

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes		PE NUMBER AND TITLE 0603774A - Night Vision Systems Advanced Development			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
131 NIGHT VISION SYS A/DEV	2519	2580			5099

A. Mission Description and Budget Item Justification: This program addresses initiatives to develop and transition technologies from the laboratories and industry in order to improve fielded equipment in the current force as well as initiation, development, and engineering/program management support of systems for fielding to the Current, Modular, and Future Forces (FF). 3rd Generation Forward Looking Infrared (3rd Gen FLIR) high performance thermal imaging technology will allow significantly improved ranges for acquisition of enemy forces. A major thrust will be to transition technologies to acquisition programs that meet required, advanced sensor capabilities of the Modular Force, FF, and FCS requirements documents. This will include the ability for sensors to accomplish Advanced Unmanned Aerial Vehicle (UAV) Payload missions, and Close Surveillance Support System (CS3) for 360 degree situational awareness for vehicles. CS3 will allow vehicle occupants to see outside the vehicle in day or night with improved vision. This will allow much improved maneuvering in urban/complex terrain, tracking of friendly soldiers and vehicles, and detection and engagement of dismounted and vehicular threats. Overwatch and other technologies provide for detecting, classifying, and locating weapons based on firing signatures (snipers/hostile fires). Other emerging concepts resulting from ongoing operations will be supported by this program, to include route reconnaissance for road hazards, battle damage assessment including decoy and camouflage detection, detection of threat soldiers carrying Rocket Propelled Grenades (RPGs), and identification of Improvised Explosive Devices (IED) and suicide bombers.

There are no FY 2010 funds.

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B. Program Change Summary

	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	3432	2588	5644
Current BES/President's Budget (FY 2010)	2519	2580	
Total Adjustments	-913	-8	-5644
Congressional Program Reductions	-22	-8	
Congressional Recissions			
Congressional Increases			
Reprogrammings	-891		
SBIR/STTR Transfer			
Adjustments to Budget Years			-5644

Change Summary Explanation: FY08 funds (\$0.891) realigned to higher priority requirements. FY10 funds (\$5.644) realigned to higher priority requirements.

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FY 2009 funding supports continuing UAV Advanced Payloads and Advanced Sensor Fusion efforts as well as emerging concepts for laser imaging, route reconnaissance, battle damage assessment, information on the firing of weapons (counter sniper/fires location and targeting), and detection of personnel with RPGs, IEDs, and suicide bombers.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Emerging Concepts - Explore a range of potential technologies for FCS and the Future Force that will enable route reconnaissance, battle damage assessment, and detection of threats.	480	480	
UAV Advanced Payloads - Technology to sense the presence of personnel and man-made objects to include under natural foliage. Determine feasibility of integrating current processing technology development into Persistent Surveillance capabilities in-theatre and the Extended Range/Multi-Purpose (ER/MP) Program. This includes hyperspectral and laser imaging (Buckeye) for three dimensional display. FY07 Completed phase 1 of 2 phase Hyperspectral Study. FY08/FY09 investigates integration of Buckeye on ER/MP.	756	575	
Close Surveillance Support System (CS3) - Perform concept development and demonstrations for an unimpeded 360 degree view of the immediate area around the vehicle from any crew position for situational awareness and threat detection. Completed efforts in FY07 included system design, vehicle integration assessment, and user demonstration at Fort Benning to support requirement definition for multiple platforms.			
3rd Gen FLIR - Completed Concept and Technology Development for 3rd Gen FLIR, the next generation of advanced primary reconnaissance imaging systems for the Modular and Future Force, to include Future Combat System (FCS). FY07 procured four (4) brassboard prototype B kits for 2QFY07 demonstration and field collections in FCS Common EO Sensor; transitioning to System Development and Demonstration (SDD) in PE 0604710A Project DL70.			
Overwatch - Transition OVERWATCH Advanced Concepts Technology Demonstration (ACTD) technology into current and future			

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4 - Advanced Component Development and Prototypes	0603774A - Night Vision Systems Advanced Development	131
systems applications. FY07 evaluated ACTD completion for potential SDD and completed certification and accreditation of Overwatch software, provided recommendation and working with RDECOM to characterize counter sniper current capabilities and with TRADOC to support future requirements.		
Advanced Sensor Fusion - develop and demonstrate a fused/blended sensor including but not limited to image intensification, day camera, infrared, and multi function laser. These applications are intended for Common Sensor Payload improvements for the ARH-70A, ER/MP, and FCS Class 4, among other platforms. FY08 investigates these capabilities with demonstrations in FY09.	1283	1453
Small Business Innovative Research / Small Business Technology Transfer Program		72
Total	2519	2580

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
PE 0602709A/Night Vision and Electro-Optical Technology	34924	25647	26381	Continuing	Continuing
PE 0603710A/Night Vision Advanced Development	53910	39916	40595	Continuing	Continuing
PE 0604710A/Night Vision Devices Engineering Development	47317	44508	37892	Continuing	Continuing
K38300 LRAS3	158411	210766	178255		678356
G86100 Future Combat System	80932	154583	148028		1061363
BA0330 TUAV	72666	3	258307	Continuing	Continuing
B00302 Advanced TUAV Payloads	42135	141988	162602	Continuing	Continuing
W61900 IAV	248444	231651	197154	Continuing	Continuing
PE 654645 FCS (UGS)				Continuing	Continuing
K31300 DVE	21993			Continuing	Continuing
D15402 Truck Utility Heavy Variant 10000 LB	1397117	946734		Continuing	Continuing
D15900 Truck, Tractor, Line Haul M915A2	84059	9913	45685	Continuing	Continuing
G85100 Stryker Vehicle	959730			Continuing	Continuing
GA0700 M1 Abrams Tank (MOD)	784997	341569	253231	Continuing	Continuing
GA0730 System Enhancement Pgm Sep M1A2				Continuing	Continuing
G80716 Bradley Base Sustainment (M2A2)	92924			Continuing	Continuing
G80717 Bradley Base Sustainment (M2A3)	746542	171989	144813	Continuing	Continuing

Comment:

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131

C. Acquisition Strategy The advances and technology improvements to UAV payloads, and advanced sensor fusion for Common Sensor Payload that will utilize various cost reimbursement development type contracts that were, and will continue to be, competitively awarded using best value source selection procedures.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
4 - Advanced Component Development and Prototypes			0603774A - Night Vision Systems Advanced Development							131		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
UAV Advanced Payloads	T&M, MIPR	Various	1564	641	2Q	475	2Q			Cont.	Cont.	
3rd Gen FLIR	T&M, MIPR	NVESD, Various	5293								3985	
Close Surveillance Support System efforts	T&M	Various	4554								3763	
Emerging Concepts efforts	T&M	Various	2532	360	2Q	360	2Q			Cont.	Cont.	
ATR/ATC Activities	MIPR	Various	966								714	
Uncooled B-Kit Evolution/Development	C/CP, MIPR	ADC, Newington, VA; Various others	4101								4045	
UGS/CLENS	C/CP	TBD	366								183	
Mini SAR Demo	CPFF	Various	1346								673	
Data Comms Package on RAID	T&M	Raytheon	808								404	
Overwatch efforts	MIPR and C/CP	Various	1053								711	
Prior dem val efforts	Various	Various	38265								38265	
Advanced Sensor Fusion efforts	Various	TBD		1055	2-3Q	1258	2-3Q			Cont.	Cont.	
Subtotal:			60848	2056		2093				Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various	2675	261	2Q	306	2Q			Cont.	Cont.	
Engineering Support	T&M	Various	1426								902	
Engineering Support	FFP, T&M	CSC, Falls Church, VA, CACI, MITRE	4093								4093	
Matrix Support	MIPR	CECOM, Fort Monmouth	2000								2000	

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Subtotal:	10194 261 306	Cont. Cont.

Remarks: Historical Engineering Support and Matrix Support at Fort Monmouth was for TSP program, executed by PM SW in this project.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Demos and evals, various programs	MIPR	Various	2676								2676	
TSP Flight demos and assessments	MIPR	APG, MD and EPG, Ft. Huachuca, AZ	1515								1515	
CS3 Demo	MIPR	Various	350								175	
ATR	MIPR	APG	20								10	
UGS/CLENS	MIPR	APG	60								30	
Data Comms Package on RAID Demo	MIPR	Huntsville, AL	130								65	
Uncooled B Kit Eval	MIPR	TBD									90	
3rd Gen FLIR	MIPR	APG	80								40	
UAV Advanced Payloads Eval	MIPR	YPG, AZ	180								180	
Transition Overwatch	MIPR	NVESD	20								20	
Subtotal:			5031								4801	

Remarks: Prior demos and evals were for various programs, including systems transitioned to PEO Soldier management.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management		PM-NV/RSTA, Ft. Belvoir, VA	1590	202	1-4Q	181	1-4Q			Cont.	Cont.	
Subtotal:			1590	202		181				Cont.	Cont.	

Project Total Cost:	77663	2519	2580									
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Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
3rd Gen FLIR efforts								
FOPEN MS B					2Q			
Route Reconnaissance efforts		1Q - 4Q	1Q - 3Q					
Overwatch efforts								
CS3 Efforts								
Laser Imaging Efforts (Buckeye)	1Q - 4Q	1Q - 4Q						
Advanced Sensor Fusion efforts	2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
UAV Advanced Payloads Demo		2Q						
UAV Advanced Payloads efforts	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	