ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		37452	26119	26449	38224	51748	28577	23231	22619	0	278815
L67	SOLDIER NIGHT VISION DEVICES	9964	11658	12864	16815	19362	10186	10179	10173	0	107025
L69	HTI 2D GEN FLIR ED	1623	0	0	0	0	0	0	0	0	0
L70	NIGHT VISION DEV ED	9975	12362	13585	16830	13643	10242	13052	12446	0	108278
L75	PROFILER	3953	0	0	0	0	0	0	0	0	10432
L76	LONG RANGE ADVANCED SCOUT SURVEILLANCE SYSTEM - FS	11937	2099	0	4579	18743	8149	0	0	0	53080

A. Mission Description and Budget Item Justification: This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for U. S. defense forces to engage enemy forces twenty-four hours a day under conditions of degraded visibility due to darkness, adverse weather, battlefield obscurants, foliage and man-made structures. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations. Project L67 focuses on night vision electro-optical, laser, and other target identification and location equipment for a variety of Future Combat System of Systems (FCS) Units of Action/Employment and Future Force soldiers. This project includes the enhanced night vision goggle, modular HTI multi-function laser activities, and thermal upgrades to include an uncooled medium thermal weapon sight. Project L69 focuses on inserting key Horizontal Technology Integration Second Generation and beyond Forward Looking Infrared (FLIR) (HTI SGF) thermal sensor technology into combat and support forces. Project L70 focuses on night vision, reconnaissance, surveillance and target acquisition (RSTA) sensors and suites of sensors to provide well-defined surveillance and targeting capabilities for a variety of Future Combat System of Systems (FCS) Units of Action/Employment and Future Force platforms. This project includes night vision sensor acquisition support of FCS core systems, Risk Reduction Demonstration of standard uncooled thermal sensor packages, Sense Through The Wall programs, Unattended Ground Sensor systems and common sensor message set management for FCS and other applications. The project also supports upgrades to existing ground surveillance radars and preparation for production of lightweight countermortar radars. Project L75 focuses on the development of Profiler, an upgrade to the capabilities of the current AN/TMQ-41 Meteorological Measuring Set. Profiler will employ remote and local sensing of the atmosphere, mesoscale modeling and enhanced computing capabilities to provide more accurate meteorological data and for the first time accurate target area meteorological data. These enhancements and new capabilities will increase the lethality of field artillery systems such as Multiple Launched Rocket System (MLRS) and towed and self-propelled cannons. Project DL76 focuses on the addition of a Laser Designation Module (LDM) to the LRAS3 that will increase the operational capability and survivability of Combat Observation Lasing (COLT) and Fire Support (FIST) teams. The resulting target acquisition common sensor will yield greater lethality from precision and area munitions through precise target location and designation. Upgrades developed under this project will be inserted through ongoing production contracts.

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	24693	33561	34951
Current Budget (FY 2006/2007 PB)	26119	26449	38224
Total Adjustments	1426	-7112	3273
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions	-728		
Congressional Increases	2550		
Reprogrammings			
SBIR/STTR Transfer	-396		
Adjustments to Budget Years		-7112	3273

FY 2005 Congressional increase of $2.55M for Multiplatform Replacement Sight (MRS).

FY2006/2007 funds were realigned funds to/for HQDA higher priority efforts.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604□10A - Night Vision Systems - Eng Dev**	**L6□**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L67	SOLDIER NIGHT VISION DEVICES	9964	11658	12864	16815	19362	10186	10179	10173	0	107025

A. Mission Description and Budget Item Justification: This project develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensors suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in "around-the-clock" combat operations. It focuses on technology that can bring an immediate improvement to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier day/night situational awareness and individual targeting capability. DL67 provides development money to integrate improved target location and self-location capability to eliminate friendly fire incidents. The Enhanced Night Vision Goggle (ENVG) will be a head/helmet mounted night vision system for the individual Soldier. The system will use both image intensifier and uncooled thermal technology to provide a multi-spectral image to the Soldier. Other efforts include a miniaturized laser designating system for a variety of ground Soldier systems, small Unmanned Aerial Vehicle (UAV), and other air platforms and the development of Sense Through The Wall (STTW) technology giving Soldiers the ability to detect threats through walls during Military Operations on Urban Terrain (MOUT).

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue development of next generation optical Enhanced Night Vision Goggles (ENVG) and in FY06 initiate development of digital ENVG. The ENVG will provide Soldiers the ability to use both image intensifier and uncooled thermal technologies during day, night, and obscured battlefield conditions.	4365	7622	7592	5053
Complete development of the Small Tactical Optical Rifle Mounted (STORM) micro-Laser Range Finder (mLRF), which will provide Soldiers the ability to perform target location while using individual weapons.	1282	1997	0	0
Complete Thermal Upgrade activities (prototype test and evaluation), which enhanced the combat effectiveness of Thermal Weapon Sight (TWS) Heavy/Medium/Light systems.	914	300	0	0
Completed the development of TALON (Target Acquisition Laser Observation Night) prototypes, yielding a hand held laser target locator with integrated thermal imager.	1821	0	0	0
Continue to improve target location error and begin development of a non-magnetic compass for the Lightweight Laser Designation Rangefinder (LLDR) and an ultra lightweight designator(ULD) to reduce size and weight of the current laser designator module (LDM).	1582	1539	2943	3213
Initiate development of the Dismounted Optics, which will yield a miniature laser target locator with thermal capabilities and improved target location error for the individual Soldier.	0	0	0	2713

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Initiate development of Sense Through The Wall technology (STTW), which provides dismounted Soldiers with the capability to detect, located and identify threats through walls during Military Operations on Urban Terrain (MOUT).	0	0	711	2112
Accelerate the development of the Fused Multi-Spectral Weapon Sight (FMWS), which is a passive fused electro-optical sight for Special Operations Forces.	0	0	718	2112
Initiate the development, testing and evaluation of Focal Plane Arrays (FPA) with improved sensitivity and range.	0	0	400	1112
Initiate the development and evaluation of day color camera as a replacement for direct view optics in handheld targeting devices.	0	200	0	0
Initiate the development of anti-sniper capabilities.	0	0	500	500
Totals	9964	11658	12864	16815

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
AN/PVS-7 Aid (K36400) OPA2	82673	76906	76886	101494	171303	153782	117766	61460	Continuing	Continuing
Thermal Weapon Sight (TWS) (K22900) OPA2	177385	53712	83692	92349	103922	72778	61678	61743	Continuing	Continuing
Lightweight Laser Designator Rangefinder (LLDR) (K31100) OPA2	11778	12092	12720	20325	34070	38897	56568	56628	Continuing	Continuing
Infrared Aiming Light (K35000) OPA2	8568	12518	14634	14612	19890	4549	6168	6174	Continuing	Continuing
AN/PVS-6 MELIOS (B53800) OPA2	116946	0	42882	4480	0	0	0	0	Continuing	Continuing

C. Acquisition Strategy: The various developmental programs in this project will continue to exercise competitively awarded contracts using best value source selection procedures.

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

PROJECT
L6□

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Enhanced NVG Analysis and Design	C/FP	Various	4507	5459	1-2Q	5767	2Q	4290	1-2Q	Continue	20023	0
b . STORM micro-Laser Range Finder Activity	C/FP	DRS - Torrence, CA / Insight Technologies - Londonderry, NH	615	1043	1-2Q	0		0		0	1658	0
c . Thermal Upgrades for TWS	C/FP	DRS/Nytech - Santa Ana, CA / BAE - Lexington, MA	695	300	1Q	0		0		Continue	995	0
d . Light Forward Observers Optics Activity	C/FP	Performance Learning (GSA) Alexandria, VA	130	0		0		0		Continue	130	0
e . Focal Plane Arrays Activity	C/FP	Various	1500	0		400	1-2Q	500	1-2Q	Continue	2400	0
f . Laser Target Locator Activity	C/FP	Northrop Grumman-Litton - Apopka, FL	2014	0		0		1600	1-2Q	Continue	3614	0
g . Ultra Lightweight Designator Development Activity	C/FP	Fibertek - Herndon, VA	1582	1469	1Q	1950	1-2Q	1600	1-2Q	Continue	6601	0
h . Sense Through The Wall (STTW) Activity	C/FP	TBD	0	0		570	1-2Q	1101	1-2Q	Continue	1671	0
i . Fused Electro-Optical Weapon Sight Development	C/FP	TBD	0	0		476	1-2Q	1088	1-2Q	Continue	1564	0

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

PROJECT
L6□

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Image Intensification Sensors Development	C/FP	Intevac - Santa Clara, CA	485	0		0		0		0	485	0
k . Anti-Sniper Capabilities Development	C/FP	TBD	0	0		400	1-2Q	500		Continue	900	0
Subtotal:			11528	8271		9563		10679		Continue	40041	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various	230	149	2Q	626	1-2Q	439	1-2Q	Continue	1444	0
Subtotal:			230	149		626		439		Continue	1444	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Government Test Support Activity	MIPR	Various	3754	2827	1Q	2450	1-2Q	5461	1-2Q	Continue	14492	0
Subtotal:			3754	2827		2450		5461		Continue	14492	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	MIPR	PM Sensors and Lasers	276	411	1-4Q	225	1-2Q	236	1-2Q	Continue	1148	0
Subtotal:			276	411		225		236		Continue	1148	0

Project Total Cost:			15788	11658		12864		16815		Continue	57125	0

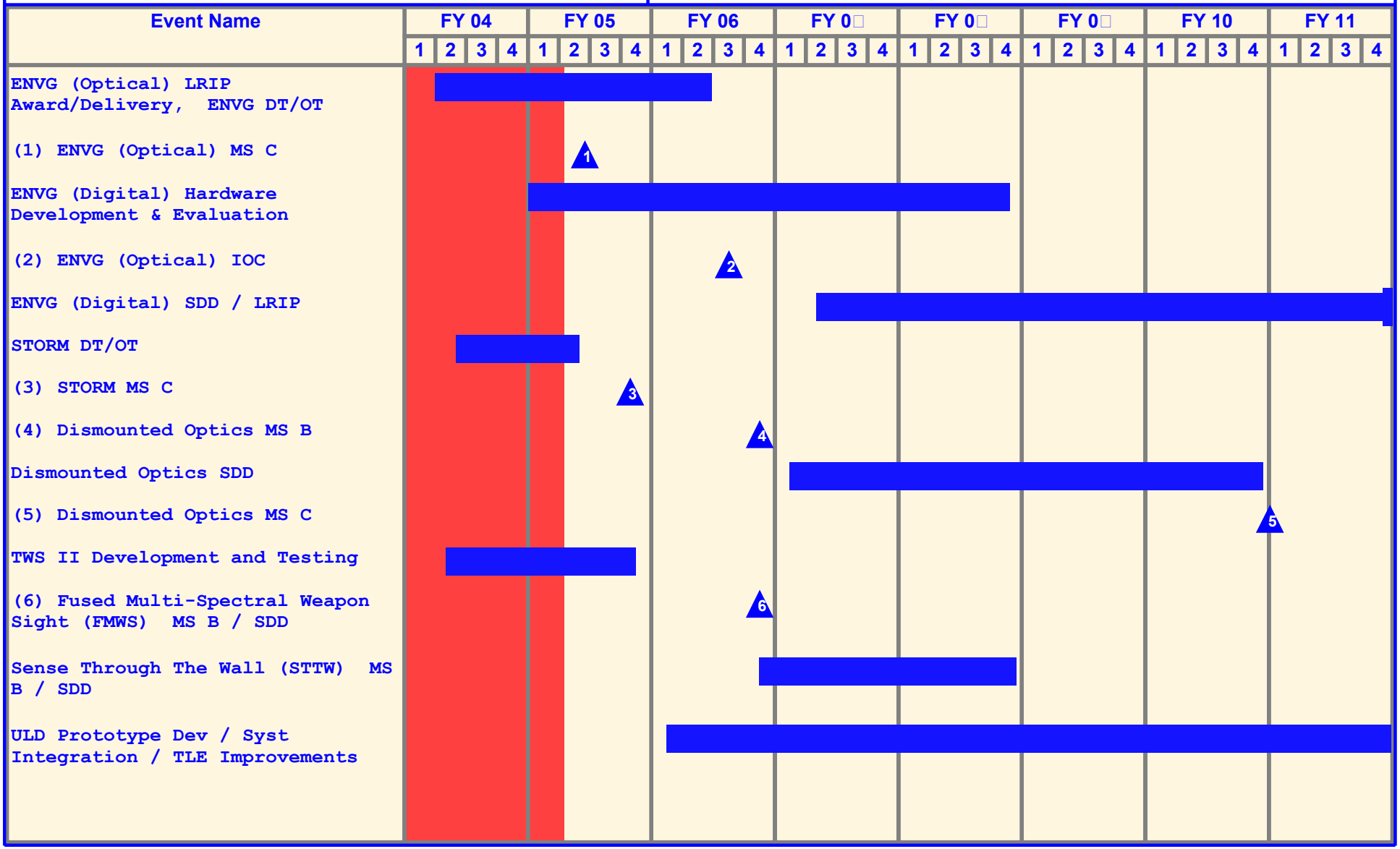
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

PROJECT
L6□



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

PROJECT
L6□

Schedule Detail	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Enhanced Night Vision Goggles (ENVG) Optical Development.	1-4Q	1-4Q	1-3Q	1-4Q	1-4Q			
ENVG Digital System Development and Demonstration / LRIP				2-4Q	1-4Q	1-4Q	1-4Q	1-2Q
Development of the Small Tactical Optical Ranging Module (STORM).	1-4Q	1-3Q						
Thermal Upgrade target location display capability demonstration and TWS II Testing.	2-3Q	1-4Q						
Target Aquisition and Laser Designators Development and Testing Acitivies.			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1Q
Fused Multi-Spectral Weapon Sight (FMWS)			3-4Q	1-4Q				
Through The Wall (STTW) Technology Development			3-4Q	1-4Q	1-4Q			
Ultra Lightweight Designator Prototype Development and Integration.	1-3Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604□10A - Night Vision Systems - Eng Dev**	**L□0**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L70	NIGHT VISION DEV ED	9975	12362	13585	16830	13643	10242	13052	12446	0	108278

A. Mission Description and Budget Item Justification: This project performs System Development and Demonstration (SDD) on high performance night vision, reconnaissance, surveillance, and target acquisition (RSTA) systems and other related systems that allow forces to locate and track enemy units in day, night, and all battlefield conditions, and through natural and man-made structures and obscurants. It also develops and integrates suites of these sensors to provide well-defined surveillance and targeting capabilities, as well as architectures for these sensors to communicate automatically. The focus is on meeting the requisite night vision and RSTA capabilities required for evolving Future Combat System-of-Systems (FCS), and Future Force Unit of Action/Unit of Employment systems. Efforts will continue to refine a standard architecture among sensors with the Sensor Link Protocol (evolving to a joint message set called Sensor Data Link) to allow these sensors to communicate in a plug and play manner for improved force level sensor data fusion, aided target recognition and target hand-off.

This project will also demonstrate the producibility of interchangeable uncooled thermal focal plane arrays, and develop an uncooled infrared imaging B-Kit sensor family that will result in standardized sensor modules for a variety of applications. By eliminating the requirement for cryogenic coolers, uncooled thermal imagers are inherently smaller, lighter, more reliable, use less power, and are less expensive. Uncooled B-Kits can be used for a variety of FCS and Future Force systems such as weapon sights, driver's viewers/situational awareness aids, missile seeker sensors, unattended ground sensors/security sensors, and unmanned ground and aerial vehicle payloads.

This project develops, demonstrates and tests Sense Through the Wall (STTW) technology in support of Future Combat System. This will leverage earlier technology base efforts for an Unmanned and Limited Stand-Off capability of detecting personnel and weapons through a wall.

This project continues Unattended Ground Sensors (UGS) hardware development, demonstration and test for a family of UGS systems for Intelligence, Surveillance and Reconnaissance (ISR). This will provide FCS and the Army an Unattended Ground Sensor capability for ISR and physical security.

This project transitions Cost Effective Targeting System (CETS) from an ATD under NVESD. CETS provides long range target identification without the expense of a high performance thermal imager. Using an uncooled long wave IR thermal imager for search and target detection, an eyesafe laser illuminates the target for a short wave IR gated camera to capture a "picture" which can be displayed or processed by an ATR. CETS can be applied to Unmanned Ground Vehicles, manned vehicles and dismounted systems.

FY2006/2007 funding supports: continuation of Uncooled B-kit, Unattended Ground Sensor and UAV EOIR/LD Payloads developments; transitions STTW technology and a UGV Imaging payload (CETS) to SDD; and spirals in RSTA technologies from FCS into the current force, and maintenance of Sensor Link Protocol.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue Sensor Link Protocol (SLP) as part of the DoD Joint Variable Message Format (JVMF) standard while maintaining configuration management and modifying application software tools. Sensor Link Protocol (SLP)/Sensor Architecture – A uniform and standard means of describing and coordinating the collection, preprocessing, communication, and fusion of RSTA functions for the Future Force and FCS. Two man-year effort in FY04/05 will complete initial JVMF acceptance and provide SLP maintenance.	340	435	340	340
Continue development of the uncooled thermal B-Kit for platform sensors, navigation systems and target acquisition devices. Uncooled B-Kit – Development of a standard uncooled thermal detector B-kit to extend night vision capability across many platforms with interchangeable parts, lower cost, power, weight and volume. This effort is the risk reduction demonstration for B-Kit development on FCS and Future Force Systems.	1524	3087	3553	2396
Unattended Ground Sensors (UGS) – Develop ISR, CBRN and Urban UGS for FCS and other Army customers. Funds continuing spiral technology integration efforts.	2495	1250	2085	1930
Cooled IR Integrated Sensor Suites (CIRISS). Provide System Development and Demonstration acquisition and technical support to PM FCS on primary night vision, reconnaissance, surveillance, and target acquisition sensor suites. FY06 and FY07 support the "Spiral-Out" of RSTA capabilities from FCS to improve Current Force capabilities.	1351	0	1944	1422
Development of payloads for the Army's Unmanned Air Vehicle (UAV) in accordance with TRADOC priorities and in support of Future Combat System (FCS).	1941	3996	2927	1978
Lightweight Counter Mortar Radar (LCMR) - support preparation for MS decision	212	0	0	0
Ground Moving Target Indicator (GMTI) Radar - complete productization and testing of improved performance radar. Improvements include reduced size and weight, material updates, and operational mode expansion.	2112	754	0	0
Sense Thru The Wall (STTW) Stand-Off/Unmanned - Transition STTW technology from D131, applying it to Unmanned Vehicle applications to provide a Stand-off Sense-Through-The-Wall capability.	0	366	683	3886
Unattended Ground Vehicle Payloads (CETS) Transition the Cost Effective Targeting System (CETS) from the NVESD Advanced Technology Demonstration, applying it to Unmanned Ground Vehicle payload requirements.	0	0	2053	4878
Multi Platform Replacement Sight (MRS)	0	2474	0	0
Totals	9975	12362	13585	16830

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Night Vision DVE K31300 OPA2	9720	8361	19996	24703	33031	25721	0	0	0	121532
Future Combat System, G86100 WTCV	0	225289	829206	1638022	3562240	2918987	989250	3169577	Continuing	Continuing
Advanced TUAV Payloads B00302 OPA2	0	0	0	35226	37852	19662	25000	33000	Continuing	Continuing

C. Acquisition Strategy: The development programs in this project are currently based on competitive awards and under cost reimbursement type contracts.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DVE Development	C/CPIF	Various	21831	0		0		0		0	21831	21831
b . Modular HTI Multifunction Laser Activities	C/CP	Insight Technologies, Londonderry, NH & DRS Technologies, Torrence, CA	3868	0		0		0		0	3868	3868
c . LLDR RAPT	C/CP	Various	4253	0		0		0		0	4253	4253
d . Light Forward Observer Optics	C/CP	Various	1258	0		0		0		0	1258	1258
e . Thermal Upgrades for DVE (Dual wavelength) and competition	C/CP	Kaiser Electric San Diego, CA, Various	3608	0		0		0		0	3608	3608
f . LLDR Advanced Demonstration System	C/CP	Litton Laser, Apopka, FL	2556	0		0		0		0	2556	2556
g . Sensor Architecture/Digital RSTA/SLP	C/CPIF & C/CP	Various	10753	340	1Q	335	1Q	340	1Q	Continue	11768	Continue
h . Various Prototypes and Studies	C/CPIF	Various	2947	0		0		0		0	2947	2947
i . Thermal Upgrades for TWS (target location)	C/CP	Raytheon, El Segundo, CA, Various	5811	0		0		0		0	5811	5811

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . HTI Laser Trade Studies	C/CP	Various	1020	0		0		0		0	1020	1020
k . Enhanced NVG Analysis & Design (TX to DL67)	C/CP	Various	4782	0		0		0		Continue	Continue	Continue
l . HTI Laser MFS3 design and prototype activities	C/CPIF	Raytheon, Dallas,TX	565	0		0		0		0	565	565
m . MANTECH Focal Plane Array and optics	C/CP	Raytheon, Dallas, TX	1500	0		0		0		0	1500	1500
n . Digital MELIOS Design & Fabrication	C/FP	Litton Lasers, Inc.	1000	0		0		0		0	1000	1000
o . SBIR/STTR			0	366		0		0		0	366	266
p . AN/TMQ-41 Trade Studies and related activities	C/CP	Various	1232	0		0		0		0	1232	1232
q . Image Fusion for DVE	C/CP	Raytheon, Dallas, TX	1274	0		0		0		0	1274	1274
r . Digital RSTA SDD	C/CP	Booz-Allen Hamilton, Tysons Conner, VA	2190	0		0		0		0	2190	2190
s . CIRISS Efforts	C/CP	Various	1500	0		1689	2Q	873	1Q	0	4062	1500

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
t . LLDR Vehicle applications	C/CP	Litton Laser, Apopka, FL Various	3487	0		0		0		0	3487	3487
u . FLIR develop/integrate	Various	Various	1731	0		0		0		0	1731	1731
v . Uncooled B-Kit	Various	Various	1555	3087	2-3Q	2345		1544	1Q	Continue	8531	Continue
w . EO/IR/LD UAV Payloads	C/CP	TBS	1783	3693	1Q	2397	1Q	1562	1Q	Continue	9435	Continue
x . LLDR EMD	C/CP	Litton Lasers, Apopka, FL	19873	0		0		0		0	19873	19873
y . GMTI Radar	C/FP & CP	General Atomics	1712	750	2-3Q	0		0		0	2462	1712
z . UGS	CP/FFP	Various	708	0		0		0		0	708	708
aa. FCS UGS / UGS Spiral	C/CP	FCS Boeing/Textron	3375	0		1536	2Q	1288	2Q	Continue	6199	Continue
bb. STTW Stand-Off/Unmanned	C/CP	TBS	0	0		468	3Q	3446	1Q	Continue	3914	0
cc. UGV Payloads (CETS)	C/CP	TBS	0	0		1671	2Q	4207	1-4Q	Continue	5878	0
dd. MRS Efforts			0	2474	2-3Q	0		0		0	2474	0
Subtotal:			106172	10710		10441		13260		Continue	Continue	Continue

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various	14341	1007	1Q	1927	1Q	1873	1Q	Continue	19148	Continue
Subtotal:			14341	1007		1927		1873		Continue	19148	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . DT/IOT&E*	MIPR	ATEC	8769	0		0		0		0	8769	8769
b . Other Test Support*	MIPR	Various	4366	350	2Q	692	3Q	1223	2Q	Continue	6631	Continue
Subtotal:			13135	350		692		1223		Continue	15400	Continue

Remarks: * Includes TWS, DVE, LLDR and other sensor test and evaluation activities

ARMY RDT&E COST ANALYSIS(R3)

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5 - System Development and Demonstration

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0604□10A - Night Vision Systems - Eng Dev

PROJECT
L□0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In house support	PM, NV/RSTA, Fort Belvoir, VA & Ft. Monmouth, NJ	4628	295	1-4Q	525	1-4Q	474	1-4Q	Continue	5922	Continue
Subtotal:			4628	295		525		474		Continue	5922	Continue
Project Total Cost:			138276	12362		13585		16830		Continue	Continue	Continue

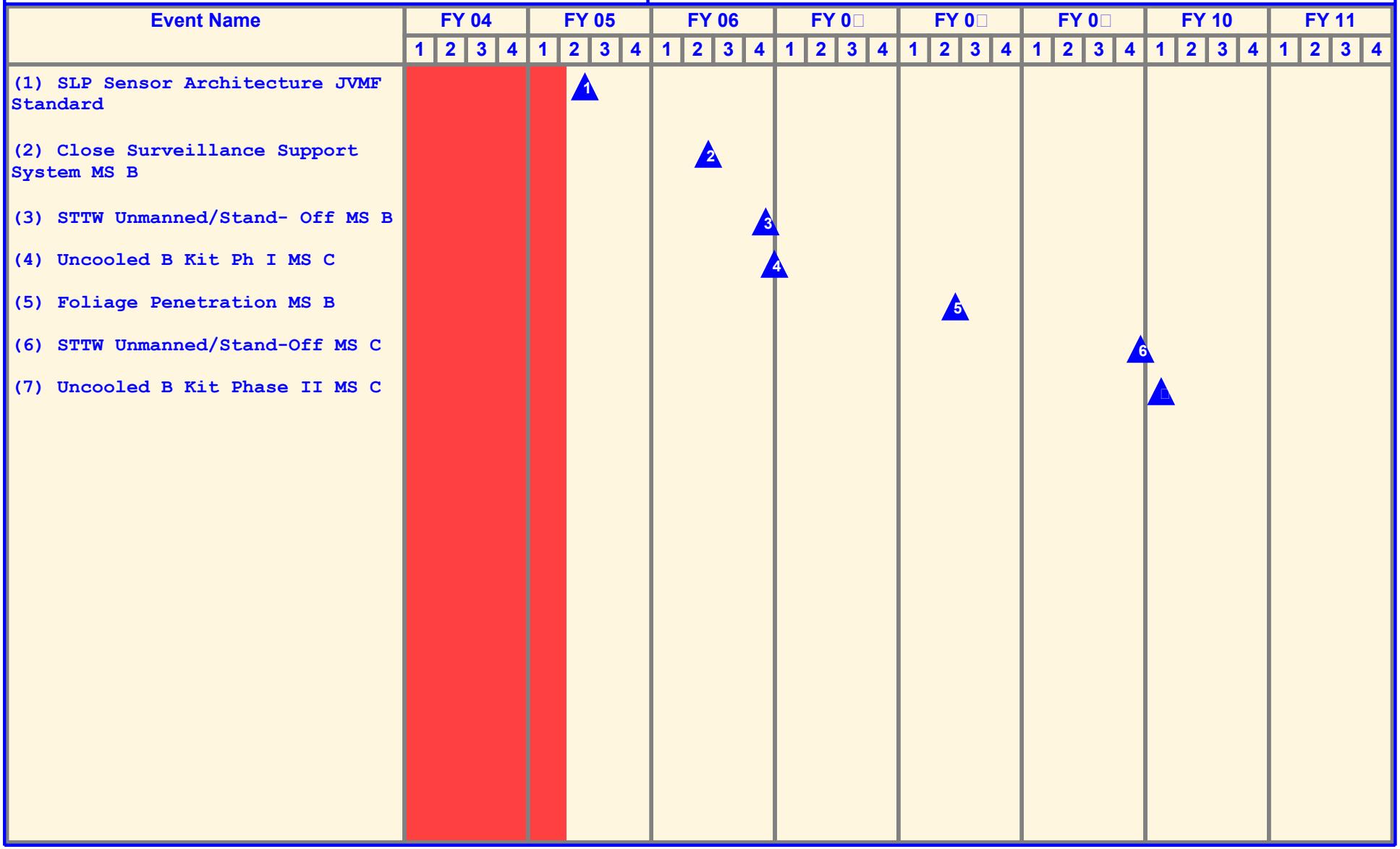
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

PROJECT
L□0



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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Schedule Detail	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Sensor Link Protocol (SLP) Architecture - JVMF		2Q						
Uncooled B-Kit MS B	2Q							
Uncooled B-Kit SDD Phase I		2-4Q	1-4Q					
Uncooled B-Kit MS C			4Q					
Uncooled B-Kit SDD Phase II				2-4Q	1-4Q	1-4Q		
Uncooled B-Kit MS C							1Q	
Foliage Penetration (FOPEN) MS B for FCS Block II					2Q			
FOPEN SDD					2-4Q	1-4Q		
Close Surveillance Support System MS B			2Q					
Close Surveillance Support System SDD			2-4Q	1-2Q				
Sense Through the Wall (STTW) MS B			4Q					
Sense Through the Wall (STTW) SDD				1-4Q	1-4Q	1-4Q		
Sense Through the Wall (STTW) MS C						4Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604□10A - Night Vision Systems - Eng Dev**	**L□5**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L75 PROFILER	3953	0	0	0	0	0	0	0	0	10432

A. Mission Description and Budget Item Justification: The AN/TMQ-52 Meteorological Measuring Set-Profiler (MMS-P) is a replacement for the current Meteorological Measuring Set (MMS), AN/TMQ-41. Profiler uses a suite of meteorological (MET) sensors and MET data from communication satellites along with an advanced weather model to provide highly accurate met data out to a range of 500km. Currently, MMS data regardless of its' staleness is considered accurate only to 20km from balloon launch site and cannot provide target area MET data. Profiler provides all weather conditions affecting munitions including information on wind speed, wind direction, temperature, pressure, relative humidity, rate of precipitation, visibility, and cloud ceiling height needed for precision targeting and terminal guidance. By providing more accurate MET messages, Profiler will enable the artillery to have a greater probability of a first round hit with indirect fire systems than is achievable with the current MMS. The new capabilities will increase the lethality of field artillery systems such as Multiple Launch Rocket Systems, towed and self-propelled cannons. This effort will increase the accuracy of a wide range of deep fire weapons and munitions.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Performed Software Qualification Testing. Conducted successful Milestone C Decision Review. Completed MMS-P SDD development effort, including software and hardware integration, and fabrication of four units for contractor testing.	1811	0	0	0
Completed System Functional Demonstration.	0	0	0	0
Conduct Developmental Test (DT) for system meteorological accuracy.	570	0	0	0
Conduct Initial Operational Test & Evaluation (IOT&E) activities.	1500	0	0	0
Undistributed Congressional Adjustments	72	0	0	0
Totals	3953	0	0	0

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Profiler K27900	12054	7412	4869	1639	0	0	0	0	0	25974
MMS-P AD3255	617	452	334	403	0	0	0	0	0	1806

C. Acquisition Strategy: The Profiler program awarded a competitive Cost Plus Incentive Fee (CPIF) contract in Sep 00 to Smiths Detection (formerly ETG) for the development of four System Development and Demonstration (SDD) units. The contract included Firm Fixed Price production options. A Milestone C approval for LRIP was granted in May 03. Upon successful Reliability testing, an additional LRIP award was made in Jan 04. The Full Rate Production decision is scheduled for 1QFY05.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604□10A - Night Vision Systems - Eng Dev**	**L□6**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L76	LONG RANGE ADVANCED SCOUT SURVEILLANCE SYSTEM - FS	11937	2099	0	4579	18743	8149	0	0	0	53080

A. Mission Description and Budget Item Justification: The Army's mounted Fire Support and Combat Observation Lasing Teams (COLT) require a day/night targeting sensor that can detect, observe, and pinpoint the locations of threats for attack. The sensor must be able to determine the precise target location of the target and digitally transfer this information, or laser designate the target for precision engagement by laser-guided munitions.

This target acquisition common sensor system will combine the long-range surveillance and targeting capabilities of the Army's Long Range Advanced Scout Surveillance System (LRAS3) with the laser designation capabilities of the Lightweight Laser Designator Rangefinder's Laser Designation Module (LDM). RDT&E funding is required to integrate the physical, electronic and data interfaces of the LRAS3 and LDM, as well as to integrate the system to the physical, electronic and data interfaces of the Stryker Brigade Combat Team (SBCT) Fire Support Vehicle's and Knight's M707 Mission Equipment Package. In addition to the design activities, sufficient prototype systems will be produced to support testing and other pre-production activities. The system significantly increases the observation and target engagement capabilities over that provided by the current first generation equipment, AN/TAS-4 Night Sight and Ground/Vehicular Laser Locator Designator (G/VLLD).

FY2007 begins P3I on laser designator integration, under armor/remote mast mounting of sensor and 3rd Gen FLIR integration.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Design the modifications necessary to integrate the LDM with the LRAS3.	2116	0	0	0
Fabricate eight prototype sensors, using borrowed GFE.	708	0	0	0
Conduct contractor prototype qualifications.	274	0	0	0
Conduct system/platform Integration and Test (I&T).	1107	0	0	0
Conduct Government Development Test and User Excursion.	75	0	0	0
Perform Logistics Support and Logistics Demonstration.	496	0	0	0
Conduct Qualification Validation Test and implement corrective actions.	325	842	0	0
Design A-Kit for Multi-Platform Replacement Sight (MRS).	2819	0	0	0
Fabricate 8 prototypes of A-Kit and B-Kit for MRS	1727	0	0	0

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Integrate and Test MRS prototypes	859	0	0	0
MRS Vehicle Integration	574	60	0	0
Government Vehicle Testing for MRS.	857	1197	0	0
Design Laser Designator function into LRAS3 Housing	0	0	0	2620
Fabricate 4 prototypes	0	0	0	1959
Totals	11937	2099	0	4579

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
LRAS3 K38300 OPA2	50470	48155	42293	1777	0	0	0	0	0	142695

C. Acquisition Strategy: The development of the Fire Support Sensor System has been executed through a Cost Plus Fixed Fee (CPFF) modification to the LRAS3 Fixed Price production contract. The development effort will lead to a production implementation through an Engineering Change Proposal (ECP) and Fixed Price adjustments. This ECP will then be applied to the LRAS3, M707 Knight, and Stryker BCT (FSV) programs.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . FS3 Development	SS/T&M	Raytheon Inc., McKinney TX	2346	0		0		0		0	2346	2346
b . FS3 Development	SS/CPFF	Raytheon Inc., McKinney, TX	7380	0		0		0		0	7380	5478
c . FS3 Development	SS/FFP	Raytheon, Inc., McKinney, TX	1312	742	1Q	0		0		0	2054	3198
d . SBIR/STTR			0	60		0		0		0	60	0
e . Multi-Platform Replacement Sight (MRS)	SS/CPFF	Penn State Univ EOC, PA	6028	564	3Q	0		0		0	6592	0
f . LRAS3 Laser Designator Integration	C/CPFF	TBD	0	0		0		3848	2Q	26400	30248	0
Subtotal:			17066	1366		0		3848		26400	48680	11022

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
L□6

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	NVESD, CECOM, Other	1083	125	1Q	0		281	1Q	0	1489	0
Subtotal:			1083	125		0		281		0	1489	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Planning and Preparation	MIPR	ATEC	50	0		0		0		0	50	0
b . Government Development and Operational Tests	MIPR	ATEC	165	0		0		0		0	165	0
c . Government Developmental Test for MRS	MIPR	RTTC	0	408		0		0		0	408	0
Subtotal:			215	408		0		0		0	623	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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PROJECT
L□6

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In House	PM NV/RSTA, Fort Belvoir VA	1755	200	1Q	0		450	1Q	492	2897	0
Subtotal:			1755	200		0		450		492	2897	0
Project Total Cost:			20119	2099		0		4579		26892	53689	11022

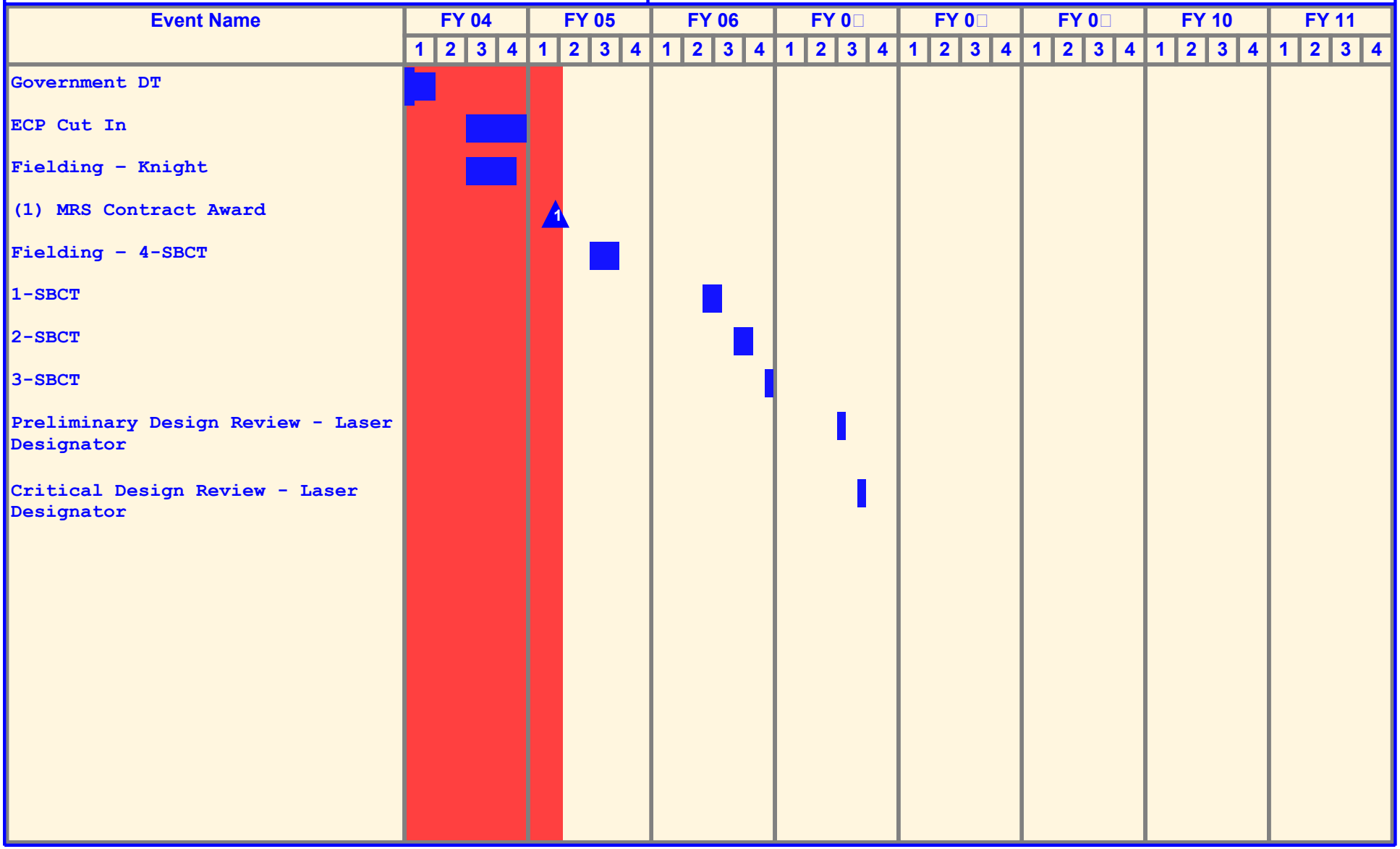
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□10A - Night Vision Systems - Eng Dev

PROJECT
L□6



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604□10A - Night Vision Systems - Eng Dev**	**L□6**

Schedule Detail	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Validation testing and implement corrective actions	4Q	1-4Q						
Fielding - 4th SBCT		3Q						
MRS Prototype Fabrication Activities		1-2Q						
Vehicle Integration of MRS		3-4Q						
MRS Government Vehicle Testing		3-4Q						
Design Activities for LRAS3 Laser Designator				1-3Q				
Laser Designator Product Development				2-4Q	1-4Q	1-3Q		
Government Qualification Testing						3-4Q		
Laser Designator ECP cut in						4Q		