

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE																																								
					FEBRUARY 2008																																								
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160403BB Special Operations Aviation Systems Advanced Development/Project SF100																																										
COST (Dollars in Millions)	FY07	FY08	FY09	FY10	FY11	FY12	FY13	Cost to Complete	Total Cost																																				
PE1160403BB	67.695	55.451	43.977	41.033	42.356	27.848	30.409	Cont.	Cont.																																				
SF100, Special Operations Aviation Systems Advanced Development	67.695	55.451	43.977	41.033	42.356	27.848	30.409	Cont.	Cont.																																				
<p>A. Mission Description and Budget Item Justification: This project provides for the investigation, evaluation, demonstration and integration of current and maturing technologies for Special Operations Forces (SOF)-unique aviation requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in such areas as: Low Probability of Intercept/Low Probability of Detection, Terrain Following/Terrain Avoidance radar; digital terrain elevation data and electronic order of battle; digital maps; enhanced situational awareness; near-real-time intelligence to include data fusion; threat detection and avoidance; electronic support measures for threat geo location and specific emitter identification; navigation, target detection, evaluation of iridium and global positioning technologies, and identification technologies; aerial refueling; and studies for future SOF aircraft requirements such as small-aircraft Gunship Platforms.</p> <p>B. Program Change Summary:</p> <table border="0" style="width: 100%; margin-left: 200px;"> <thead> <tr> <th></th> <th style="text-align: right;"><u>FY07</u></th> <th style="text-align: right;"><u>FY08</u></th> <th style="text-align: right;"><u>FY09</u></th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget</td> <td style="text-align: right;">76.679</td> <td style="text-align: right;">60.750</td> <td style="text-align: right;">51.529</td> </tr> <tr> <td>Current President's Budget</td> <td style="text-align: right;">67.695</td> <td style="text-align: right;">55.451</td> <td style="text-align: right;">43.977</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right;">-8.984</td> <td style="text-align: right;">-5.299</td> <td style="text-align: right;">-7.552</td> </tr> <tr> <td> Congressional Program Reductions</td> <td></td> <td style="text-align: right;">-4.203</td> <td></td> </tr> <tr> <td> Congressional Increases</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Reprogrammings</td> <td style="text-align: right;">8.984</td> <td></td> <td></td> </tr> <tr> <td> Other Program Adjustments</td> <td></td> <td></td> <td style="text-align: right;">-7.552</td> </tr> <tr> <td> SBIR Transfer</td> <td></td> <td style="text-align: right;">-1.096</td> <td></td> </tr> </tbody> </table>											<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	Previous President's Budget	76.679	60.750	51.529	Current President's Budget	67.695	55.451	43.977	Total Adjustments	-8.984	-5.299	-7.552	Congressional Program Reductions		-4.203		Congressional Increases				Reprogrammings	8.984			Other Program Adjustments			-7.552	SBIR Transfer		-1.096	
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160403BB Special Operations Aviation Systems Advanced Development/Project SF100
<p>Funding:</p> <p>FY07: Net decrease (-\$8.984 million) due to decreases to Common Avionics Architecture for Aviation (-\$29.961 million) and Sustaining Engineering (-0.450 million) for higher command requirements, partially offset by increases to Aviation Engineering Analysis (\$21.344 million) and Silent Knight Radar (\$0.083 million).</p> <p>FY08: Net decrease (-\$5.299 million) due to Congressional Mark (-\$3.841 million) and Congressional reduction to include (-\$0.091 million) Section 8097 and Section 8104 (-\$0.271 million). Other program adjustments include transfer to Small Business Innovative Research account (-\$1.096 million).</p> <p>FY09: Net decrease (\$-7.552 million) is due to an adjustment to Silent Knight Radar (\$-7.991 million), an increase for EC-130J support (\$0.500 million), and economic inflation adjustment (\$-0.061 million).</p> <p>Schedule: None.</p> <p>Technical: None.</p>	

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2008
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

Cost (\$ in millions)	FY07	FY08	FY09	FY10	FY11	FY12	FY13
Aviation Sys Adv Dev	67.695	55.451	43.977	41.033	42.356	27.848	30.409
RDT&E Articles Quantity							

A. Mission Description and Budget Item Justification: This project provides for the investigation, evaluation, demonstration, and integration of current and maturing technologies for Special Operations Forces (SOF)-unique aviation requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in such areas as: Low Probability of Intercept/Low Probability of Detection (LPI/LPD) Terrain Following/Terrain Avoidance (TF/TA) radar; digital terrain elevation data and electronic order of battle; digital maps; enhanced situational awareness; near-real-time intelligence to include data fusion, threat detection and avoidance; electronic support measures for threat geolocation and specific emitter identification; navigation, target detection and identification technologies; aerial refueling; and studies for future SOF aircraft requirements such as Gunship-Lite concepts.

- Aviation Engineering Analysis. Provides a rapid response capability to support SOF fixed wing aircraft and unmanned aircraft systems. The purpose is to correct system deficiencies, improve asset life, and enhance mission capability through the means of feasibility studies, analysis of alternatives, pre-developmental risk reduction studies, and engineering analyses. This sub-project provides the engineering required to improve the design and performance integrity of the aircraft support systems, sub-systems, equipment, and embedded computer software as they relate to the maintenance, overhaul, repair, quality assurance, modifications, materiel improvements, and service life extensions. Conduct risk reduction studies, analyses, and demonstrations to support Gunship-Lite Concepts.
- On-Board Enhanced Situational Awareness System (OBESA). This program continues development of OBESA, which consolidates threat data from on and off-board sensors into a single coherent image to the crew. OBESA includes the Below Line-Of-Sight Electronic Support Measures (BLOSESM) processing software. BLOSESM is an advanced receiver system which provides geo-location data on threats that are below the line of sight of the current SOF threat warning systems. The Command decided to defer transition from the Advanced Concepts Technology Demonstrations due to higher command priorities.
- SOF K-band TF/TA Radar. Continues system design and development of a SOF common K-band LPI/LPD radar (Silent Knight Radar) to defeat advanced passive detection threat while maintaining ability to fly safe TF. This radar is targeted for use on all MH-47G Heavy Assault helicopters, MH-60M Blackhawk helicopters, MC-130H Combat Talon II and CV-22 Tilt-Rotor aircraft.
- Iridium-Global Positioning System (I-GPS). Conducts a proof of concept study of I-GPS to evaluate the capability to provide handsets

Exhibit R-2a, RDT&E Project Justification		Date: FEBRUARY 2008
Appropriation/Budget Activity RDT&E BA # 7	Aviation Systems Advance Development/Project SF100	

capable of using signals from iridium and global positioning system satellites to provide anti-jam, positioning, and timing accuracy capabilities.

- EC-130J Commando Solo Upgrades. Provides for new technology development to the EC-130J platform and SOF-unique equipment used to conduct Psychological Operations broadcast missions.

B. Accomplishments/Planned Program

	FY07	FY08	FY09
Aviation Engineering Analysis	28.125	1.578	5.515
RDT&E Articles Quantity			

FY07 Conducted engineering studies and analyses for Fixed Wing aviation SOF unique equipment and missions. Conducted feasibility study and user evaluation of the Viper Strike munition on SOF special mission purpose equipment.

FY08 Continue engineering studies and analyses for Fixed Wing aviation SOF unique equipment and missions.

FY09 Continue engineering studies and analyses for Fixed Wing aviation SOF unique equipment and missions. Conduct risk reduction studies, analyses, and demonstrations to support Gunship-Lite concepts

	FY07	FY08	FY09
On-Board Enhanced Situational Awareness (OBESA)	10.894		
RDT&E Articles Quantity			

FY07 Performed aircraft integration of Below Line-of-Sight Electronic Support Measures (BLOSESM) on MC-130 flight test aircraft. Conducted MC-130 BLOSESM system flight test. Provided BLOSESM system transition documentation to USSOCOM to support OBESA legacy APR-46 system replacement on AC/MC-130 aircraft.

	FY07	FY08	FY09
SOF K-band Terrain Following /Terrain Avoidance (TF/TA) Radar	28.676	43.873	37.965
RDT&E Articles Quantity			

FY07 Awarded contract for SOF common K-band TF/TA radar System Design and Development (SDD). Specific activities include hardware and software development, aircraft integration design, and initiation of developmental test plans for MH-47G Heavy Assault helicopter platform.

FY08 Continue SDD of SOF common K-Band TF/TA radar. Continue hardware and software design and integration and refinement of developmental test plans for MH-47G platform.

FY09 Continues SDD of SOF common K-Band TF/TA radar. Continue hardware and software design and integration and refinement of developmental test plans for MH-47G platform.

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	FY07	FY08	FY09
Iridium-Global Positioning System (I-GPS)		10.000	
RDT&E Articles Quantity			
FY08 Conduct a proof of concept study of I-GPS to evaluate the capability to provide handsets capable of using signals from iridium and global positioning system satellites to provide anti-jam, positioning, and timing accuracy capabilities.			
	FY07	FY08	FY09
EC-130 Upgrades			0.497
RDT&E Articles Quantity			
FY09 Develops upgrades to the EC-130 Commando Solo SOF-unique transmitters and antenna arrays for SOF missions.			

C. Other Program Funding Summary:

	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>	<u>FY12</u>	<u>FY13</u>	To <u>Complete</u>	Total <u>Cost</u>
Proc, C130 Mods	101.268	118.744	47.018	21.386	15.976	24.675	40.328	Cont.	Cont.

D. Acquisition Strategy :

- Aviation Engineering Analysis. Continue engineering analysis activities to correct system deficiencies, improve asset life, analyze alternatives, and enhance mission capability of SOF fixed-wing aircraft and unmanned aircraft systems. Conduct risk reduction studies, analyses, and demonstrations to support Gunship-Lite concepts.
- SOF K-band Terrain Following/Terrain Avoidance Radar. In December 2006, a competitive System Design and Development (SDD) contract was awarded to Raytheon McKinney Company, Dallas TX. The SDD contract is for development of a SOF common radar, integration into an MH-47G Heavy Assault helicopter and system qualification/operational testing. The SDD contract includes a procurement option for six low rate initial production units, and an option for interim contractor support.

Exhibit R-3 RDT&E Project Cost Analysis						DATE: FEBRUARY 2008					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Aviation Systems Advanced Development/PE1160403BB							
RDT&E DEFENSE-WIDE / 7				Aviation Systems Advance Development/SF100							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/ Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY07	Award Date FY07	Budget Cost FY08	Award Date FY08	Budget Cost FY09	Award Date FY09	To Complete	Total Program
Primary Hardware Development											
Terrain Following/Terrain Avoidance (TF/TA) Radar Risk Reduction	CPIF	Raytheon, McKinney TX and Northrop	8.225								8.225
TF/TA Radar System Design & Development	CPIF	Raytheon, McKinney TX		28.676	Dec-06						28.676
MH-47 Prime Mission Product						31.993	Jan-08	22.839	Dec-08		
MH-47 Engineering						5.789	Jan-08	4.215	Dec-08		
On-Board Enhanced Situational Awareness	CPIF	Northrop Grumman, Dayton, Ohio	39.817	10.894	Various						50.711
EC-130J	TBD	TBD						0.497	Dec-08	Cont.	Cont.
Subtotal Product Dev			48.042	39.570		37.782		27.551		Cont.	Cont.
Remarks:											
Development Support											
Engineering/Studies											
Aviation Engineering Analysis	Various	Various	24.020	28.125	Various	1.578	Various	5.515	Various	Cont.	Cont.
Iridium-Global Pos System	TBD	TBD				10.000	Mar-08				10.000
TF/TA Radar											
MH-47 Production Support						6.091	Jan-08	8.025	Dec-08		
Subtotal Spt			24.020	28.125		17.669		13.540		Cont.	Cont.
Remarks:											
Development Test & Evaluation (T&E)											
MH-47 T&E								2.886	Dec-08		
Subtotal T&E								2.886			
Total Cost			72.062	67.695		55.451		43.977		Cont.	Cont.
Remarks:											

