	4.648	16.726	15.679	15.009	12.433	13.846	20.251
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). MATT program enables combat forces to directly receive near-real-time operational intelligence products and threat information to support mission planning, updates, and mission execution. The program integrates MATT capabilities with Command, Control, Communications, and Intelligence (C3I) systems. MATT addresses the primary requirement for situational awareness as forces infiltrate and exfiltrate from operating areas. MATT was designated by Assistant Secretary of Defense (C3I) as one of the two tactical terminal migration systems, with MATT design being designated as the interim airborne variant of the Joint Tactical Terminal.
- National Systems Support to SOF (NSSS). NSSS is a Research & Development (R&D) program to improve the combat effectiveness of USSOCOM, its components, and the Theater Special Operations Commands through the innovative use of national, military, and commercial space intelligence and communications technologies and systems. This includes Imager Intelligence, Signals Intelligence, 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. National Systems



<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Intelligence/Project S400	

Support to SOF 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.

- **Joint Threat Warning System (JTWS).** JTWS is an evolutionary acquisition program that provides threat warning, force protection and enhanced situational awareness information to SOF via signal intercept, direction finding and Signals Intelligence (SIGINT). 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. It consists of four variants – Ground Kit, Team Transportable, Air and Maritime. The Privateer, Silent Shield and Improved SOF SIGINT Manpack System programs were consolidated under JTWS as of FY02.
- **Solid State Synthetic Aperture Radar (SSSAR).** Provides for target detection in high sea states and high ground clutter environments. The SSSAR program goal is to demonstrate a low cost SSSAR system comprised of fully developed off-the-shelf components integrated into an airborne platform.
- **Remote Miniature Weather System (RMWS).** RMWS is a lightweight and modular system providing near-real-time tactical weather data from remote or denied locations via satellite communications. The system provides SOF with an unattended weather data measurement and near-real-time reporting capability to support mission planning efforts.
- **Optimal Placement of Unattended Sensors (OPUS).** OPUS provides for the research and integration of a commercial lightweight, modular handheld sensor interface device. This effort will provide the capability to identify the optimal placement of unattended sensors in support of SOF mission planning efforts.

#### ABOVE OPERATIONAL ELEMENT (DEPLOYED)

- **Special Operations Tactical Video System (SOTVS).** SOTVS, including the Remote Surveillance Target Acquisition system, provides the capability to forward digital imagery near-real-time via current and planned future organic SOF tactical communication systems in support of surveillance and reconnaissance missions.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Intelligence/Project S400	

#### ABOVE OPERATION ELEMENT (GARRISON)

- **Special Operations Joint Interagency Collaboration Center (SOJICC):** The SOJICC provides a fully integrated capability to plan, coordinate, and integrate joint information operations and analysis in support of the Concept of Operations that support Secretary of Defense taskings, regional combatant commanders' theater plans, and core mission tasks; and provide USSOCOM mission planners a critical tool to positively effect the outcome of SOF missions worldwide. Specifically, SOJICC is designed to access data from both open source and classified holdings, develop an extensive database, and provide in-depth analysis to support SOF operational missions as directed by the Commander, SOCOM. Continued investigation, exploitation and integration of new technology advances in data mining, knowledge discovery, knowledge based management and data visualization will provide SOF planners information dominance as well as strengthen SOF's ability to support timely response to critical intelligence requirements. Commercial sector and DOD research activities have made remarkable strides toward integrating existing translation algorithms, neural network pattern recognition programs, and visualization techniques that dramatically enhance intelligence analysis and Information Operations.
- **Counter-Proliferation Analysis and Planning System (CAPS).** USSOCOM has a planning mission for counter-proliferation (CP) contingency operations. CAPS is a primary source of CP mission planning information for Combatant Commanders. It provides tools to SOF mission planners to aid identification and analysis of potential Weapons of Mass Destruction (WMD) and military targets; assess the associated effectiveness, costs and risks of various CP options and their collateral effects; and develop alternative plans. In order to provide the best possible engineering analysis and support, the CAPS system requires ongoing development, integration and testing of "leading edge technology" for operational planning, and process and consequence engineering tools. Market investigation, development and integration of new technologies to obtain engineering and signatures analysis for WMD programs and military targeting are essential to SOF's ability to best exploit CAPS capabilities and support CP contingency mission planning.
- **Special Operations Command Research Analysis & Threat Evaluation System (SOCRATES).** SOCRATES provides a wide range of mission-directed automated intelligence and imagery support to HQ USSOCOM, its component commands, and forward based SOF units, both in-garrison and deployed. SOCRATES also includes the Joint Special Operations Command Special Operations Intelligence System. SOCRATES is an umbrella client-server based architecture which allows single workstation access to the data bases and provides secure, on-line services to remote sites via SCAMPI (a secure communications distribution system), Secret Internet Protocol Routed Network, and the Joint Worldwide Intelligence Communications System. Through connectivity with local, theater and national intelligence assets and databases, SOCRATES provides tailored, near real-time support to SOF analysts. SOCRATES capabilities include data processing, video

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Intelligence/Project S400	

mapping, news and message traffic, soft copy imagery processing, and secondary imagery dissemination. The program is an evolutionary acquisition program to ensure SOF intelligence interoperability and connectivity worldwide.

**B. Accomplishments/Planned Program**

	FY02	FY03	FY04	FY05
Multi Mission Advanced Tactical Terminal		.950		
RDT&E Articles Quantity				
FY03 This initiative was a Congressional Plus-Up. Funds will be used to develop a common software baseline for SOF system's requiring and Embedded Integrated Broadcast System (IBS) Receiver (EIR capability).				
	FY02	FY03	FY04	FY05
National Systems Support to SOF (NSSS)	1.539	1.396	1.336	1.341
RDT&E Articles Quantity				
FY02 Developed, influenced, and leveraged space intelligence, surveillance and reconnaissance technology developments for SOF utility from the National Community and Military Services. Leveraged technology from NSSS parts. Participated in multiple reconnaissance/technology community programs such as the Defense Space Reconnaissance Program and the Military Exploitation Reconnaissance and Intelligence Technology program. Developed and fielded Blue Force Tracking hand-held equipment in response to SOF urgent combat mission need requirements.				
FY03 Continue to leverage and develop space intelligence, surveillance, reconnaissance technology developments with SOF utility from the National Community and Military Services. Continue to participate in reconnaissance/technology community programs to influence technology developments for SOF use.				
FY04 Continue to leverage space intelligence, surveillance, and reconnaissance technology developments with SOF utility from the National Community and Military Services. NSSS will assess the operational utility of leveraged and developed technology.				
	FY02	FY03	FY04	FY05
Joint Threat Warning System (JTWS)	5.490	1.236	4.434	3.024
RDT&E Articles Quantity				
FY02 This initiative was a Congressional Plus-up. Funds were used to integrate and migrate existing commercial available technology, low probability of intercept voice/non-voice threats and direction finding capabilities into the maritime legacy platform (PRIVATEER). Additionally				

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003		
Appropriation/Budget Activity RDT&E BA # 7		Special Operations Intelligence/Project S400		

these funds initiated the JTWS Ground SIGINT Kit and continued team transportable development. FY03 Complete Ground Signal Intelligence (SIGINT) kit development. FY04 Complete Ground SIGINT kit development and initiate the air variant development.				
	FY02	FY03	FY04	FY05
Solid State Synthetic Aperture Radar	2.920			
RDT&E Articles Quantity				
FY02 This initiative was a Congressional plus-up. Funds were used to demonstrate technologies to improve identification of targets in high sea states and high ground clutter environments.				
	FY02	FY03	FY04	FY05
Remote Miniature Weather System			.492	
RDT&E Articles Quantity				
FY04 Integrate an alternative communications link and eye-safe laser into existing RMWS components.				
	FY02	FY03	FY04	FY05
Optimal Placement of Unattended Sensors		.950		
RDT&E Articles Quantity				
FY03 This initiative was a Congressional plus-up. Funds will be used to develop and demonstrate commercial technology used to identify the optimal placement of unattended sensors.				
	FY02	FY03	FY04	FY05
Special Operations Tactical Video System			.020	.020
RDT&E Articles Quantity				
FY04 Conduct future system evaluation of digital imagery to SOF tactical communication systems in support of surveillance and reconnaissance missions.				
	FY02	FY03	FY04	FY05

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003			
Appropriation/Budget Activity RDT&E BA # 7		Special Operations Intelligence/Project S400			
Defense Emergency Response Fund Plan	3.085				
RDT&E Articles Quantity					
FY02 Special Operations Joint Interagency Collaboration Center (SOJICC). Developed, integrated and tested different commercial off-the-shelf hardware and software applications to achieve data compatibility for data mining and retrieval, link and nodal analysis, and data visualization.					
	FY02	FY03	FY04	FY05	
SOJICC		.116	2.477	2.469	
RDT&E Articles Quantity					
FY03 Continue systems engineering and program management efforts to achieve data compatibility by integrating different commercial off-the-shelf hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization. FY04 Continue systems engineering and program management efforts to achieve data compatibility by integrating different commercial off-the-shelf hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization.					
	FY02	FY03	FY04	FY05	
Counter-Proliferation Analysis and Planning (CAPS)	4.964		6.000	6.864	
RDT&E Articles Quantity					
FY02 This initiative was a Congressional Plus-up. Funds developed SOF unique capabilities of Air Force Counter-Proliferation Analysis and Planning (CAPS) program: integration of SOF unique capabilities for CAPS sensor integration, information operations, mission analysis, collaboration, hypertext markup language CAPS integration, and sensor placement and optimization. FY04 Continues integration of SOF unique capabilities for CAPS sensor integration, information operations, mission analysis, collaboration, hypertext markup language CAPS integration, and sensor placement and optimization.					
	FY02	FY03	FY04	FY05	
Special Operations Command Research Analysis & Threat Evaluation System (SOCRATES)			1.967	1.961	
RDT&E Articles Quantity					
FY04 Initiate efforts to develop a Multi-Level Security guard that provides the capability to automatically pass imagery and data classified SECRET and below from a TOP SECRET system to a SECRET system without manual intervention.					

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Intelligence/Project S400	

C. Other Program Funding Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, SOF Intelligence Systems	26.332	13.332	16.522	16.740	18.964	20.980	16.212	17.685	Cont.	Cont.

D. Acquisition Strategy:

- Multi Mission Advanced Tactical Terminal is an evolutionary acquisition program that will insert proven embedded Integrated Broadcast System (IBS) receiver technologies into SOF systems/platforms requiring IBS data for a common hardware and software solution. National Systems Support to SOF (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.
- Joint Threat Warning System (JTWS) is an evolutionary acquisition program that consolidated fielded systems to include: PRIVATEER, SILENT SHIELD and Improved SOF Signal Intelligence Manpack System. As an evolutionary acquisition program, JTWS will continue to introduce systems improvements via evolutionary technology insertions tailored to satisfy specific platform requirements.
- Solid State Synthetic Aperture Radar will be fully developed from commercial off-the-shelf items already certified for military applications. However, the delivered product is envisioned to be a “brass-board” system. The system should be mature enough to enter the acquisition system at Milestone “C” with only specific packaging considerations remaining.
- Remote Miniature Weather Station will integrate an eye-safe laser as a key component of the existing ceilometer system.
- Optimal Placement of Unattended Sensors (OPUS). Systems Readiness Center will leverage existing OPUS commercial-off-the-shelf technology to provide a capability to plan, coordinate and identify the optimal placement of unattended sensors.
- Special Operations Tactical Video System program will conduct future system evaluation of digital imagery to SOF tactical communication

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 7	Special Operations Intelligence/Project S400	

systems in support of surveillance and reconnaissance missions for candidates of capital equipment replacement.

- Special Operations Joint Interagency Collaboration Center integrates commercial off-the-shelf hardware and software applications to provide a capability to plan, coordinate, and integrate Joint Information Operations in support of CONOPS supporting Secretary of Defense tasking, regional combatant commanders' theater plans and core mission tasks and provides USSOCOM mission planners a critical tool to positively effect the outcome of SOF missions worldwide.

UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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 FY03	Date FY03	Cost FY04	Date FY04	Cost FY05	Date FY05	To Complete	Total Program
Primary Hardware Dev	MIPR	SPAWAR, Charleston, SC	8.085	1.236	Feb-03	0.749	Dec-03	2.010	Dec-04	Cont.	Cont.
	MIPR	TBD		2.579	Feb-03	1.131	Dec-03	0.630	Dec-04	Cont.	Cont.
Ancillary Hardware Dev											
Systems Engineering	Various	Various	1.228	0.116	Jan-03	2.477	Dec-03	2.469	Dec-04	Cont.	Cont.
	MIPR	SPAWAR, Charleston, SC	0.350			3.098	Dec-03	0.574	Dec-04	Cont.	Cont.
	MIPR	Lawrence Livermore National Labs	4.964			6.000	Dec-03	6.864	Dec-04	Cont.	Cont.
Materiel/Equipment											
Subtotal Product Dev			14.627	3.931		13.455		12.547		Cont.	Cont.
Remarks:											
DERF Funds:											
Primary Hardware Development	Various	Various		1.548							1.548
Development Spt											
Software Dev/Integ	MIPR	BTG, Inc., Fairfax, VA	1.255	0.029	May-03	0.055	Apr-04	0.056	Apr-05	Cont.	Cont.
	MIPR	TBD					1.967	Jan-04	1.961		
Software Spt											
Training Development											
Integrated Logistics Spt											
Configuration Management											
Subtotal Spt			1.255	0.029		2.022		2.017			Cont.
Remarks:											
DERF Funds:											
Software Dev/Tng	Various	Various		1.585							1.585
Training Development	FFP/C	EMC Corp, MacLean, VA		0.038							0.038



UNCLASSIFIED

Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2003					
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		Total
(Tailor to WBS, or System/Item Requirements)	Method & Type	Performing Activity & Location	PYs Cost	Cost FY03	Date FY03	Cost FY04	Date FY04	Cost FY05	Date FY05	To Complete	Program
Developmental Test & Eval	MIPR	SPAWAR, Charleston, SC	0.630			0.061	Dec-03				0.691
OT&E	MIPR	SPAWAR, Charleston, SC	1.737			0.526	Dec-03	0.440	Dec-04	Cont.	Cont.
	MIPR	DESA, Kirtland, NM	0.217			0.020	Dec-03	0.020	Dec-04	Cont.	Cont.
Subtotal T&E			2.584			0.607		0.460			Cont.
Remarks:											
Government Engineering Spt	CPAF	SPAWAR, Charleston, SC	0.116	0.220	Apr-03	0.028	Dec-03	0.029	Dec-04	Cont.	Cont.
Program Management Spt		TBD			0.441	Oct-02	0.553	Oct-03	0.564	Oct-04	Cont.
Travel	N/A	USSOCOM, MacDill AFB, FL	0.136	0.027	Various	0.061	Various	0.062	Various	Cont.	Cont.
Subtotal Management			0.252	0.688		0.642		0.655		Cont.	Cont.
Remarks:											
Total DERF			3.171								3.171
Total Cost			18.718	4.648		16.726		15.679		Cont.	Cont.

UNCLASSIFIED

Exhibit R-4, Schedule Profile											Date: FEBRUARY 2003																									
Appropriation/Budget Activity					Program Element Number and Name											Project Number and Name																				
RDT&E/7					PE1160405BB/Special Operations Tactical System Development											Project S400/SO Intelligence																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	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 IBS Development								△	—	△																										
NSSS Participation in Adv Concepts Tech Demonstrations	▲	—	—	▲	▲	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△				
JTWS Ground - Team Transportable Development		▲	—	▲	▲	—	—	△																												
JTWS Ground - SIGINT Kit Development		▲	—	▲					△	—	—	△																								
JTWS Air Variant Development									△	—	—	△	△	—	—	△																				
JTWS Evolutionary Technology Insertions		▲	—	▲													△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△				
SSSAR Demonstation			▲	▲																																
RMWS Integration									△	—	—	△																								
OPUS Concept Development					▲	—	—	△																												
SOTVS Future System Evaluation									△	—	△					△	—	△					△	—	△					△	—	△				
SOJICC Integration and Tset					▲	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△				
CAPS Integration			▲	▲					△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△	△	—	—	△				
SOCRATES Multi-Level Security									△	—	—	△	△	—	—	△	△	—	—	△																



UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2003					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 2			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB Special Operations Forces (SOF) Medical Technology Development							

COST (Dollars in Millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Cost to Complete	Total Cost
PE1160407BB	4.883	3.339	1.961	2.167	2.177	2.216	2.299	2.367	Cont.	Cont.
S275, SOF MEDICAL TECHNOLOGY	4.883	3.339	1.961	2.167	2.177	2.216	2.299	2.367	Cont.	Cont.

**Note: In FY 2002 and 2003 this program element was budgeted for in Budget Activity 7. Beginning in FY 2004, this program element has been moved into Budget Activity 2.**

A. Mission Description and Budget Item Justification:

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

B. Program Change Summary:

	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>
Previous President's Budget	4.017	1.962	1.994	2.232
Current BES/President's Budget	4.883	3.339	1.961	2.167
Total Adjustments	0.866	1.377	-0.033	-0.065
Congressional Rescissions		-0.085		
Congressional Increases		1.550		
Reprogrammings	0.992			
SBIR/STTR Transfer	-0.126	-0.088		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2003
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>FY02</p> <ul style="list-style-type: none"> <li>- Reflects a \$1.000 million adjustment for a congressionally added program that is more appropriately executed in a different Program Elements (PE):</li> <li>- Rebreather from PE 1160404BB (\$1.000).</li> </ul> <p>FY03</p> <ul style="list-style-type: none"> <li>- Reflects \$1.550 million for Congressionally added programs as follows:</li> <li>- Rebreather (\$1.300)</li> <li>- Special Operations Medical Diagnostic Tool (\$0.250).</li> </ul> <p>FY04 and FY05</p> <ul style="list-style-type: none"> <li>- Revised Economic Assumptions.</li> </ul> <p>Schedule: None.</p> <p>Technical: None.</p>	

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2	SOF Medical Technology/Project S275	

Cost (\$ in millions)	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
SOF Medical Technology	4.883	3.339	1.961	2.167	2.177	2.216	2.299	2.367
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; and (3) develop CD-ROM and internet compatible automated programs to support SOF medical personnel information needs while operating in austere locations and medical interviews in multiple foreign languages.
- Decompression procedures for SOF diving operations will: (1) decrease the decompression obligation in SOF diving operations through the use of surface-interval oxygen breathing; and (2) investigate pre-oxygenation requirements for high-altitude SOF parachute operations.
- Exercise-related injuries will evaluate the effectiveness of applying sports medicine diagnostic, therapeutic and rehabilitative techniques in management of the traumatic and overuse injuries commonly encountered among SOF.
- Inhaled gas toxicology will evaluate the feasibility of using pharmacologic intervention to reduce or eliminate the possibility of central nervous system toxicity.

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA #2	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; and (2) develop a system for constantly upgrading the medical expertise of SOF medical personnel by incorporating new research reports and clinical information into a CD-ROM based computer system which can be used by medical personnel in isolated duty circumstances.
- Thermal protection will evaluate the efficacy of current thermal protective measures in maintaining combat swimmer performance.
- Mission-related physiology will: (1) develop accurate measures to evaluate SOF mission-related performance; (2) delineate nutritional strategies designed to help personnel apply known nutritional concepts to optimize performance in mission and training scenarios; (3) evaluate potential ergogenic agents as they apply to enhancing mission-related performance; (4) study the safety and efficacy of various substances to increase performance in sustained operations; (5) develop a quantitative test for night vision suitable for screening SOF candidates and study ways to enhance unaided night vision; and (6) study pharmacologic measures to prevent acute mountain sickness in high altitude SOF operations.

**B. Accomplishments/Planned Program**

	FY02	FY03	FY04	FY05
Ongoing Studies	.721	.741	.748	.918
RDT&E Articles Quantity				

FY02 Completed ongoing studies as follows: SOF Medical Skills Utilization, Protective Barrier Substances for Coelenterate Envenomation and Extended Pulmonary O<sub>2</sub> Limits. Continued ongoing studies as follows: Impact of Breathing Gas Mixtures on Decompression Sickness (DCS) in CV-22, Laser-Assisted In-Situ Keratomileusis (LASIK) in Special Operations Basic Underwater Demolition School (BUD/S), Advanced SEAL Delivery System (ASDS)/Underwater Breathing Apparatus (UBA), Bronchoalveolar Lavage in Swimming Induced Pulmonary Edema (SIPE), and Cardiopulmonary Function in SIPE.

FY03 Complete ongoing studies as follows: Impact of Breathing Gas Mixtures on DCS in CV-22, LASIK in Special Operations BUD/S, SOF Committee on Tactical Combat Casualty Care, Combat Casualty After-Action Review, ASDS/UBA, SOF Mission Related Performance Measures Upgrade, Decompression Computer Diving Surveillance and Configuration Management Program, and Antibiotic Prophylaxis, and Operational Medicine CD-ROM upgrade. Continue ongoing studies as follows: Treatment Standards for DCS/Arterial Gas Embolism (AGE), Bronchoalveolar Lavage in SIPE, Cardiopulmonary Function in SIPE, and Polymer Splint.

FY04 Complete ongoing studies as follows: Treatment Standards for DCS/AGE, Bronchoalveolar Lavage in SIPE, Cardiopulmonary Function in

<b>Exhibit R-2a, RDT&amp;E Project Justification</b>		Date: FEBRUARY 2003
Appropriation/Budget Activity RDT&E BA # 2	SOF Medical Technology/Project S275	

<p>SIPE and Effects of Low-Grade Hypoxia at Night in SOF Aircraft Operations. Continue ongoing studies as follows: Mechanisms of Injury in Refractory DCS/AGE, Stress Fractures in BUD/S Training, Computer-Assisted Thermal Protection Training in SOF, and Polymer Splint, Development of Algorithms for Remote Triage, Evaluation of Nasal Ketamine for Pain Control, and Effects of Post-Stress Carbohydrate Administration on Recovery.</p>				
	FY02	FY03	FY04	FY05
New Studies	1.145	1.124	1.213	1.249
RDT&E Articles Quantity				
<p>FY02 Initiated new studies as follows: Caprine Analgesia, Operational Medicine CD-ROM Upgrade, Improving SOF Mission Performance/Mission Commander Training Package, One-handed tourniquet, SOF Committee on Tactical Combat Casualty Care, Combat Casualty Care After-Action Review, Polymer Splint, Treatment Standards for DCS/AGE, SOF Mission Related Performance Measures Upgrade, Antibiotic Prophylaxis, and Decompression Computer Diving Surveillance and Configuration Management Program. Completed new studies as follows: Caprine Analgesia, Improving SOF Mission Performance/Mission Commander Training Package, and One-handed tourniquet.</p> <p>FY03 Initiate new studies as follows: Mechanisms of Injury in Refractory DCS and AGE, Development of Algorithms for Remote Triage, Stress Fractures in BUD/S Training, Computer-Assisted Thermal Protection Training in SOF, Maximum Breath-hold Diving Duration, Full Face Purging Procedures for the MK25 UBA, Effects of Low Grade Hypoxia at Night in SOF Aircraft Operations, Evaluation of Nasal Ketamine for Pain Control, Effects of Post-Stress Carbohydrate Administration on Recovery, and Graduate Research. Complete new studies as follows: Maximum Breath-hold Diving Duration, Full Face Purging Procedures for the MK25 UBA, and Graduate Research.</p> <p>FY04 Initiate new studies as follows: Hypobaric Medicine, Performance Enhancements, Chemical/Biological Markers, Medical Research and Development Enhancements for Non-Medical Systems, Remote Telemetry Patient Monitoring/Casualty Assessment, Rapid Diagnostic Systems, Casualty Retrieval Devices, Advanced Combat Casualty Care Procedures, Blunt Trauma Injuries, Comparison of Wavefront-Guided Photo-Refractive Keratectomy (PRK) and LASIK/LASER Epithelial Keratomileusis (LASEK), Model Development for Missile Wound in Swine Latissimus, and Interactive SOF Medical Distant Learning.</p>				



Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2003			
Appropriation/Budget Activity RDT&E BA # 2		SOF Medical Technology/Project S275			
	FY02	FY03	FY04	FY05	
Rebreather	.973	1.235			
RDT&E Articles Quantity					
<p>FY02 This initiative was a Congressional Plus-Up. Funds were used to develop a closed circuit UBA control unit, and novel oxygen and carbon dioxide sensors based on new technologies.</p> <p>FY03 This initiative was a Congressional Plus-Up. Funds will be used to continue development of a closed circuit UBA control unit, and novel oxygen and carbon dioxide sensors based on new technologies.</p>					
	FY02	FY03	FY04	FY05	
Air Force Medical	2.044				
RDT&E Articles Quantity					
<p>FY02 This initiative was a Congressional Plus-Up transferring funds from Air Force Program Element 040411F. Funds were used for the following projects: Special Tactics Teams (STT) Musculoskeletal Injury Reduction Study, Operational Medicine Training CD-ROM on Laser Exposure, Emergency Evacuation Hyperbaric Stretcher, Identification of Biomarkers of Laser Injury to the Retina, Laser Eye Protection for STT, Effects on Modafinil on Warfighter Cognitive Performance during Escape and Evasion, and Combat Oxygen System Development.</p>					
	FY02	FY03	FY04	FY05	
SO Medical Diagnostic System		.239			
RDT&E Articles Quantity					
<p>FY03 This initiative was a Congressional Plus-Up. Funds will initiate a program of Knowledge Based Rules to assist in providing SOF medics with an automated diagnostic decision tree. Complete integration of diagnostics will include Gastrointestinal, Respiratory, Dermatology and Musculoskeletal/Sports Medicine algorithms, and incorporation into a hand-held device.</p>					
<p>C. Other Program Funding Summary. None.</p> <p>D. Acquisition Strategy. None.</p>					