

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE FEBRUARY 2000			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE PE1160404BB Spec Operations Tactical Systems Development							
COST (Dollars in Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
PE1160404BB	128.931	147.438	133.520	146.089	131.397	70.627	84.602	Cont.	Cont.
3284 SOF AIRCRAFT DEFENSIVE SYSTEM	4.590	11.622	18.953	12.714	7.080	2.935	4.114	Cont.	Cont.
3326 AC-130U GUNSHIP	1.079	1.289	1.305	2.209	2.206	2.071	2.065	Cont.	Cont.
D476 PSYOPS ADV DEV	.261	.839	.316		.300	.305	1.732	Cont.	Cont.
D615 SOF AVIATION	9.292	7.219	13.413	4.000	17.442	2.697	.775	Cont.	Cont.
S0417 UNDERWATER SYSTEMS ADV DEV	68.944	43.314	10.390	9.265	10.602	4.380	5.040	Cont.	Cont.
S1684 SOF SURFACE CRAFT ADVANCE SYSTEMS	.196	4.654	1.826	3.466	1.066	.580	1.486	Cont.	Cont.
S350 SOFPARS	4.024	3.147	3.352	3.103	2.853	2.665	3.615	Cont.	Cont.
S375 WEAPONS SYSTEMS ADV DEV	.951	.862	.879	.570	3.468	4.644	.822	Cont.	Cont.
S500B SOF OPERATIONAL ENHANCEMENTS	5.965	8.095						Cont.	Cont.
S625 SOF TRAINING SYSTEMS	22.798	9.190	8.731	19.110	1.892	1.878		Cont.	Cont.
S700 SO COMMUNICATIONS ADV DEV	2.118	2.662	3.571	3.849	2.742	3.027	3.040	Cont.	Cont.
S800 SO MUNITIONS ADV DEV	4.348	4.712	11.849	.810	.824	1.283	4.543	Cont.	Cont.
S900 SO MISCELLANEOUS EQUIPMENT ADV DEV		.282	.498	.531				Cont.	Cont.
SF100 AVIATION SYSTEMS ADV DEV	4.365	17.372	17.976	47.198	46.598	33.865	37.773	Cont.	Cont.
SF200 CV-22		32.179	40.461	39.264	34.324	10.297	19.597	Cont.	Cont.

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

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<p>sophisticated threat mandates that SOF systems remain technologically superior to threat forces to ensure mission success.</p> <p>Change Summary Explanation:</p> <p>Funding FY 2000:</p> <p>Increase is a net result of additional funds appropriated by Congress for CV-22 (\$9.0M), Advanced Sea, Air, Land (SEAL) Delivery System (ASDS) (\$26.1M) and Small Craft Propulsion (\$2.5M), as well as reductions for project cost share of the Small Business Innovative Research program, Congressionally-mandated rescission of \$873K, and revised Administration inflation assumptions.</p> <p>Funding FY 2001:</p> <p>All projects were reduced by their cost share of revised Administration inflation assumptions. In addition, the following increases/decreases occurred.</p> <p>Project 3284: Increase of \$8.6M reflects a restructure of the C-130 Engine Infrared Suppression program.</p> <p>Project D476: Decrease of \$0.8M based on better definition of program requirements for Leaflet Delivery System Variant I.</p> <p>Project D615: Increase of \$2.7M is a net result of continued prototype testing of the Mission Enhancement Little Bird aircraft and technical risk associated with modifications of modular avionics on SOF Rotary Wing platforms.</p> <p>Project S0417: Increase of \$0.9M is a net result of an increase to reduce vulnerability characteristics of the ASDS (e.g., noise reduction).</p> <p>Project S1684: Decrease of \$5.8M reflects a restructuring of the Special Operations Craft-Riverine and Naval Special Warfare Rigid Inflatable Boat programs.</p> <p>Project S625: Decrease of \$0.8M reflects USSOCOM realignment of resources to support higher command priorities.</p>	

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<p>Project S700: Increase of \$1.3M reflects initiation of the Mission Planning, Analysis, Rehearsal and Execution program.</p> <p>Project S800: Decrease of \$0.6M reflects USSOCOM realignment of resources to support higher command priorities.</p> <p>Project SF100: Decrease of \$6.5M reflects realignment of resources due to technical risk associated with CV22, ASDS, and Avionics/Navigation Modifications.</p> <p>Project SF200: Increase of \$1.6M reflects realignment of resources due to associated technical risk.</p> <p>Schedule:</p> <p>Project 3284: C-130 Engine Infrared Suppression program was restructured; developmental testing/initial operational testing and evaluation is now scheduled for FY 2001.</p> <p>Project S0417: First ASDS vehicle will be delivered FY 2000. Milestone III for Non-Gasoline Burning Outboard Engine is scheduled for 3QTR00.</p> <p>Technical: None.</p>			
<p>B. Program Change Summary</p> <p>Previous President's Budget</p> <p>Appropriated Value</p> <p>Adjustments to Appropriated Value / President's Budget</p> <p>Current Budget Submit</p>	<p>FY 1999</p> <p>121.845</p> <p>107.738</p> <p>21.193</p> <p>128.931</p>	<p>FY 2000</p> <p>106.671</p> <p>150.270</p> <p>(2.832)</p> <p>147.438</p>	<p>FY 2001</p> <p>132.752</p> <p></p> <p>.768</p> <p>133.520</p>

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284								
COST (Dollars in Millions)			FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
3284, SOF Aircraft Defensive Systems			4.590	11.622	18.953	12.714	7.080	2.935	4.114	Cont.	Cont.

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 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 (RF) jammer improvements, and development of AC-130 engine infrared (IR) suppression system and IR jamming system. Project also provides systems for SOF-unique portions of the Warner Robins-Air Logistics Center Electronic Warfare Avionics Integrated Systems Facility. Sub-projects include:

- ALQ-172 Electronic Countermeasures/Engineering Change Proposal (ECP)-93 (AC-130H/U, MC-130E/H): Modification of the ALQ-172 RF jammer which improves capability by adding low band jamming coverage for eight AC-130H aircraft. In addition, program funds ECP-93 which provides for flightline reprogramming capability, and increases memory and growth for continuous wave countermeasures for AC-130H/U and MC-130E/H aircraft.
- C-130 Engine IR Suppression (AC-130H/U, MC-130E/H, HC-130P/N, EC-130E): Program to develop and install an engine IR signature suppression system on all AFSOC C-130 aircraft. The system will reduce the IR signature of these aircraft, thereby reducing their susceptibility to generation I and II IR missile threats.

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<ul style="list-style-type: none"> • APR-46 Radar Warning Modification. Program funds for an Analysis of Alternatives to determine the optimal solution for current APR-46 deficiencies. • Directional Infrared Countermeasures (DIRCM). A joint international cooperative United Kingdom (UK)/United States (US) project to develop an infrared (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. • 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. <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> • (0.262) ALQ-172 Electronic Countermeasures. Continued test and program management support of the ALQ-172 low band jammer. (1QTR99-4QTR99) • (3.128) DIRCM. Continued DIRCM development. Completed flight and live fire testing. Continued to support a cooperative UK/US development/production program for 59 SOF C-130 aircraft. Achieved Milestone III in 4QTR99. (1QTR99-4QTR99) • (1.200) EWAISF. Integrated AAR-44 software support station components into EWAISF. (2QTR99) 		

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<p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (5.833) C-130 Engine Infrared (IR) Suppression. Award engineering and manufacturing development (EMD) contract. Fabricate production representative flight test suppression system. (1QTR00-4QTR00) • (4.047) Directional Infrared Countermeasures (DIRCM). Continue to support a cooperative UK/US development production program for 59 SOC C-130 aircraft. Continue to fund non-recurring engineering costs for development of a laser upgrade insert for the DIRCM for MC-130H Combat Talon II and AC-130U Gunship models. (1QTR00-4QTR00) • (1.742) Electronic Warfare Avionics Integrated Systems Facility (EWAISF). Support Multi-mission Advanced Tactical Terminal (MATT) laboratory efforts to include update of the Integrated Electronic Warfare Support Station (IEWS) and support IEWS/MATT correlation effort and modify Electro-optical/Infrared scene database for existing scene generator. (2QTR00) <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> • (9.648) C-130 Engine IR Suppression. Conduct Developmental Testing /Initial Operational Test & Evaluation, complete EMD, support the flight test program, and prepare for Milestone III. (1QTR01-4QTR01) • (7.791) DIRCM. Continue to support a cooperative UK/US development production program for 59 SOC C-130 aircraft. Continue to fund non-recurring engineering costs for development of a laser upgrade insert for the DIRCM for MC-130H Combat Talon II and AC-130U Gunship models. Begin Operational Test & Evaluation for MC-130E/H Combat Talon II and AC-130H/U Gunship models. (1QTR01-4QTR01) • (1.514) EWAISF. Continue to support laboratory efforts to include update of the DIRCM evaluation tool for the IEWS. (2QTR01) 		

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B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>To Complete</u>	<u>Total Cost</u>
PROC, C130 Mods									
ALQ-172 Low Band Jammer	21.901	7.774						Cont.	Cont.
C130 Infrared (IR) Suppression				14.841	14.875			Cont.	Cont.
Directional Infrared Countermeasures (DIRCM)	7.700	66.486			23.144	22.134	8.645	Cont.	Cont.

C. Acquisition Strategy:

- C-130 Engine IR Suppression. Produce request for proposals and competitively select up to two contractors to enter engineering and manufacturing development. Downselect to one contractor after flight testing production representative suppression systems (post critical design review). This program is a continuing effort, based upon lessons learned, of a previous suppression program. A market survey was done (to minimize risk) which proved the maturity of the technology that is available in the industry today.
- DIRCM. The memorandum of agreement between the UK/US established the cooperative international DIRCM program. The UK Ministry of Defense is the lead for the program. UK law applies to all acquisition actions. USSOCOM program manager is the US Deputy to the UK DIRCM program manager.
- 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.

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					<u>FY99</u>		<u>FY00</u>				<u>FY01</u>					
<u>D. Schedule Profile</u>					1	2	3	4	1	2	3	4	1	2	3	4
C-130 Engine Infrared Suppression																
EMD Contract Award											x					
Developmental Testing/Initial Operational Testing & Evaluation																x
Directional Infrared Countermeasures																
Production Decision (MS III)								x								
AC-130H/U and MC-130E/H Operational Test and Evaluation													x	x	x	
Electronic Warfare Avionics Integrated Systems Facility																
Contract award for EO/IR Scene DEV										x						
Contract award for IEWS/MATT Correlation										x						
Laboratory Testing and Evaluation													x	x	x	x

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT 3284							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Primary Hardware Dev											
Directional Infrared Countermeasures (DIRCM)	SS/FFP	Northrop (Chicago)	76.813	0.694	JUL 99	1.533	JUN 00	1.000	OCT 00	Cont.	Cont.
Sust Engineering DIRCM	SS/CPFF	Northrop (Chicago)				0.490	APR 00			Cont.	Cont.
Infrared Suppression System	TBD	TBD				5.657	MAY 00	8.091	OCT 00	Cont.	Cont.
LASER	TBD	Northrop (Chicago)				1.000	JUN 00	5.800	OCT 00	Cont.	Cont.
AAR-44	SS/CPIF	Cinn. Electronics, OH	12.363								Cont.
Electronics Warfare Avionics Integrated Systems Facility	SS/TBD	GTRI, GA	6.760	1.200	FEB 99	1.742	MAR 00	1.514	MAR 01	Cont.	Cont.
Subtotal Product Dev			95.936	1.894		10.422		16.405		Cont.	Cont.
Remarks:											
Dev Spt											
Software Spt											
Training Dev											
Integrated Logistics Spt											
Configuration Management											
Technical Data											
GFE											
Subtotal Spt											
Remarks:											

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APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT 3284							
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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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Devel Test & Eval	MIPR	WSMR/46TW/Other (DIRCM)	11.057	1.990	JUN 99					Cont.	Cont.
	MIPR	46TW/Other (EIRS)						1.488	MAR 01	Cont.	Cont.
Subtotal T&E			11.057	1.990				1.488		Cont.	Cont.
Remarks:											
Contractor Engineering Spt	FP	BAH (DIRCM/EIRS) LASER	15.405			1.100	OCT 99	1.060	OCT 00	Cont.	Cont.
	SS/FFP	MTI; Warner Robins, Ga	4.820							Cont.	Cont.
Government Engineering Spt	SS/CPFF	SSAI; Warner Robins, Ga	2.969	0.203	JUL 99					Cont.	Cont.
	MIPR	Crane DIV/other		0.184	OCT 98					Cont.	Cont.
Travel	N/A		1.000	0.319	N/A	0.100	N/A			Cont.	Cont.
Subtotal Management			24.194	0.706		1.200		1.060		Cont.	Cont.
Remarks:											
Total Cost			131.187	4.590		11.622		18.953		Cont.	Cont.
Remarks:											

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COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
3326, AC-130U		1.079	1.289	1.305	2.209	2.206	2.071	2.065	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project provides 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 will be more capable and survivable than the existing 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 Special Operations Command aircraft. AC-130U software is developed and sustained using a systems integration laboratory.</p> <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> • (0.338) Developed prototypes and risk reduction efforts for control and display subsystem improvements. (1QTR99) • (0.429) Continued reliability and maintainability technical studies and analyses. Continued control and display analyses. (1QTR99) • (0.008) Continued mission support (system safety support). (4QTR99) • (0.120) Continued effort on technical order verification/validation and printing. (3QTR99) • (0.184) Continued annual software flight test operations and support. (4QTR99) 										

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<p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (0.406) Begin rehosting the system integration laboratory assets to new Ada software compiler. (1QTR00) • (0.425) Begin cooperative effort with AF laboratory to analyze and demonstrate related emerging technologies. (1QTR00) • (0.044) Continue development of depot level support equipment. (1QTR00) • (0.216) Continue technical order verification/validation and printing. (3QTR00) • (0.198) Continue annual software flight test operations and support. (3QTR00-4QTR00) <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> • (0.666) Complete system integration laboratory rehost effort. (1QTR01) • (0.050) Continue cooperative effort with AF laboratory to analyze and demonstrate gunship related emerging technologies. (1QTR01) • (0.218) Continue technical order verification/validation. (3QTR01) • (0.371) Continue annual software flight test operations and support. (3QTR01-4QTR01) 		

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<p>B. <u>Other Program Funding Summary</u></p> <table border="1"> <thead> <tr> <th></th> <th><u>FY99</u></th> <th><u>FY00</u></th> <th><u>FY01</u></th> <th><u>FY02</u></th> <th><u>FY03</u></th> <th><u>FY04</u></th> <th><u>FY05</u></th> <th>To <u>Complete</u></th> <th>Total <u>Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, AC-130U</td> <td>23.031</td> <td>26.602</td> <td>13.871</td> <td>12.063</td> <td>8.750</td> <td>6.770</td> <td>5.758</td> <td>Cont.</td> <td>Cont.</td> </tr> </tbody> </table>															<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>	PROC, AC-130U	23.031	26.602	13.871	12.063	8.750	6.770	5.758	Cont.	Cont.																																																																							
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<p>C. <u>Acquisition Strategy:</u></p> <ul style="list-style-type: none"> Modify C-130H airframe into a side-firing configuration on a sole-source fixed price incentive fee development contract. Conduct a combined qualification test and evaluation/qualification operational test and evaluation (QOT&E), and a dedicated QOT&E. The AC-130U is logistically supported at organizational, intermediate and depot levels via interim contractor support until organic support is established. Initial operational capability occurred in March 1996, and full operational capability is scheduled for FY 2001. 																																																																																																								
<p>D. <u>Schedule Profile</u></p> <table border="1"> <thead> <tr> <th></th> <th colspan="4"><u>FY99</u></th> <th colspan="4"><u>FY00</u></th> <th colspan="4"><u>FY01</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Initial Operational Capability: Mar 1996</td> <td></td> </tr> <tr> <td>Final Aircraft Delivery: Mar 1997</td> <td></td> </tr> <tr> <td>System Integration</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>x</td> <td>x</td> <td>x</td> </tr> <tr> <td>SoftwareTest and Evaluation</td> <td></td> <td>x</td> <td>x</td> </tr> <tr> <td>Full Operational Capability</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>x</td> <td></td> <td></td> </tr> </tbody> </table>															<u>FY99</u>				<u>FY00</u>				<u>FY01</u>					1	2	3	4	1	2	3	4	1	2	3	4	Initial Operational Capability: Mar 1996													Final Aircraft Delivery: Mar 1997													System Integration										x	x	x	SoftwareTest and Evaluation											x	x	Full Operational Capability										x		
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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT 3326							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Product Dev											
Software	C/CPIF	Boeing, Ft Walton Beach, FL	Note 1			0.406	NOV 99	0.666	NOV 00	Cont.	Cont.
Studies & Analysis	C/CPAF	Boeing, Ft Walton Beach, FL	Note 1	0.429	NOV 98						0.429
Support Equipment	C/CPFF	DME, Orlando, FL	Note 1			0.044	NOV 99				0.044
Tech Order Ver & Val	VARIOUS	VARIOUS	Note 1	0.120	VARIOUS	0.216	VARIOUS	0.218	VARIOUS	Cont.	Cont.
Subtotal Product Dev				0.549		0.666		0.884		Cont.	Cont.
Remarks:											
Note 1: Prior year costs have not been tracked in these cost categories.											
Dev Spt	PO	AF Res Lab Wright-Patterson AFB, OH	0.224	0.205	DEC 98	0.425	VARIOUS	0.050	DEC 00	Cont.	Cont.
Subtotal Spt			0.224	0.205		0.425		0.050		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT 3326							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Devel Test & Eval	PO	46 Test Wing, Eglin AFB, FL	34.493	0.192	AUG 99	0.198	AUG 00	0.371	AUG 01	Cont.	Cont.
Subtotal T&E			34.493	0.192		0.198		0.371		Cont.	Cont.
Remarks:											
Management A&AS	C/CPFF	VARIOUS		0.133	JUN 99						0.133
Subtotal Management				0.133							0.133
Remarks:											
Total Cost			34.717	1.079		1.289		1.305		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615							
COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
D615, SOF Aviation		9.292	7.219	13.413	4.000	17.442	2.697	.775	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project provides aviation support to Special Operations Forces (SOF) in world-wide 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 the Special Operations 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-60G/L/K, MH-53J, TH-53A, and MH-47D/E. Efforts include:

- A/MH-6. (1) Develops lightweight, rapid reconfigurable mission support equipment. (2) Prototypes and tests structural fuselage modifications to increase the maximum gross weight by 25%.
- MH-47/MH-60K. (1) Develops and tests aircraft survivability equipment hardware and software. (2) Develops and tests the MH-60 fuel control system, conducts Congressionally-mandated Live Fire testing on the MH-47E and MH-60K, develops and tests ballistically tolerant composite small arms protection system for vulnerable helicopter systems. (3) Develops and tests cockpit, hardware, and software improvements to communication and navigation systems. (4) Develops, procures and installs a system that inerts (exchanging oxygen with nitrogen) in the main and auxiliary fuel tanks to improve survivability from small arms fire.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615
<p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> • (5.182) MH-47/MH-60. Continued development of onboard inert gas generation system. Started development and integration of Aircraft Survivability Equipment countermeasures. Started integration and testing of an infrared exhaust suppressor on the MH-47 helicopter. (1QTR99-4QTR99) • (0.970) MH-47/MH-60. Initiated development of the weather radar drop-in card for the Multi-Mode Radar for the MH-47E and MH-60K. Initiated study for integration of new mission processors, multi-function displays and avionics. (1QTR99-4QTR99) • (3.140) A/MH-6. Continued development of lightweight, rapid reconfigurable mission support equipment. (1QTR99-2QTR99) <p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (2.941) MH-47/MH-60. Initiate combined Integrated Infrared Countermeasures (IRCM) and Suite of IRCM; integration to treat infrared MH-47 and MH-60 countermeasures as a single integrated program. Provides for testing and installation of fixes. Funds integration of 200-gallon internal auxiliary fuel tank for 1/160 MH-60 aircraft. Continues Ballistic Protection System (BPS) (formerly Small Arms Protection System). Additional funding provides BPS modification of aircraft. (1QTR00-4QTR00) • (1.408) A/MH-6. Funds provide for the integration of the Allison 250-C30/R3 engine, and Full Authority Digital Electronic Control software refinement into the Mission Enhancement Little Bird (MELB) aircraft. Provide extensive Electromagnetic Interference/Electromagnetic Countermeasure testing for the MELB aircraft. This includes shipboard compatibility, full certification at the Dahlgren facility and additional shielding/protection for the aircraft systems. Partially replace large single functional analog components with fleet common miniaturized, lightweight multifunctional reconfigurable displays for flight, navigation, communication and weapons systems management. (1QTR00-4QTR00) 	

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615
<ul style="list-style-type: none"> • (2.870) MH-47/MH-60. Incorporate cost to rehost Integrated Avionics System software into new mission processor. Incorporate Global Positioning System/Inertial Navigation System (GPS/INS) into the MH-47E and MH-60K aircraft. Develop and provide for installation of weather radar mode and incorporation of extensive Electromagnetic Interference/Electromagnetic Countermeasures (EMI/EMC) and electromagnetic vulnerability fixes. (1QTR00-4QTR00) <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> • (2.978) MH-47/MH-60. Continue combined Integrated Infrared Countermeasures (IRCM) and Suite of IRCM ; integration to treat MH-47 and MH-60 fleet infrared countermeasures as a single integrated program. Continue testing and installation of Aircraft Survivability Equipment fixes. Initiate development, integration and testing of Nuclear, Biological and Chemical (NBC) crew protection system and NBC point detection system. (1QTR01-4QTR01) • (4.081) A/MH-6. Continue prototype testing of the Mission Enhancement Little Bird (MELB) aircraft. Continue to provide for the integration of the Allison 250-C30/R3 engine, and Full Authority Digital Electronic Control software refinement into the MELB aircraft. Continue to provide for EMI/EMC testing for the MELB aircraft. This includes shipboard compatibility and certification at the Dahlgren facility and additional shielding/protection for the aircraft systems. Continue to replace large single functional analog components with fleet common miniaturized, lightweight multifunctional reconfigurable displays for flight, navigation, and communication and weapon systems management. (1QTR01-4QTR01) • (3.834) MH-47/MH-60. Continue to provide funds to rehost Integrated Avionics System software onto new mission processor. Provide for Modular Avionics testing. Program incorporates modularized avionics and open systems computer architecture. (1QTR01-4QTR01) • (2.520) MH-47/MH-60. Fund modification of Army Aircraft Command and Control antenna pack to conform to existing SOF-unique configuration. Incorporate GPS/INS to meet mandated national airspace requirements. Integrate into all MH-47 and MH-60 aircraft. Continue development and 	

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615

procurement/installation of weather radar mode and incorporation of Electromagnetic Interference/Electromagnetic Countermeasures (EMI/EMC) and electromagnetic vulnerability fixes. (1QTR01-4QTR01)

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, Rotary Wing Upgrades & Sustainment	44.777	81.560	68.480	31.686	35.140	48.854	69.557	Cont.	Cont.

C. Acquisition Strategy: None.

D. Schedule Profile	<u>FY99</u>				<u>FY00</u>				<u>FY01</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
Mission Enhancement Little Bird (MELB) Miniaturization					x							
MELB Conformal Tanks						x						
MELB MS IIIB						x						
MELB Integration and Testing							x	x	x	x	x	x
Aircraft Survivability Equipment Testing and Installation						x	x	x	x	x	x	
Multimode Radar Weather Card MS II			x									
MH-47 Ballistic Protection System Contract Award						x						
NBC Crew Protection MH-60/MH-47									x			

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT D615							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Primary Hardware Dev											
MH-47/60	VARIOUS	PM TAPO/Ft Eustis, VA	1.700	5.152	VARIOUS	3.107	VARIOUS	8.732	VARIOUS	Cont.	Cont.
A/MH-6	VARIOUS	PM-MELB/Ft Eustis, VA	0.843	3.140	VARIOUS	0.800	TBD	1.791	TBD	Cont.	Cont.
Subtotal Product Dev			2.543	8.292		3.907		10.523		Cont.	Cont.
Remarks:											
Subtotal Spt											
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT D615							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Devel Test & Eval MH-47/60	VARIOUS	PM TAPO/Ft Eustis, VA	0.115	0.500	VARIOUS	2.704	VARIOUS	0.600	VARIOUS	Cont.	Cont.
A/MH-6	VARIOUS	PM-MELB/Ft Eustis, VA	0.149	0.500	VARIOUS	0.608	VARIOUS	2.290	VARIOUS	Cont.	Cont.
Subtotal T&E			0.264	1.000		3.312		2.890		Cont.	Cont.
Remarks:											
Subtotal Management											
Remarks:											
Total Cost			2.807	9.292		7.219		13.413		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417						

COST (Dollars in Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
S0417, Underwater Systems Advanced Development	68.944	43.314	10.390	9.265	10.602	4.380	5.040	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project funds the development of Sea, Air, Land (SEAL) support items used during the conduct of hydrographic/inland reconnaissance, beach obstacle clearance, underwater ship attack, and other direct action missions. Sub-projects include:

- Advanced SEAL Delivery System (ASDS). The ASDS is a manned combatant mini-submarine used for the clandestine delivery of Special Operations Forces (SOF) personnel and weapons. The ASDS will provide the requisite range, endurance, payload, and other capabilities for operation in the full range of threat environments.
- 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 include the following:
 - Naval Special Warfare Very Shallow Water Mine Countermeasures (NSW VSW MCM). Phased development/improvement of low magnetic and acoustic signature equipment to support the combat swimmer in the NSW VSW MCM operational environment.
 - Non-Gasoline Burning Outboard Engine. Development of a submersible outboard engine, which does not use highly volatile gasoline, for use on SOF Combat Rubber Raiding Craft.
 - Swimmer Transport Device. Test and procure a Commercial-Off-the-Shelf/Non-Developmental Item undersea mobility vehicle to transport combat swimmers when the distance from the ASDS to the target area or landing site is excessive.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417	
<ul style="list-style-type: none"> Sea, Air, Land (SEAL) Delivery Vehicle. Replace obsolescent electronics with maintainable systems. Improve reliability and mission success. <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (67.200) Advanced SEAL Delivery System (ASDS). Completed integration, construction, and initial certification of the first ASDS vehicle. Conducted operational test and evaluation of the first ASDS at shallow water test site. (1QTR99-4QTR99) (0.948) Naval Special Warfare Very Shallow Water Mine Countermeasures. Continued development of integrating sensor suite, propeller enhancements, hydrodynamic modifications and rechargeable extended-life battery packs for the Semi-Autonomous Hydrographic Reconnaissance Vehicle. (1QTR99-4QTR99) (0.796) Non-Gasoline Burning Outboard Engine. Completed basic engine design/development and began combined contractor/developmental/operational testing. Began development of Pre-Planned Product Improvement (P3I) proposal for noise reduction, continued integration of new Environmental Protection Agency mandated standards, and began preparation for MS III. (1QTR99-4QTR99) <p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> (40.083) ASDS. Complete operational test and evaluation and final certification of the first ASDS vehicle. Initiate primary host fitup and sea trials of the first vehicle. Conduct hydrodynamic testing of host ship maneuvering characteristics and support of Virginia Class host submarine design efforts. Initiate development of P3I: secondary host, degaussing, external payload, and battery. (1QTR00-4QTR00) (1.976) Naval Special Warfare Very Shallow Water Mine Countermeasures (NSW VSW MCM). Semi-Autonomous Hydrographic Reconnaissance Vehicle (SAHRV) - Complete development, achieve a MS I/II decision, conduct developmental and operational testing, and achieve a MS III decision in preparation for award of production contract. Hydrographic Reconnaissance Littoral Mapping Device – 		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417
<p>Achieve a MS I/II decision. Initiate modifications to a Commercial Off-The-Shelf Hydrographic Reconnaissance System. (1QTR00-4QTR00)</p> <ul style="list-style-type: none"> • (0.699) Non-Gasoline Burning Outboard Engine. Complete contractor/developmental testing, continue operational testing, complete proposal for Pre-Planned Product Improvement (P3I) noise reduction, complete integration of new Environmental Protection Agency standards, and achieve MS III. (1QTR00-4QTR00) • (0.556) Swimmer Transport Device. Initiate testing utilizing Commercial Off-the-Shelf (COTS)/Non-Developmental Item (NDI) units. (1QTR00-4QTR00) <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> • (5.630) Advanced Sea, Air, Land (SEAL) Delivery System (ASDS). Continue hydrodynamic testing of host ship maneuvering characteristics and support of Virginia Class host submarine design efforts. Continue development of P3I: secondary host, degaussing, external payload, battery, and sensors. (1QTR01-4QTR01) • (3.963) Naval Special Warfare Very Shallow Water Mine Countermeasures (NSW VSW MCM). P3I for the sensor/navigation system onboard the Semi-Autonomous Hydrographic Reconnaissance Vehicle. Complete modifications to the Hydrographic Reconnaissance Littoral Mapping Device, conduct developmental and operational testing, and achieve a MS III decision in preparation for award of a production contract. (1QTR01-4QTR01) • (0.268) STD. Continue testing of COTS/NDI units. (1QTR01-2QTR01) • (0.529) SEAL Delivery Vehicle. Develop, test and procure improved electronics components. (1QTR01-4QTR01) 	

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE	FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417		

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>To Complete</u>	<u>Total Cost</u>
Advanced Sea, Air, Land (SEAL) Delivery Sys (ASDS)									
PROC, ASDS	9.247	7.379	25.500	74.672	10.927	78.859	7.012	Cont.	Cont.
PROC, ASDS Adv Proc	0.001	7.977	22.472		31.303			Cont.	Cont.
Naval Special Warfare Very Shallow Water Mine Countermeasures									
PROC, Maritime Equip.		1.583	4.252						5.835
Non-Gasoline Burning Outboard Engine									
PROC, Maritime Equip.		2.671							2.671
Swimmer Transport Device									
PROC, Maritime Equip.			0.926	1.180					2.106
PROC, MK8 MOD 1 SEAL Delivery Vehicle	0.580			1.047	1.676	1.717	1.758	Cont.	Cont.

C. Acquisition Strategy:

- 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.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000											
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417											
					<u>FY99</u>				<u>FY00</u>				<u>FY01</u>			
<u>D. Schedule Profile</u>					1	2	3	4	1	2	3	4	1	2	3	4
Advanced Sea, Air, Land (SEAL) Delivery System																
Shallow Water Testing								x								
Deep Water Testing									x							
Delivery of First Unit										x						
Hydrodynamic Testing												x	x	x	x	
Pre-Planned Product Improvement (P3I) Development												x	x	x	x	x
Non-Gasoline Burning Outboard Engine																
Milestone III											x					
Naval Special Warfare Very Shallow Water Mine Countermeasures																
Milestone I/II (Semi-Autonomous Hydrographic Reconnaissance Vehicle (SAHRV))									x							
Milestone III (SAHRV)											x					
Milestone I/II (Hydrographic Reconnaissance Littoral Mapping Device (HRLMD))												x				
Milestone III (HRLMD)															x	
Swimmer Transport Device																
Test Commercial-off-the-Shelf/Non-Developmental Items											x	x	x	x		
SEAL Delivery Vehicle																
Develop and Test Improved Electronics													x	x	x	x

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT S0417							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Primary Hardware Dev											
NBOE	CPF	OMC, Waukegan, IL	0.249	0.258	VARIOUS	0.357	VARIOUS			Cont.	Cont.
NSW VSW MCM	VARIOUS	VARIOUS	1.948	0.450	MAY 99	0.876	JAN 00	2.878	DEC 00	Cont.	Cont.
SDV	WR	See Note 1	11.719					0.476	VARIOUS	Cont.	Cont.
STD	TBD	TBD						0.108	VARIOUS		0.108
ASDS	CPIF/C	Northrop-Grumman	154.000	58.982	VARIOUS	36.687	VARIOUS	5.165	VARIOUS	Cont.	Cont.
ASDS	CPFF	Newport News Ship Yard, VA	9.000	3.400	VARIOUS	0.500	VARIOUS				12.900
ASDS	VARIOUS	VARIOUS	3.500	0.268	FEB 99						3.768
Subtotal Product Dev			180.416	63.358		38.420		8.627		Cont.	Cont.
Remarks:											
Note 1: Coastal System Station, Panama City, FL.											
Technical Data											
NBOE	WR	CSS, Panama City, FL		0.043	NOV 98						0.043
NSW VSW MCM	WR	CSS, Panama City, FL				0.100	JAN 00	0.100	NOV 00		0.200
NSW VSW MCM	WR	NSWC, Panama City, FL				0.455	JAN 00	0.500	NOV 00		0.955
ASDS	VARIOUS	VARIOUS	4.900	1.600	JAN 99	1.096	VARIOUS			Cont.	Cont.
Subtotal Spt			4.900	1.643		1.651		0.600		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT S0417							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Engineering T&E (NBOE)	WR	CSS, Panama City, FL	0.120	0.148	JAN 99	0.151	JAN 00				0.419
Devel T&E (NSW VSW MCM)	WR	VARIOUS	0.015	0.143	JUL 99						0.158
Oper. T&E (NSW VSW MCM)	WR	OPTEVFOR, Norfolk, VA				0.100	JUN 00				0.100
OT&E (STD)	MIPR	OPTEVFOR, Norfolk, VA				0.373	MAY 00	0.060	VARIOUS		0.433
Subtotal T&E			0.135	0.291		0.624		0.060		0.000	1.110
Remarks:											
Contrac. Eng Spt (NBOE)	DO	ADS, Panama City, FL	0.075	0.090	FEB 99	0.068	JAN 00				0.233
Program Mgt Spt (NBOE)	VARIOUS	CSS, Panama City, FL	0.524	0.257	NOV 98	0.123	JAN 00				0.904
Contrac. Eng Spt (NSW VSW MCM)	VARIOUS	VARIOUS	0.233	0.165	MAR 99	0.178	JAN 00	0.197	DEC 00	Cont.	Cont.
Govt. Eng Spt (NSW VSW MCM)	WR	NSWC, Panama City, FL		0.150	NOV 98	0.200	JAN 00	0.200	NOV 00	Cont.	Cont.
Program Mgt Spt (NSW VSW MCM)	WR	NAVSEA, Arlington, VA	0.050	0.040	JAN 99	0.032	DEC 99	0.053	DEC 00	Cont.	Cont.
Travel (NSW VSW MCM)	WR	NAVSEA, Arlington, VA	0.025			0.035	VARIOUS	0.035	DEC 00	Cont.	Cont.
Program Mgt Spt (SDV)	WR	NAVSEA, Arlington, VA	0.374					0.053	DEC 00	Cont.	Cont.
VARIOUS (ASDS)	VARIOUS	VARIOUS		2.950	VARIOUS	1.800	VARIOUS	0.465	VARIOUS	Cont.	Cont.
Program Mgt Spt (STD)	VARIOUS	VARIOUS				0.183	VARIOUS	0.100	TBD		
Subtotal Management			1.281	3.652		2.619		1.103		Cont.	Cont.
Remarks:											
Total Cost			186.732	68.944		43.314		10.390		Cont.	Cont.
Remarks:											

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)				DATE						
				FEBRUARY 2000						
APPROPRIATION / BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE / PROJECT NO.								
RDT&E, DEFENSE-WIDE / 7		PE 1160404BB Spec Operations Tactical Systems Development / Project S1684								
COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
S1684, SOF Surface Craft Advanced Development		.196	4.718	1.826	3.466	1.066	.580	1.486	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project provides for the development and testing of surface combatant craft and selected items of specialized equipment to meet the unique requirements of Special Operations Forces (SOF). These craft and equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict.</p> <ul style="list-style-type: none"> Special Operations Craft – Riverine (SOC-R). This armored craft will provide SOF with the capability to insert and extract SOF in the riverine environment. The SOC-R will be capable of navigating coastal, restricted and shallow rivers, estuaries, bays and littoral, and carry light organic arms. In addition, the craft will be capable of being transported and air-dropped by C-130 aircraft. The SOC-R replaces the Vietnam-Era MK II Patrol Boat Riverine and the Mini Armored Troop Carrier. <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (0.196) Completed Naval Special Warfare Rigid Inflatable Boat airdrop. (3QTR99-4QTR99) <p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> (4.654) SOC-R. Approve acquisition strategy, develop and issue request for proposal, conduct source selection, and award prototype development contract. (1QTR00-4QTR00) 										

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE				
					FEBRUARY 2000				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Spec Operations Tactical Systems Development / Project S1684						
FY 2001 PLAN:									
<ul style="list-style-type: none"> (1.826) Special Operations Craft–Riverine (SOC-R). Convert commercial prototype into combatant craft, adding weapons, armor, tactical communication and military electronics. Perform combined developmental/operational testing. Perform operational evaluation. (1QTR01-4QTR01) 									
B. <u>Other Program Funding Summary</u>									
	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>
NSWRIB PROC, NSWRIB	14.869								
SOC-R PROC, SOF Combatant Craft Sys		6.597	5.663	2.029	4.918	6.664	7.784	Cont.	Cont.
C. <u>Acquisition Strategy:</u>									
<ul style="list-style-type: none"> Market Survey Completed. Business Case Analysis conducted on best value. Based on analysis results, acquisition strategy is under development. 									

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000											
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Spec Operations Tactical Systems Development / Project S1684											
					<u>FY99</u>				<u>FY00</u>				<u>FY01</u>			
					1	2	3	4	1	2	3	4	1	2	3	4
<u>D. Schedule Profile</u>																
SOC-R																
MS O/I										x						
MS II															x	
Conduct DT/OT															x	

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SOF SURFACE CRAFT ADVANCE DEVELOPMENT / PROJECT S1684							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
SOC-R											
Build + Test Prototype	CPFF	TBD				2.470	JAN 00				2.470
Logistics Development	CPFF	Unknown				0.775	SEP 00			Cont.	Cont.
DT/OT Support	VARIOUS	VARIOUS				0.769	MAR 00	1.170	JAN 01	Cont.	Cont.
PMO Support	VARIOUS	VARIOUS				0.160	FEB 00	0.656	OCT 00	Cont.	Cont.
Subtotal Product Dev						4.174		1.826		Cont.	Cont.
Remarks:											
SOC-R P3I											
Airdrop Subsystem		TBD								Cont.	Cont.
Ballistic Protection	CPFF	VARIOUS				0.250	JUN 00			Cont.	Cont.
Smoke/Obscurant	CPFF	VARIOUS				0.230	MAY 00			Cont.	Cont.
NSW RIB Airdrop				0.196	VAR						
Subtotal Spt						0.480		0.000		Cont.	Cont.
Remarks:											
Total Cost											
				0.196		4.654		1.826		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)						DATE FEBRUARY 2000				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350							
COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
S350, Special Operations Forces Planning and Rehearsal System		4.024	3.147	3.352	3.103	2.853	2.665	3.615	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project is a joint evolutionary acquisition program for the USSOCOM. Special Operations Forces Planning and Rehearsal System (SOFPARS) is developing an automated mission planning capability to support Special Operations Forces (SOF). SOFPARS will consist of a collection of automated mission planning hardware and software tools. Those tools include SOF enhancements to the Air Force Mission Support personal computer-based Portable Flight Planning Software. SOFPARS will be provided to Air Force Special Operations Command, United States Army Special Operations Command, and Naval Special Warfare Command units. SOFPARS will automate mission planning, thus allowing SOF commanders and operators to plan and respond quickly to missions of national importance, as well as day-to-day taskings. To accomplish this task, SOFPARS will provide a multi-command-level planning capability at major SOF headquarters, theater headquarters, SOF forward operating bases and forward operating locations. SOFPARS will also provide portable subsystems and mission execution support products for use by crews deployed to operational locations. Present mission planning capabilities cannot adequately support the stated mission need. Existing systems are insufficient for planning SOF operations. Specifically, existing systems lack sufficient processing speed and flexibility, storage capacity, growth potential, graphics (both on-screen and hard copy output), image processing and storage, and the ability to process combat planning folder data in a timely manner. They also lack near-real-time access to national/tactical level data bases and the capability to update data in a timely fashion, and lack the means to effectively process the data during mission planning. The mobility, complexity, quantity, and lethality of enemy threats dictate automated data input and systems that can be interfaced via electronic communication systems throughout the SOF community. The SOFPARS effort meets the joint requirement to ensure interoperability and standardization of the mission planning process between SOF and the Services. Aircraft affected include MH-60G/K/L, MH-47E/D, MH-53J, MC-130E/H, AC-130H/U, AH/MH-6, MC-130P, EC-130E, and CV-22. SOFPARS will also provide timely loading/mission critical data/mission planning capability to the SOF ground and maritime platforms and/or forces.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350	
<p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none">• (0.907) Continued SOF unique features development. (1QTR99-4QTR99)• (1.636) Continued personal computer (PC)-based development and integration with Portable Flight Planning Software architecture. (1QTR99-4QTR99)• (1.481) Continued aircraft weapons/electronics interface software module development. (1QTR99-4QTR99) <p>FY 2000 PLAN:</p> <ul style="list-style-type: none">• (0.623) Begin new software architecture development interfaces to component Army, Air Force and Navy mission planning, rehearsal and execution systems. (1QTR00-4QTR00)• (1.098) Continue meeting deferred/future requirements and aircraft weapons/electronics interface support for PC development and interface with joint systems. (1QTR00-4QTR00)• (1.426) Program office and engineering support/services. (1QTR00-4QTR00)		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350	

FY 2001 PLAN:

- (0.598) Continue to develop software architecture interfaces to service/component mission planning, rehearsal, and execution systems. (1QTR01-4QTR01)
- (1.859) Continue meeting deferred/future requirements and aircraft weapons/electronics interface support for personal computer (PC) development and interface with joint systems. (1QTR01-4QTR01)
- (0.895) Program office and engineering support/services. (1QTR01-4QTR01)

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To Complete	Total Cost
PROC, Special Operations Forces Planning and Rehearsal System	.610	2.414	2.021	1.438	0.923	0.941	.565	Cont.	Cont.

C. Acquisition Strategy:

Develop mission planning software to support SOF operations leveraging ongoing PC-based efforts under the Air Force Mission Support System program. Integration of PC-based Portable Flight Planning Software to support SOF requirements maximizes use of commercial off-the-shelf software technology and components to reduce overall costs and schedule. Contract strategy combines various contracts and types to include competitively awarded cost plus and sole source cost no fee (educational institution) contracts. Maximize use of existing hardware technology procured via firm fixed price contract to take advantage of software portability and open system architecture. Focuses on platform specific software

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RDT&E, DEFENSE-WIDE / 7			PE 1160404BB Special Operations Tactical Systems Development / Project S350																																																																																																																																																					
<p>interface modules required to initialize and upload platform mission computers avionics through the use of electronic data transfer devices. Uses software support facility to maintain and update software.</p>																																																																																																																																																								
<table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%;"></th> <th colspan="4" style="text-align: center;"><u>FY99</u></th> <th colspan="4" style="text-align: center;"><u>FY00</u></th> <th colspan="3" style="text-align: center;"><u>FY01</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>D. <u>Schedule Profile</u></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Air Force Mission Support System 2.2 Development Contract Award – Interface Modules</td> <td style="text-align: center;">x</td><td></td><td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td></td> </tr> <tr> <td>Portable Flight Planning System Releases</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> 3.1</td> <td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> 3.11</td> <td></td><td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> 3.2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td></td> </tr> <tr> <td>Software Integration & Testing</td> <td></td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td></td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td></td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td style="text-align: center;">x</td> </tr> <tr> <td>Threat Import Tool Contract Award</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td> Release</td> <td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>												<u>FY99</u>				<u>FY00</u>				<u>FY01</u>				1	2	3	4	1	2	3	4	1	2	3	4	D. <u>Schedule Profile</u>													Air Force Mission Support System 2.2 Development Contract Award – Interface Modules	x					x				x			Portable Flight Planning System Releases													3.1				x									3.11					x								3.2										x			Software Integration & Testing		x	x	x		x	x	x		x	x	x	Threat Import Tool Contract Award													Release				x								
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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT S350							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Licenses	ALLOT	ESC, Hanscom AFB, MA	26.111								26.111
Subtotal Product Dev			26.111								26.111
Remarks:											
Development Support	C/CPFF	Tybrin, Ft Walton Beach, FL	3.400	1.498	VARIOUS	1.631	VARIOUS	1.726	VARIOUS	Cont.	Cont.
Software Support	C/CPFF	LMFS, Owego, NY	5.047							Cont.	Cont.
Training Development	C/CPFF	LMFS, Owego, NY	0.750							Cont.	Cont.
Configuration Management	C/CPFF	LMFS, Owego, NY	1.200							Cont.	Cont.
Technical Data	C/CPFF	Tybrin, Ft Walton Beach, FL		0.338	VARIOUS	0.235	VARIOUS	0.199	VARIOUS	Cont.	Cont.
Subtotal Spt			10.397	1.836		1.866		1.925		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT S350							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Developmental Test & Eval	MIPR	46th FTS, Hurlbert Field, FL	0.200	0.150	VARIOUS	0.289	VARIOUS	0.314	VARIOUS	Cont.	Cont.
Operational Test & Eval	MIPR	18th FTS, Hurlbert Field, FL	0.303	0.194	JAN 99	0.198	NOV 99	0.218	VARIOUS	Cont.	Cont.
GFE	MIPR	Integrated Aviation Systems 21 Working Group Ft Campbell, KY		0.188	VARIOUS						
Subtotal T&E			0.503	0.532		0.487		0.532		Cont.	Cont.
Remarks:											
Contractor Engineering Spt	PO	CAS Inc, Huntsville, AL	3.414	0.421							
Government Engineering Spt	ALLOT	AATD, Ft Eustis, VA	6.000	1.028	OCT 98	0.546	OCT 99	0.607	OCT 00	Cont.	Cont.
Travel	ALLOT	SOF PMO Ft Eustis, VA		0.080	OCT 98	0.080	OCT 99	0.088	OCT 00	Cont.	Cont.
Overhead	ALLOT	SOF PMO Ft Eustis, VA		0.127	OCT 98	0.168	OCT 99	0.200	OCT 00	Cont.	Cont.
Subtotal Management			9.414	1.656		0.794		0.895		Cont.	Cont.
Remarks:											
Total Cost			46.425	4.024		3.147		3.352		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S625							
COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
S625, SOF Training Systems		22.798	9.190	8.731	19.110	1.892	1.878	0	Cont.	Cont.

A. Mission Description and Budget Item Justification

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

- AC-130U Gunship Aircrew Training Devices/Testbed (ATD/TB) [formerly AC-130U Gunship Aircrew/Maintenance Training System (GA/MTS)]: The ATD/TB develops an integrated, ground-based combination training and mission rehearsal system to support initial, mission, special qualification, continuation, upgrade and maintenance training for the AC-130U Gunship aircrews. ATD/TB will be networked with other SOF simulators.
- AC-130H Crew Station Trainer: Currently all procedural training is conducted on powered-up static aircraft, or in the air. This program develops a procedural trainer for the battle management center.
- Light Assault Attack Reconfigurable Simulator (LASAR): Develops an integrated, combat mission flight simulator into the existing High Level Architecture (HLA) environment to conduct real-world mission rehearsal. LASAR simulator will integrate 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 Simulator Modeling and Simulation Office to support a broad spectrum of distributed simulation applications, building on the experience of distributed interactive simulation protocols.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S625
<p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> • (17.346) Aircrew Training Device/Testbed (ATD/TB). Continued development of flight deck and remaining crew stations. (1QTR99-4QTR99) • (2.134) ATD/TB. Completed sensor upgrade. (1QTR99-3QTR99) • (1.916) ATD/TB. Completed simulation and interface development. (1QTR99-4QTR99) • (1.402) Continued program management office support. (1QTR99-4QTR99) <p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (5.130) ATD/TB. Achieve full operational capability for navigator/fire control officer and sensor operator. Continue flight deck development. (1QTR00-4QTR00) • (2.587) AC-130H Crew Station Trainer. Develop a procedural trainer for AC-130H aircraft. (2QTR00) • (0.573) Light Assault Attack Reconfigurable Simulator. Release final request for proposal and conduct source selection. (3QTR00) • (0.900) Provide program management office support. (1QTR00-4QTR00) 	

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE	FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S625		

FY 2001 PLAN:

- (1.473) Aircrew Training Device/Testbed (ATD/TB). Complete development of flight deck and integration with the Battle Management Center (BMC). (1QTR01-4QTR01)
- (4.373) Light Assault Attack Reconfigurable Simulator (LASAR). Award Engineering, Manufacturing and Development (EMD) contract. Begin development/front-end analysis of aircrew training manual, field of view, control loading, and weapons. (1QTR01-4QTR01)
- (2.056) High Level Architecture (HLA). Update compliant HLA system conforming to HLA rules, the HLA interface specification, and the HLA object model template for the MC-130E, MC-130H, MH-47E, and MH-60K training devices. (1QTR01-4QTR01)
- (0.829) Program management office support. (1QTR01-4QTR01)

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, SOF Training Systems	12.383	2.101	2.364	.112	.096	2.444	27.489	Cont.	Cont.

C. Acquisition Strategy:

- ATD/TB program is currently in Phase II. The two-phase acquisition strategy first built a BMC testbed using production AC-130U avionics, commercial image generation, and computers to refine user requirements prior to the second phase to procure a complete BMC and flight deck aircrew training device. A Milestone II decision occurred 4QFY97. Phase II feasibility analysis has been completed. Hardware vendor selection process is complete and proof of principle activities began 2QFY99.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE				FEBRUARY 2000				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S625								
<ul style="list-style-type: none"> • Light Assault Attack Reconfigurable Simulator. Award Engineering, Manufacturing and Development contracts by full and open competition. Maximize use of non-developmental item technology and actual Airworthy Aircraft Components for design, development and test. • High Level Architecture (HLA). Develop compliant HLA system conforming to HLA rules, the HLA interface specification, and the HLA object model template for the MC-130E, MC-130H, MH-47E, and MH-60K training devices. 													
					<u>FY99</u>		<u>FY00</u>			<u>FY01</u>			
<u>D. Schedule Profile</u>					1	2	3	4	1	2	3	4	
Aircrew Training Device/Testbed Development/Integration					x	x	x	x	x	x	x	x	
Begin Flight Deck Proof of Principle								x					
HLA Update											x		
AC-130H Crew Station Trainer Contract Award									x				
Light Assault Attack Reconfigurable Simulator (LASAR) Request for Proposal										x			
LASAR Engineering, Manufacturing, and Development Contract Award											x		
LASAR Development											x	x	
											x		

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT S625							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
System Eng Design/Dev	TBD	TBD						4.373	NOV 00	Cont.	Cont.
Light Assault Attack Reconfigurable Simulator											
Gunship Aircrew/Maintenance Training System	C/CPAF	LMIS - Orlando, FL	20.618	21.396	VARIOUS	5.130	VARIOUS	0.973	NOV 00		48.117
AC-130H Crew Station Trainer	C/CPAF	LMIS - Orlando, FL				2.587	MAR 00				2.587
Subtotal Product Dev			20.618	21.396		7.717		5.346		Cont.	Cont.
Dev Spt											
HLA	C/CPAF	LMIS - Orlando, FL						1.055	NOV 00	Cont.	Cont.
Subtotal Spt								1.055	NOV 00	Cont.	Cont.
Devel Test & Eval											
ATD/TB	C/FFP	LMIS - Orlando, FL						0.500	NOV 00	Cont.	Cont.
HLA								1.001	NOV 00	Cont.	Cont.
Subtotal T&E								1.501		Cont.	Cont.
Prog Mgt Spt	ALLOT	STRICOM, Orlando, FL	2.452	1.402	VARIOUS	1.473	VARIOUS	0.829	VARIOUS	Cont.	Cont.
Subtotal Management			2.452	1.402		1.473		0.829		Cont.	Cont.
Remarks:											
Total Cost			23.070	22.798		9.190		8.731		Cont.	Cont.
Remarks:											

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)				DATE FEBRUARY 2000						
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700								
COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
S700, Communications Advanced Development		2.118	2.662	3.571	3.849	2.742	3.027	3.040	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project provides for development and testing of selected items 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 actions, 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.

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 is a multitude of existing and projected national assets that operate with any force combination in multiple environments. The C4I 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). Sub-projects include:

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700	
<p>OPERATIONAL ELEMENT (TEAM)</p> <ul style="list-style-type: none"> • Active Noise Reduction (ANR): ANR is an electronic noise canceling device, which will be built into air crew helmets, and headsets. This system detects noise, reverses phase, duplicates amplitude, and feeds the signal into the headset, thereby canceling most of the noise. These high noise levels cause irritability, fatigue, and dizziness, which can compromise the aircrew ability to perform mission tasks. • Multi-Band Inter/Intra Team Radio (MBITR). MBITR will provide lightweight, handheld, inter/intra team communications for Joint SOF. SOF teams conduct air, ground, and maritime missions across the entire operational spectrum. These missions currently require SOF teams to carry multiple handheld radios operating in several different frequency bands to ensure positive communications. The MBITR will provide each of these frequency bands in a single handheld radio with embedded communications security (COMSEC). • Special Operations Communications Assemblage (SOCA) Improvement. Program upgrades 80 SOCA units delivered to SOF units in FY 1993 and prior. Proposed modifications include repackaging/downsizing (no more than 70lbs. less generator), enhanced graphics, ultra high frequency satellite communications demand assigned multiple access capability, advanced data controllers, and document upgrades to enhance interoperability with conventional and other SOF units. The acquisition strategy is to develop and test the proposed improvements of first article test items. • Special Mission Radio System (SMRS). SMRS is a joint radio system that provides SOF a lightweight, low probability of intercept/low probability of detection high frequency (HF) radio with co-resident military standard automatic link establishment (ALE), non-standard ALE, and internal communication security capabilities. Deployed in hostile and clandestine environments, the system consists of manpack radio and base station, and provides hardware improvements and software documentation. This program also acquires general-purpose HF radio systems for SOF mission requirements. 		

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<ul style="list-style-type: none"> • Condor. Condor is a secure worldwide cellular telephone service with the inter/intra team capability. The system consists of handset equipment, mobile base station, low earth orbit satellites constellation with gateways, airborne base stations/relays, and manpack cell sites/gateways which supports 2000 users. These systems will support SOF in all aspects of their missions. • Mission Planning, Analysis, Rehearsal and Execution (MPARE) System. A joint, fully integrated Command and Control (C2) system of systems that is focused on a common operational capability for SOF commander's at all levels. MPARE will allow for collaborative and distributed information sharing/analysis, from all echelons in and out of the SOF community, through all phases of the SOF mission for both the deliberate and time-critical environment. MPARE will integrate disparate current SOF mission planning and execution systems, simulations, and simulators and ensure complete integration with relevant command, control, communications and intelligence (C4I), surveillance and reconnaissance networks. Currently, this capability does not exist and is critical for SOF commanders to maintain their information dominance well into the 21st Century. <p>ABOVE OPERATIONAL ELEMENT (DEPLOYED)</p> <ul style="list-style-type: none"> • Special Mission Radio System (SMRS). SMRS is also planned for use at this level. • Joint Base Station (JBS). JBS is an evolutionary acquisition program, which encompasses five Service-specific requirements: TSC-135 (core capability, commercial vehicle system), TSC-135 (V)1 (military vehicle system with transit case capabilities), TSC-135 (V)2 (transit case system) and TSC-135 (V)3 (fixed site system). JBS will provide SOF with continuous, reliable, communications among SOF component commands while allowing for differences in missions. JBS will contain line-of-sight (LOS) and beyond-LOS radios, and associated message handling, providing command and control voice, imagery, data, and facsimile. • SOF Tactical Assured Connectivity Systems (SOFTACS). SOFTACS is an integrated suite of communications systems designed to support the high-capacity, digital, secure, interoperable, transmission and switching requirements of the USSOCOM C4I architecture. 	

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700	
<p>ABOVE OPERATIONAL ELEMENT (GARRISON)</p> <ul style="list-style-type: none"> Special Mission Radio System (SMRS) is also planned for use at this level. <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (0.708) Multi-Band Inter/Intra Team Radio. Conducted development and operational testing in support of Milestone (MS) III. (2QTR99-4QTR99) (0.030) Active Noise Reduction. Acquired battery packs for testing. (4QTR99) (0.201) Special Operations Communications Assemblage Improvement. Conducted market research and performed integration and test of non-developmental item upgrades. (3QTR99-4QTR99) (0.291) SMRS. Completed operational test and evaluation in support of MS III. (1QTR99-4QTR99) (0.487) Joint Base Station. Performed test and evaluation of new technologies in support of Evolutionary Technology Insertion's (ETI's) for all variants. (2QTR99-4QTR99) (0.290) SOF Tactical Assured Connectivity Systems. Continued developmental/operational test and evaluation support. Conducted market research for block 2 ETI's. (2QTR99-4QTR99) (0.111) Condor. Conducted engineering analysis. (4QTR99) 		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700
<p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (0.182) Special Operations Communications Assemblage Improvement (SOCAIMP). Complete integration and testing of non-development item upgrades. (1QTR00-2QTR00) • (0.848) Special Mission Radio System (SMRS). Perform test and evaluation of digital message entry device Evolutionary Technology Insertion's (ETIs). (1QTR00-4QTR00) • (0.358) Joint BaseStation (JBS). Continue test and evaluation of new technologies in support of ETI's for all variants. (1QTR00-4QTR00) • (1.085) SOF Tactical Assured Connectivity (SOFTACS). Continue developmental /operational test and evaluation to support Milestone (MS) III. Start testbed operations for block 2 ETI's. Conduct market research for block 3 ETI's. (1QTR00-4QTR00) • (0.148) Multi-Band Inter/Intra Team Radio. Complete additional testing. (1QTR00-2QTR00) • (0.041) Naval Special Warfare (NSW) Tactical Radio Systems (TRS). Perform TRS integration support. (2QTR00-4QTR00) <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> • (0.940) SMRS. Initiate test and evaluation of a new SMRS vehicle kit. (2QTR01-4QTR01) • (0.416) JBS. Continue test and evaluation of new technologies in support of ETI's for all variants. (1QTR01-4QTR01) 	

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- (0.873) SOFTACS. Conduct test-bed operations for block 3 ETI's. Conduct market research for block 4 ETI's. (1QTR01-3QTR01)
- (1.342) Mission Planning, Analysis, Rehearsal and Execution (MPARE). Provides interoperability and integration for rehearsal, training, simulators and other external systems for command and control capability. Also provides for Theater Special Operations Commands (TSOC) interface with theater components and theater CINCs, and between TSOCs. Conduct market research and test and evaluation in support of procuring a top scene like capability. (1QTR01-4QTR01)

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, Communications & Electronics	70.401	84.028	74.444	56.092	25.541	32.358	33.842	Cont.	Cont.

C. Acquisition Strategy:

- SOF Tactical Assured Connectivity Systems (SOFTACS). The SOFTACS program will be managed under an evolutionary acquisition strategy. Evolutionary Technology Insertion's (ETI's) are integrated through block upgrades. ETI's will be supported by market research and test and evaluation, which will be used to evaluate the benefits and impacts on the SOFTACS.
- The MPARE program will be managed under an evolutionary acquisition strategy. The MPARE program will conduct market research, test and evaluation of ETIs.

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- Special Mission Radio System (SMRS) is currently in production and is now being managed under an evolutionary acquisition strategy. The SMRS program will conduct market research, test and evaluation of new technologies to determine ETIs for SMRS components.
- Joint Base Station (JBS) is currently in production and is now being managed under an evolutionary acquisition strategy. The JBS program will conduct market research, test and evaluation of new technologies and commercial off-the-shelf/non-developmental items to determine ETI's for all JBS program variants.

D. <u>Schedule Profile</u>	<u>FY99</u>				<u>FY00</u>				<u>FY01</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
Active Noise Reduction												
Battery Packs				x								
Multi-Band Inter-Team Radio												
Developmental Test/Operational Test		x	x	x	x	x						
Milestone (MS) III				x								
Special Operations Communications Assemblage Improvement												
Market Research			x	x								
Testing and Integration			x	x	x	x						
Special Mission Radio System												
Operational Test	x	x	x									

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000												
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S700												
					<u>FY99</u>				<u>FY00</u>				<u>FY01</u>				
<u>D. Schedule Profile</u>					1	2	3	4	1	2	3	4	1	2	3	4	
MS III								x									
ETI Testing and Integration									x	x	x	x		x	x	x	
Joint Base Station																	
ETI Testing and Integration All Variants						x	x	x	x	x	x	x	x	x	x	x	
SOF Tactical Assured Connectivity System																	
Developmental Test/Operational Test						x	x	x	x	x	x						
Milestone (MS) III													x				
Evolutionary Technology Insertion (ETI) Market Research								x	x	x			x	x	x		
ETI testing and integration									x	x	x	x	x	x	x		
Mission Planning, Analysis, Rehearsal and Execution System																	
Market Research														x	x		
Testing and Evaluation															x	x	x
Condor Engineering Analysis																	
Naval Special Warfare (NSW) Tactical Radio Systems.																	
Testing and Integration														x	x	x	

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT S700							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Primary Hardware Dev	Allot	NSMA; Arlington, VA	1.924			0.393	JAN00				2.317
	MIPR	NAWC AD; St. Inigoes, MD		0.487	MAR 99	0.296	JAN 00	0.958	NOV 00	8.474	10.215
	MIPR	SPAWAR; Charleston, SC		0.108	MAY 99	0.728	JAN00	1.421	NOV 00	0.483	2.740
	Cost Share	Racal; Rockville, MD	0.646	0.654	MAR 99						1.300
Ancillary Hardware Dev											
Systems Engineering	MIPR	NAWC AD; St. Inigoes, MD	2.147	0.125	MAY99						2.272
	MIPR	SPAWAR; Charlseton, SC		0.111	SEP99			0.136	NOV00		0.247
Licenses	Allot	DISA; Reston, VA	0.500								0.500
Tooling	Allot	DSA PM SATCOM/CECOM; Ft. Monmouth, NJ	1.172								1.172
GFE	CPFF	SSDS; Englewood, CO	5.472								5.472
Award Fees	Allot	NAWC AD; St. Inigoes, MD	7.531								7.531
Subtotal Product Dev			19.392	1.485		1.417		2.515		8.957	33.766
Remarks:											
Dev Spt											
Software Spt	MIPR	NAWC AD; St. Inigoes, MD				0.103	OCT99				0.103
	MIPR	NSMA; Arlington, VA				0.223	JAN00				0.223
Training Dev											
Integrated Logistics Spt											
Configuration Management											
Technical Data											
GFE											
Subtotal Spt						0.326					0.326
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS Dev / PROJECT S700							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Deval Test & Eval	VARIOUS	VARIOUS	0.370	0.076	VARIOUS	0.078	VARIOUS	0.054	VARIOUS		0.578
Operational Test & Eval	VARIOUS	VARIOUS	0.092	0.375	VARIOUS	0.484	VARIOUS	0.247	VARIOUS	1.072	2.270
Tooling											
GFE											
Subtotal T&E			0.462	0.451		0.562		0.301		1.072	2.848
Remarks:											
Contractor Engineering Spt	VARIOUS	VARIOUS	1.231	0.182	VARIOUS			0.415	VARIOUS	1.477	3.305
Government Engineering Spt	VARIOUS	VARIOUS	6.370			0.240	VARIOUS	0.166	VARIOUS	0.617	7.393
Program Management Spt	VARIOUS	VARIOUS				0.117	VARIOUS	0.122	VARIOUS	0.447	0.686
Travel	N/A	VARIOUS						0.052	VARIOUS	0.192	0.244
Labor (Research Personnel)											
Overhead											
Subtotal Management			7.601	0.182		0.357		0.755		2.733	11.628
Remarks:											
Total Cost			27.455	2.118		2.662		3.571		12.762	48.568
Remarks:											

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000						
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800								
COST (Dollars in Millions)			FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
S800, Special Operations Munitions Advanced Development			4.348	4.712	11.849	.810	.824	1.283	4.543	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project provides for the acquisition of selected, specialized munitions and equipment to meet unique Special Operations Forces (SOF) requirements. This is a continuing program. Sub-projects include:

- Improved Limpet Mine (ILM). The ILM will replace the existing limpet assembly modular. The ILM is required for sea, air, land delivery vehicle attacks against ships, submarines, nested patrol craft, submerged harbor facilities, and various other maritime targets. The ILM will provide greater explosive weight to be delivered to the target, decrease time-on-target by improving handling procedures, and result in an enhanced probability of mission success.
- SOF Demolition Kit. The kit consists of inert hardware sets for explosively formed penetrators, conical shaped charges and linear shaped charges, along with tools, equipment, and attachment devices for constructing and emplacing a variety of demolition charges. The kit allows the SOF operator to tailor the demolition charges to the target providing greater lethality and mission flexibility.
- Remote Activated Munitions System. Provides a capability to remotely control detonation of demolition charges or the remote operation of other items of equipment such as beacons, laser markers, radios, and weapons.

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800
<ul style="list-style-type: none"> • Time Delay Firing Device. Provides the SOF operator command and control of hand-emplaced munitions (i.e., influence when and how munitions will be initiated). Capability provided includes time delay and sympathetic initiation of munitions without the use of primary explosives during tactical operations. The elimination of primary explosives is a quantum leap in the safety and reliability of initiation devices. <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> • (2.326) Improved Limpet Mine (ILM). Continued design and test of ILM subsystems. (1QTR99-4QTR99) • (0.874) SOF Demolition Kit (SOFDK). Initiated design, fabrication and testing of a preplanned product improvement warhead. Completed engineering and manufacturing development (EMD) for large warhead. (1QTR99-4QTR99) • (1.148) Remote Activated Munitions System. Completed EMD and testing; conducted Milestone (MS) III review for Type B receiver. (1QTR99-4QTR99) <p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (1.968) ILM. Conduct MS II to enter engineering and manufacturing development (EMD); conduct system integration testing and critical design review. (1QTR00-4QTR00) • (0.524) SOFDK. Continue design, fabrication, and testing of a preplanned product improvement warhead; conduct Milestone (MS) III for large warhead. (1QTR00-4QTR00) • (2.220) Time Delay Firing Device. Initiate design, fabrication, and testing; conduct MS I/II to enter EMD. (1QTR00-4QTR00) 	

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800		

FY 2001 PLAN:

- (2.956) Improved Limpet Mine (ILM). Complete engineering and manufacturing development (EMD) and testing; conduct MS III review for ILM. (1QTR01-4QTR01)
- (3.722) SOF Demolition Kit. Initiate design, fabrication and testing of several preplanned product improvement warheads. Complete EMD and conduct MS III review of a pre-planned product improvement warhead. (1QTR01-4QTR01)
- (5.171) Time Delay Firing Device (TDFD). Continue EMD complete subsystem testing and conduct system integration testing. (1QTR01-4QTR01)

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, Ordnance Acquisition	22.389	15.876	25.978	8.521	8.030	7.307	8.417	Cont.	Cont.

C. Acquisition Strategy:

- ILM. Program managed by Naval Sea Systems Command, PMS 325. Designs will be developed by Naval Surface Warfare Centers.
- TDFD. Program managed by Office of Project Manager for Mines, Countermines and Demolitions, PM-MCD. Designs will be developed by Army research and development centers.

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800											
<ul style="list-style-type: none"> SOF Demolition Kit. Program managed by Office of Project Manager for Mines, Countermine and Demolitions, PM-MCD. Designs will be developed by Army research and development centers. 																
					<u>FY99</u>			<u>FY00</u>			<u>FY01</u>					
<u>D. Schedule Profile</u>					1	2	3	4	1	2	3	4	1	2	3	4
SOF Demolition Kit																
Milestone (MS) III (Large Warhead)																
Pre-Planned Product Improvement (P3I) Warhead Design and Testing																
MS III of a P3I Warhead																
Remote Activated Munitions System																
MS III (Type B Receiver)																
Improved Limpet Mine																
MS I																
MS II																
System Integration Testing/Critical Design Review																
MS III																
Time Delay Firing Device																
MS I/II																
Subsystem Testing/System Integration Testing																

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT / PROJECT S800							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Primary Hardware Dev	ALLOT	VARIOUS		2.436	VARIOUS	2.673	VARIOUS	7.312	VARIOUS	Cont.	Cont.
Subtotal Product Dev				2.436		2.673		7.312		Cont.	Cont.
Remarks: Supports ILM, DK, RAMS, Gunship Ammo and TDFD.											
Development Spt	ALLOT	VARIOUS		0.021	VARIOUS	0.031	VARIOUS	0.085	VARIOUS	Cont.	Cont.
Training Development	ALLOT	VARIOUS		0.100	VARIOUS	0.091	VARIOUS	0.253	VARIOUS	Cont.	Cont.
Integrated Logistics Support	ALLOT	VARIOUS		0.400	VARIOUS	0.432	VARIOUS	1.181	VARIOUS	Cont.	Cont.
Configuration Management	ALLOT	VARIOUS		0.020	VARIOUS	0.031	VARIOUS	0.084	VARIOUS	Cont.	Cont.
Technical Data	ALLOT	VARIOUS		0.021	VARIOUS	0.031	VARIOUS	0.084	VARIOUS	Cont.	Cont.
Subtotal Spt				0.562		0.616		1.687		Cont.	Cont.
Remarks: Supports ILM, DK, RAMS, Gunship Ammo and TDFD.											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT / PROJECT S800							
RDT&E DEFENSE-WIDE / 7				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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Developmental Test & Eval	ALLOT	VARIOUS		0.553	VARIOUS	0.618	VARIOUS	1.688	VARIOUS	Cont.	Cont.
Operational Test & Eval	ALLOT	VARIOUS		0.197	VARIOUS	0.205	VARIOUS	0.562	VARIOUS	Cont.	Cont.
Subtotal T&E				0.750		0.823		2.250		Cont.	Cont.
Remarks: Supports ILM, DK, RAMS, Gunship Ammo and TDFD.											
Contractor Engineering Spt	ALLOT	VARIOUS		0.100	VARIOUS	0.100	VARIOUS	0.100	VARIOUS	Cont.	Cont.
Government Engineering Spt	ALLOT	VARIOUS		0.050	VARIOUS	0.050	VARIOUS	0.050	VARIOUS	Cont.	Cont.
Program Management Spt	ALLOT	VARIOUS		0.400	VARIOUS	0.400	VARIOUS	0.400	VARIOUS	Cont.	Cont.
Travel				0.050	VARIOUS	0.050	VARIOUS	0.050	VARIOUS	Cont.	Cont.
Subtotal Management				0.600		0.600		0.600		Cont.	Cont.
Remarks: Management Support funds PMs for each of the programs executed; since there is more than one program, more than one PM is funded. This is more or less a fixed cost per program. Supports ILM, DK, RAMS, Gunship Ammo and TDFD.											
Total Cost			0.000	4.348		4.712		11.849		Cont.	Cont.
Remarks:											

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100							
COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
SF100, Aviation Systems Advanced Development		4.365	17.372	17.976	47.198	46.598	33.865	37.773	Cont.	Cont.

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-130H Weight Reduction. This program removes weight by redesigning the current 40mm and 105mm ammunition racks using a lighter weight material, rebuilding the 40mm and 105mm trainable gun mounts using lighter weight material, and removing noncritical armor.
- AC-130H Low Light Level TV. This program upgrades/replaces the following high-failure components: AJQ-24 Pedestal, AAQ-7 Laser Illuminator, and AXQ-17 Camera.
- AC-130U Pre-Planned Product Improvement (P3I). Provides correction of system deficiencies and enhancement of mission capabilities for 13 AC-130U Gunships.

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100
<ul style="list-style-type: none"> • Aviation Engineering Analysis. Provides a rapid response capability to support SOF fixed-wing aircraft. The purpose is to correct systems 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, material improvements and service life extensions. • MC-130H Aerial Refueling. This program extends the range of vertical lift aircraft operating in sensitive/denied airspace. Integrates air refueling system into MC-130H 1553 data bus. Includes enlarged paratroop door windows, internal fuel tanks, and non-developmental item aerial refueling pods. • Common Avionics Architecture for Penetration (CAAP). This program initiates development of terrain following/terrain avoidance radar having Low Probability of Intercept/Low Probability of Detection (LPI/LPD) characteristics, and it initiates development of an 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 (EW) data bus to coordinate on-board defensive system response to threats. <p>This project also addresses consolidated technical risk reduction efforts for advanced SOF systems, subsystems and equipment. Such efforts will support substantial life-cycle cost savings via timely cost avoidance and cost savings from common-function/multi-platform subsystems.</p> <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> • (0.455) AC-130H Weight Reduction. Completed engineering management support on prototype ammunition rack and gun mounts. (1QTR99-4QTR99) 	

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100
<ul style="list-style-type: none"> • (3.185) AC-130U Pre-Planned Product Improvement (P3I) (Electronic Warning Upgrade). Began development efforts for replacement of the gunship's ALR-56 radar warning receiver to solve performance problems and increase commonality with other SOF Weapon Systems. (2QTR99) • (0.725) Aviation Engineering Analysis. Continued engineering analysis of SOF fixed wing aircraft avionics and sensors. (1QTR99-4QTR99) <p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (2.809) AC-130U Pre-Planned Product Improvement (P3I) (Studies). Fund studies to solve performance problems and increase commonality with other SOF platforms. (3QTR00) • (1.574) AC-130U P3I (Comm Upgrade). Implement permanent mission enhancement modification and develop corrections for communication management system deficiencies identified during flight test. Also, fund integration of JCS-directed narrowband SATCOM capability. (1QTR00) • (0.548) Aviation Engineering Analysis. Continue engineering analysis of SOF fixed wing aircraft avionics and sensors. (1QTR00-4QTR00) • (5.149) Common Avionics Architecture for Penetration (CAAP). Initiate design/prototyping of the Low Probability of Intercept/Low Probability of Detection (LPI/LPD) Terrain Following/Terrain Avoidance (TF/TA) navigation system on vertical lift aircraft. This effort includes hardware/software architecture design and procuring of hardware for test bed aircraft. (3QTR00) • (7.292) MC-130H Air Refueling. Begin development of paratroop door window group A, feasibility analysis of internal fuel tank(s), and integration of aerial refueling system under Integrated Weapon System Support Program contract. (3QTR00-4QTR00) 	

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FY 2001 PLAN:

- (0.488) AC-130U Pre-Planned Product Improvement (P3I). Begin development of a selectable beam-size laser illuminator for precise location and identification of ground targets for the All Light Level Television. (1QTR01)
- (0.491) Aviation Engineering Analysis. Continue engineering analysis of SOF fixed wing aircraft avionics and sensors. (1QTR01-4QTR01)
- (10.166) Common Avionics Architecture for Penetration (CAAP). Continue design/prototyping of Low Probability of Detection (LPI/LPD)/Terrain Following/Terrain Avoidance (TF/TA) radar and Enhanced Situational Awareness architecture. (2QTR01)
- (6.831) MC-130H Air Refueling. Continue development/integration of aerial refueling system into 1553 data bus, aircraft plumbing and cargo compartment, and begin ground and flight testing. Complete Foreign Comparative Test. (1QTR01-4QTR01)

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, C-130 Mods'	29.097	18.053	19.030	17.807	44.822	36.223	19.951	Cont.	Cont.
PROC,, Aircraft Support					8.123	26.689	56.044	Cont.	Cont.

Includes C-130 Modifications sub-line item funds for AC-130H Low Light Level Television replacement, AC-130U P3I, AC-130H Weight Reduction, MC-130H Air Refueling Modification, and ALR-69 and ALQ-172 antennas; and Aircraft Support sub-line item funds for Common Avionics Architecture for Penetration.

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100
<p>C. <u>Acquisition Strategy:</u></p> <ul style="list-style-type: none"> AC-130U Pre-Planned Product Improvement (P3I) studies. Funds follow-on studies under Integrated Weapon System Support Program associated with reduced total ownership cost initiative. AC-130U P3I, Communications Upgrade. Modify existing off-the-shelf radios to provide narrowband satellite communication capability and correct existing communications deficiencies. AC-130U P3I, All Light Level Television (ALLTV) laser beam shaping. Maximize use of nondevelopmental laser technology to integrate improvements to the laser illuminator. Use Integrated Weapon System Support Program contract. 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. MC-130H Aerial Refueling. Maximize use of nondevelopmental item technology to develop, design, build and test an integrated aerial refueling system via IWSSP contract. The first phase of this program is a Foreign Comparative Test (FCT) of the MK 32B-902E Aerial Refueling POD. The FCT contract includes options to support Engineering, Manufacturing and Development and production installs. 	

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2000											
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100											
					<u>FY99</u>				<u>FY00</u>				<u>FY01</u>			
					1	2	3	4	1	2	3	4	1	2	3	4
<u>D. Schedule Profile</u>																
AC-130 P3I Studies											x					
AC-130U ALR-56 Replacement						x										
MC-130H Aerial Refueling Development Contract Award											x					
MC-130H Aerial Refueling Development/Integration/Test												x		x	x	x
AC-130U Communications Upgrade										x						
AC-130U ALLTV Laser Illuminator Shaping														x		
C-130 CAAP Development Contract Award											x					
C-130 CAAP Hardware/Software Design/Prototyping												x		x	x	x

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT / PROJECT SF100							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Primary Hardware Development											
AC-130U (Equip)	SS/CPAF	Bell/Boeing		3.185	VARIOUS	1.574	OCT 99	0.488	TBD	Cont.	Cont.
CAAP	TBD	TBD				5.149	MAR 00	10.166	TBD	Cont.	Cont.
MC-130 Air Ref (P3I)	VARIOUS	Bell/Boeing				7.292	JUN 00	6.831	MAR 01	Cont.	Cont.
AC-130H Weight Reduction	MIPR	SOFSA, Lexington, KY		0.035	DEC 98						0.035
Subtotal Product Dev				3.220		14.015		17.485		Cont.	Cont.
Remarks:											
Support Costs											
Analyses/Technical Studies	VARIOUS	VARIOUS				0.548	VARIOUS	0.491	VARIOUS	Cont.	Cont.
Engineering/Studies											
AC-130U Gunship	VARIOUS	VARIOUS				2.809	VARIOUS			Cont.	Cont.
MC-130H Air Refueling	MIPR	46TH TW, Hurlburt Fld, FL		0.300	MAY 99					Cont.	Cont.
ALE-47	SS/FFP	Boeing		0.200	APR 99					Cont.	Cont.
Subtotal Spt				0.500		3.357		0.491		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT / PROJECT SF100							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Dev Test & Evaluation											
AC-130H Testing	VARIOUS	VARIOUS		0.135	VARIOUS						0.135
Subtotal T&E				0.135							0.135
Remarks:											
Support											
SAIC (CAAP)	SS/FFP	SAIC, GA		0.225	JAN 99						0.225
SSAI (AC-130H Weight)	SS/FFP	SSAI, GA	0.100	0.265	SEP 99						0.365
Travel (AC-130H Weight)	N/A	WR-ALC, GA	0.010	0.020	N/A						0.030
Subtotal Management			0.110	0.510							0.620
Remarks:											
Total Cost			0.110	4.365		17.372		17.976		Cont.	Cont.
Remarks:											

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)						DATE FEBRUARY 2000				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF200							
COST (Dollars in Millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
SF200, CV-22 SOF Osprey		0	32.179	40.461	39.264	34.324	10.297	19.597	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project 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 imposed by the Department of the Navy and concerns over the technical maturity of parallel acquisition programs. Block 10 consists of integrating Directional Infrared Countermeasures (DIRCM), Troop Commander situational awareness connections, ALE-47 control relocation, 2nd forward firing chaff and flare dispenser, AVR-2A laser detection, AAR-54 warning sensor upgrade, hover couple altitude to 5 feet, and Dual Digital Map. The block 10 Required Assets Available (RAA) are necessary to achieve Initial Operational Capability. Remaining block 10 activity is necessary to achieve Full Operational Capability.

FY 1999 ACCOMPLISHMENTS: N/A

FY 2000 PLAN:

- (22.184) Begin development of RAA block 10 changes. (2QTR00-4QTR00)
- (9.000) Begin DIRCM laser integration. (2QTR00-4QTR00)
- (0.995) Begin program office support for block 10. (1QTR00-4QTR00)

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FY 2001 PLAN:

- (11.948) Continue development of Required Assets Available (RAA) block 10 changes. (1QTR01-4QTR01)
- (23.620) Begin development of post initial operational capability block 10 changes. (1QTR01-4QTR01)
- (0.998) Continue program office support for block 10 program. (1QTR01-4QTR01)
- (3.895) Continue risk reduction for Suite of Integrated Radio Frequency Countermeasures, CV-22 Joint Avionics System Software integration, and cost reduction initiatives for procurement and sustainment. (1QTR01-4QTR01)

B. Other Program Funding Summary

	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, CV-22 SOF Osprey	3.983	3.572	8.533	103.782	127.015	145.553	160.931	202.518	755.887

C. Acquisition Strategy:

- The CV-22 program is managed through 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 will be sent from USSOCOM to PMA-275 to place on contract with the V-22 prime contractor, beginning in FY 2000. The RDT&E funding described will be used to fund block 10 (formerly Pre-Planned

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)	DATE FEBRUARY 2000
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF200
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Product Improvement) development. Block 10 capability is required for initial operational capability. Funding for the baseline CV-22, known as block 0, is embedded in the Navy budget. Block 20 and 30 are essential capability improvements, but are not presently funded.

	<u>FY99</u>				<u>FY00</u>				<u>FY01</u>			
<u>D. Schedule Profile</u>	1	2	3	4	1	2	3	4	1	2	3	4
Block 10 Required Assets Available Development					x	x	x	x	x	x	x	x
Post-Initial Operational Capability Block 10 Development									x	x	x	x

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT / PROJECT SF200							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Primary Hardware Dev	SS/CPAF	NAVAIR/PMA-275				28.689	JAN 00	36.306	NOV 00	Cont.	Cont.
Award Fees						2.495	JAN 00	3.157	NOV 00	Cont.	Cont.
Subtotal Product Dev						31.184		39.463		Cont.	Cont.
Remarks:											
Developmental Test & Eval											
Operational Test & Eval											
Subtotal T&E											
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2000					
APPROPRIATION / BUDGET ACTIVITY				PE 1160404BB SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT / PROJECT SF200							
RDT&E DEFENSE-WIDE / 7											
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 FY99	Award Date FY99	Budget Cost FY00	Award Date FY00	Budget Cost FY01	Award Date FY01	To Complete	Total Program
Contractor Engineering Spt Government Engineering Spt Travel Labor (Research Personnel) Overhead	ALLOT	NAVAIR/PMA-275				0.995	OCT 99	0.998	OCT 00	Cont.	Cont
Subtotal Management						0.995		0.998		Cont.	Cont
Remarks:											
Total Cost											
						32.179		40.461		Cont.	Cont.
Remarks:											