ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**

	COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	2870086	2956921							Continuing	Continuing
F52	FCS- RECON PLATFORMS & SENSORS	50692	26360							Continuing	Continuing
F53	FCS- UNMANNED GROUND VEHICLES (UGV)	121528	106516							Continuing	Continuing
F54	UNATTENDED SENSORS	31242	10612							Continuing	Continuing
F55	SUSTAINMENT	139389	106517							Continuing	Continuing
F57	MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing
F61	S o S Engineering and Program Management	2027766	2142970							Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army's Future Combat System (Brigade Combat Team) (FCS (BCT)) is a joint system of systems consisting of a network and a combination of manned and unmanned systems that use an advanced network architecture to enable levels of joint connectivity, situational awareness and understanding, and synchronized operations previously unachievable. It is designed to interact with and enhance the Army's most valuable weapon - the Soldier. When fully operational, FCS will provide the Army and the joint force unprecedented capability to see the enemy, engage him on our terms, and defeat him on the 21st Century battlefield. The Army's first modernization effort in nearly four decades; FCS is the embodiment of the modular force, a modular system designed for "full spectrum" operations. It will network existing systems, systems already under development and future systems to be developed to meet the requirements of the Army's Future Force. It is adaptable to traditional warfare as well as complex, irregular warfare in various rural and urban terrains. It can also be adapted to civil support, such as disaster relief. FCS is the #1 priority acquisition program for the Army.

This Future Combat System(FCS) project covers all air platforms (Class I, Class II, Class III, and Class IV) and includes contractor development, engineering, prototype procurement and integration, test, and assembly. The UAVs are the eyes, the ears and the gun sights of the BCT.

The Class I Unmanned Aerial Vehicle (UAV) provides the dismounted soldier Reconnaissance, Surveillance, and Target Acquisition (RSTA). It has the ability to hover and stare at military operations on rural and urban terrain. The Class I senses and provides imaging to recognize personnel, day and night. It provides targeting information to the FCS network during day and night operations and in adverse weather from 500 feet. Weighing less than 30 pounds, the air vehicle operates in complex urban and rural terrains with a vertical take-off and landing capability. It is carried in a standard MOLLE and is air droppable with the soldier. As part of the POM process the Army has decided to include a Laser Designator Sensor on the Class I UAV.

The Class II Unmanned Aerial Vehicle (UAV) will be a vehicle-carried system that provides Line-of-Sight (LOS), Non-Line of Sight (NLOS) and Beyond Line of Sight (BLOS) capabilities, including enhanced dedicated imagery. The distinguishing capability of this UAV is target designation in day, night, and adverse weather. The Class II weights 112 pounds dry and does not require an airfield. The Class II Unmanned Aerial Vehicle (UAV) is carried on the MGV and is capable of being lifted by two Soldiers, has a 16 km radius of action, and can remain aloft for two hours.

Due to fiscal budget constraints, the Class II effort was terminated at the beginning of FY07 and the requirement has been made objective.

The Class III Unmanned Aerial Vehicle (UAV) is a multifunction aerial system that has the range and endurance to support battalion level RSTA within the Brigade Combat Team (BCT) battle space. It provides the capabilities of the Class I and Class II, but at longer ranges and higher altitudes, in addition to communications relay, mine detection, Chemical, Biological, Radiological and Nuclear detection, and meteorological survey. The Class III vehicle has a payload of up to 215 pounds and can be lifted by two soldiers. Based on Army decisions related to Budget Constraints in the (FY08-13 POM), the Class II and Class III UAV's will be deferred from the FCS(BCT) in FY07 and become objective requirements.

The Class IV Unmanned Aerial Vehicle (UAV) has a range and endurance appropriate for the brigade mission. It supports the Brigade Combat Team (BCT) Commander with communications relay, long endurance persistent stare, and wide area surveillance over 75km radius. Unique missions include dedicated manned and unmanned teaming (MUM) with manned aviation; Emitter Mapping; Wide Band Communications Relay across 150-175 km; and standoff Chemical Biological Radiological, Nuclear, and Energy (CBRNE) detection with on-board processing. Additionally, it has the payloads to enhance the RSTA capability by cross-cueing multiple sensors. It operates at survivable altitudes at standoff range at day and night and during adverse weather. Like the Class III, the Class IV must be able to take-off and land without a dedicated air field. The Class IV vehicle weighs about 1800 pounds and has a setup time of 30 minutes.

The FY07 funding reflected in these R-Forms does not contain FY07 SBIR/STTR reduction of $83,210 million.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**

B. Program Change Summary	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	2745716	3310477	3282408	3118477
Current BES/President's Budget (FY 2008/2009)	2870086	2956921		
Total Adjustments	124370	-353556	-3282408	-3118477
Congressional Program Reductions		-337135		
Congressional Rescissions				
Congressional Increases		5300		
Reprogrammings	124370	-21721		
SBIR/STTR Transfer				
Adjustments to Budget Years			-3282408	-3118477

Change Summary Explanation: Funding - FY 2007: The above reprogramming has not yet occurred, but is reflected in the Army's budget database. At present, the Army does not intend to use actual appropriated funds in 0604645A as an offset for a reprogramming action, therefore, the program will be executing to a funding level of $2,895.5 million for the FY07 program year. The following R2s and R3s reflect the current database position.

FY 08 & 09: Program restructured per Congressional direction -- funds moved to 0604660A, FCS Manned Ground Vehicles & Common Ground Vehicle; 0604661A, FCS Systems of Systems Engineering & Program Development; 0604662A, FCS Reconnaissance Platforms; 0604663A, FCS Unmanned Ground Vehicles; 0604664A, FCS Unattended Ground Sensors; 0604665A, FCS Sustainment & Training R&D; and 0604666A, Modular Brigade Enhancement (Spin Off).

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2007
BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**

Funding in $000

Program	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Other Termination		547500						
Special Termination		427600						
Total Termination Liability Funding:		975100						

Remarks:

The SDD Contract contains FAR 52.232-22, Limitation of Funds, and FAR 52.249-6, Termination (Cost-Reimbursement) clauses to define allowable termination costs. The above costs are estimated to cover contract performance and termination liability incurred. Special Termination Cost (STC) clause is approved and included in LSI's FAR contract. STC are not included in the program budget. If the contract is terminated, the government will pay for the following prime and subcontractor costs:

- Severance Pay, as provided in FAR 31.205-6(g)
- Reasonable costs continuing after termination, as provided in FAR 31.205-42(b)
- Settlement of expenses, as provided in FAR 31.205-42(g), and
- Costs of return of field service personnel from sites, as provided in FAR 31.205-35 and FAR 31.205-46(c)

Other termination is currently not covered by the Government. Therefore, due to Limitation of Funds clause in the FAR, the LSI must retain funding to cover the full other termination costs in case of termination. Those costs governed by FAR part 31 include prime and subcontractor costs for:

- Allowable Fee
- Cost incurred, but not billed to the FAR contract
- Non-cancelable commitments
- Unexpired leases
- Alteration/restorations required by leases
- Loss of useful value of capital property

Full termination liability is a combination of the above Special Termination Cost and Other Termination Costs.

IAW Section 214 of the FY2006 National Defense Authorization Act, projects in this PE will be converted to a stand alone Program Elements commencing with the FY2008 President's Budget submission to Congress. Concurrently, Termination Liability for those PEs will be contained in PE 0604661A Project FC2.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F52**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
F52	FCS- RECON PLATFORMS & SENSORS	50692	26360							Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army's Future Combat System (Brigade Combat Team) (FCS (BCT)) is a joint system of systems consisting of a network and a combination of manned and unmanned systems that use an advanced network architecture to enable levels of joint connectivity, situational awareness and understanding, and synchronized operations previously unachievable. It is designed to interact with and enhance the Army's most valuable weapon - the Soldier. When fully operational, FCS will provide the Army and the joint force unprecedented capability to see the enemy, engage him on our terms, and defeat him on the 21st Century battlefield. The Army's first modernization effort in nearly four decades; FCS is the embodiment of the modular force, a modular system designed for "full spectrum" operations. It will network existing systems, systems already under development and future systems to be developed to meet the requirements of the Army's Future Force. It is adaptable to traditional warfare as well as complex, irregular warfare in various rural and urban terrains. It can also be adapted to civil support, such as disaster relief. FCS is the #1 priority acquisition program for the Army.

This Future Combat System(FCS) project covers all air platforms (Class I, Class II, Class III, and Class IV) and includes contractor development, engineering, prototype procurement and integration, test, and assembly. The UAVs are the eyes, the ears and the gun sights of the BCT.

The Class I Unmanned Aerial Vehicle (UAV) provides the dismounted soldier Reconnaissance, Surveillance, and Target Acquisition (RSTA). It has the ability to hover and stare at military operations on rural and urban terrain. The Class I senses and provides imaging to recognize personnel, day and night. It provides targeting information to the FCS network during day and night operations and in adverse weather from 500 feet. Weighing less than 30 pounds, the air vehicle operates in complex urban and rural terrains with a vertical take-off and landing capability. It is carried in a standard MOLLE and is air droppable with the soldier. As part of the POM process the Army has decided to include a Laser Designator Sensor on the Class I UAV.

The Class II Unmanned Aerial Vehicle (UAV) will be a vehicle-carried system that provides Line-of-Sight (LOS), Non-Line of Sight (NLOS) and Beyond Line of Sight (BLOS) capabilities, including enhanced dedicated imagery. The distinguishing capability of this UAV is target designation in day, night, and adverse weather. The Class II weights 112 pounds dry and does not require an airfield. The Class II Unmanned Aerial Vehicle (UAV) is carried on the MGV and is capable of being lifted by two Soldiers, has a 16 km radius of action, and can remain aloft for two hours. Due to Fiscal budget constraints, the Class II effort was terminated at the beginning of FY07 and the requirement has been made objective.

The Class III Unmanned Aerial Vehicle (UAV) is a multifunction aerial system that has the range and endurance to support battalion level RSTA within the Brigade Combat Team (BCT) battle space. It provides the capabilities of the Class I and Class II, but at longer ranges and higher altitudes, in addition to communications relay, mine detection, Chemical, Biological, Radiological and Nuclear detection, and meteorological survey. The Class III vehicle has a payload of up to 215 pounds and can be lifted by two soldiers. Due to Fiscal budget constraints, the Class III effort was terminated at the beginning of FY07 and the requirement has been made objective.

The Class IV Unmanned Aerial Vehicle (UAV) has a range and endurance appropriate for the brigade mission. It supports the Brigade Combat Team (BCT) Commander with communications relay, long endurance persistent stare, and wide area surveillance over 75km radius. Unique missions include dedicated manned and unmanned teaming (MUM)

with manned aviation; Emitter Mapping; Wide Band Communications Relay across 150-175 km; and standoff Chemical Biological Radiological, Nuclear, and Energy (CBRNE) detection with on-board processing. Additionally, it has the payloads to enhance the RSTA capability by cross-cueing multiple sensors. It operates at survivable altitudes at standoff range at day and night and during adverse weather. Like the Class III, the Class IV must be able to take-off and land without a dedicated air field. The Class IV vehicle weighs about 1800 pounds and has a setup time of 30 minutes.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
UAV CLASS I - FY06 - Complete systems engineering contract, with Honeywell, for the maturation of the DARPA MAV into the FCS Class I system. Baseline FCS Class I UAVS Prime Item Development Specification (PIDS).Award SDD Contract in 3Q FY06 to begin FCS Class I UAVS design.Completed Platform-Unique System Functional Review (SFR) to demonstrate convergence on and achievability of the system requirements and readiness to initiate system design. Initiated design efforts to ensure a successful PDR in May FY07. Completed baseline system and software architectures. Completed baseline system risk assessment. Completed initial Interface Control Documents (ICDs) for internal and external interfaces.FY07- Obtain soldier feedback from lessons learned and experimentation and test at the 25th ID, in accordance with Congressional Direction. to demonstrate Technical Readiness Level -7 (w/25th ID) by 1Q 2007. Complete system Preliminary Design Review to verify that functional allocations, detailed performance specifications, processes and plans are defined and initial detailed design is ready to be initiated. Complete baseline hardware and software configuration item specifications. Begin prototype hardware procurement. Initiate delivery and integration of hardware sub-systems and avionics to Honeywell's production facility. Complete system and software architectures and requirements. Complete initial validation and verification plan. Provide hardware to participate in Experiment 1.1 and document experiment results of operation of the MAV system utilizing a JTRS surrogate (SLICE) radio link and the SRW waveform. Co-Deliver Class I simulation to SoSIL. Co-Begin Micro Air Vehicle (MAV) SIL integration. Begin software Build 2 simulation.	5027	11673		
UAV CLASS II - FY06- Request for Proposals to downselect to the Phase 2 contractors was completed, but due to Army decision to defer the Class II UAV, contracts for the Phase II effort were never executed.	5605			
UAV CLASS III - FY06 - Request for Proposals to downselect to the Phase 2 contractors was completed, but due to Army constaints in the FY08-13 POM, a decision was made to defer the Class III UAV. Therefore, contracts for the Phase II effort were never executed.	16112			
UAV CLASS IV -FY06 - 1. Component level testing conducted through vendors. 2. Landing Gear Drop Test begun in cooperation with the US Navy. 3. Rotor Hub Fatigue Test begun in cooperation with US Navy. Testing should conclude by mid-FY07. FY07 - 1. Landing Gear Drop Test will be completed. 2. Rotor Hub Fatigue Test will be completed. 3. Cooperative E3 Testing with the US Navy will be conducted. 4. Vendor level component and subsystem delta testing for E3 and Temperature will begin and conclude in FY08.Definitize Class IV PIDS Requirements with Vehicle Integrator based on PIDS Updates. NGC (Pkg 1) Contract MOD. Complete Phase 1 air vehicle assembly for first 2 Air Vehicles at Moss Point, MS, less FCS-unique avionics/payloads. Schweizer Aircraft expected early delivery of 5th and 6th airframes with propulsion systems to Northrop Grumman. Provide a platform simulation engineering release to the FCS SoSIL. Continue Modeling and Simulation and software development and integration. Continue initial build software development.	17550	13946		
GFX - ASTAMIDS Sensors - FY 06. Army Airborne Standoff Minefield Detection System (ASTAMIDS) and RSTA Sensors in FY06 only. Integration of RSTA Sensors with the current Army ASTAIMIDS program to support Integrated Verification testing. This combining of sensors will decrease overall weight while allowing the platform to carry an additional sensor. Based on the agreed to FCS Work Breakdown Structure (WBS),beginning in FY07, all sensor costs are included in the Network hardware development leg of the WBS and,therefore, are included in SoS Engineering and Program Management project.	6398			

Small Business Innovative Research/Small Business Technology Transfer Programs		741		
Total	50692	26360		

B. Other Program Funding Summary	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
0604660A FCS Manned Grd Vehicles & Common Grd Vehicle Components			696333	772458	791186	361201	215665	103885	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management			1589466	1407410	1888349	1929853	1299062	1034307	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms			41164	34220	14398	9301	4587	1344	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles			90667	96666	65206	43912	27038	3603	Continuing	Continuing
0604664A FCS Unattended Ground Sensors			10999	12942	19103	16874			Continuing	Continuing
0604665A FCS Network Hardware & Software			678781	536387	336471	367894	292770	170602	Continuing	Continuing
0604646A Non Line of Sight - Launch System	216668	320650	253410	199064	40329	6000			Continuing	Continuing
0604647A Non Line of Sight - Cannon	132223	110998	137802	89189	71906	43531	28971		Continuing	Continuing
0604666A FCS Spin Outs			64796	32442	65000	50000	50000	10000	Continuing	Continuing
0603639A FCS MRM			44578	45733	71961	56698	107077	51079	Continuing	Continuing
0604715A STRICOM/NAWCTSD Support			381	391	401	409	418	429	Continuing	Continuing
WTCV G86100 FCS Core Program			79483	155838	149367	683788	2194625	5795292	Continuing	Continuing
WTCV G86200 FCS Spin Out Program			20123	172746	373790	557060	779742	958060	Continuing	Continuing
0604645 F52 UAV Recon & Sensors	50692	26360							Continuing	Continuing
0604645 F53 UGV	121528	106516							Continuing	Continuing
0604645 F54 UGS	31242	10612							Continuing	Continuing
0604645 F55 SUSTAINMENT	139389	106517							Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing
0604645 F61 SoS Engineering and Program management	2027766	2142970							Continuing	Continuing

Comment:

C. Acquisition Strategy Fiscally constrained Budgets, coupled with the fiscal challenge to meet the Army_s reset and modernization requirements, have caused the Army to

implement FCS program adjustments. These adjustments maintain the Army_s focus on FCS-equipped Brigade Combat Team development and minimize the efforts on operational requirements. The adjustments to the FCS Program acquisition strategy fall into the following categories:

1. Defer the following platforms from the FCS(BCT): ARV-A, ARV-RSTA, UAV Class II, UAV Class III
2. Refine the schedules for the development of the Core and Spin Out capabilities so that the Army can benefit from the savings realized with concurrent testing.
3. Increase the rate of fielding of FCS technologies to the current force.
4. Fully fund the Spin Out technology Insertion program and development and fielding of the Mid-Range Munitions (MRM) and Advanced Kinetic Energy (AKE) munitions.
5. Revise platform configurations to decrease the production cost of a single Core FCS BCT from $6.2 billion to $5.9 billion (FY03 Constant dollars) by deferring/deleting selected sensors and other associate hardware (such as the XM307 machine gun).

The following is a history of the LSI SDD Contract.

	Contract Award	Definitization Date
Original Contract Award	30 May 2003	10 Dec 2003
Modified for POM 06-11 Changes	6 Aug 2004	2 Mar 2005
Conversion to FAR Base Contract	23 Sep 2005	28 Mar 2006
Modification for POM 8-13 Adjustments	Feb 2007	May 2007

The R forms are based on estimated effects of the Army adjustment. Upon completion of negotiation of the contract modification, caused by this adjustment, reprogramming actions may be required to realign the funding buckets to the contract.

Termination Liability associated with this contract is included in PE 0604645 Project F61.

IAW Section 214 of the FY2006 National Defense Authorization Act, this project was converted to a stand alone Program Element (0604662A Project FC3) commencing with the FY2008 President's Budget submission to Congress.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F52

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CLASS I	OTA	THE BOEING CO., ST LOUIS, MO SEE REMARK 1	5087	5027	1Q	12044	1Q						22158	
CLASS II	OTA	THE BOEING CO., ST LOUIS, MO SEE REMARK 4, 7	348	5605	4Q								5953	
CLASS III	OTA	THE BOEING CO., ST LOUIS, MO SEE REMARK 4, 5, 6, 7	338	16112	4Q								16450	
CLASS IV	OTA	THE BOEING CO., ST LOUIS, MO SEE REMARK 2	60355	17549	1Q	14316	1Q						92220	
Subtotal:			66128	44293		26360							136781	

Remarks: Remark 1: Subcontractor: Honeywell,- Albuquerque, New Mexico
Remark 2: Subcontractor: Northrop Grumman Systems Corp.- San Diego, CA
Remark 4: Subcontractor: Piasecki Aircraft Corporation - Essington, PA
Remark 5: Subcontractor: Teledyne Brown Engineering - Huntsville, AL
Remark 6: Subcontractor: AAI Corporation - Hunt Valley, MD
Remark 7: Class II and Class III Phase 2 contracts terminated due to POM 08-13 decisions.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Government GFX ASTAIMIDS, RSTA Sensor, Firescout	Direct	PM FCS (BCT) , St. Louis, MO	17596	6399	1Q								23995	
Subtotal:			17596	6399									23995	

Remarks: All support costs for this project are included in F61 SoS Engineering and Program Management project.

III. Test And Evaluation	Contract Method &	Performing Activity & Location	Total PYs	FY 2006 Cost	FY 2006 Award	FY 2007 Cost	FY 2007 Award	FY 2008 Cost	FY 2008 Award	FY 2009 Cost	FY 2009 Award	Cost To Complet	Total Cost	Target Value of

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F52**

	Type		Cost		Date		Date		Date		Date	e		Contract
Subtotal:														

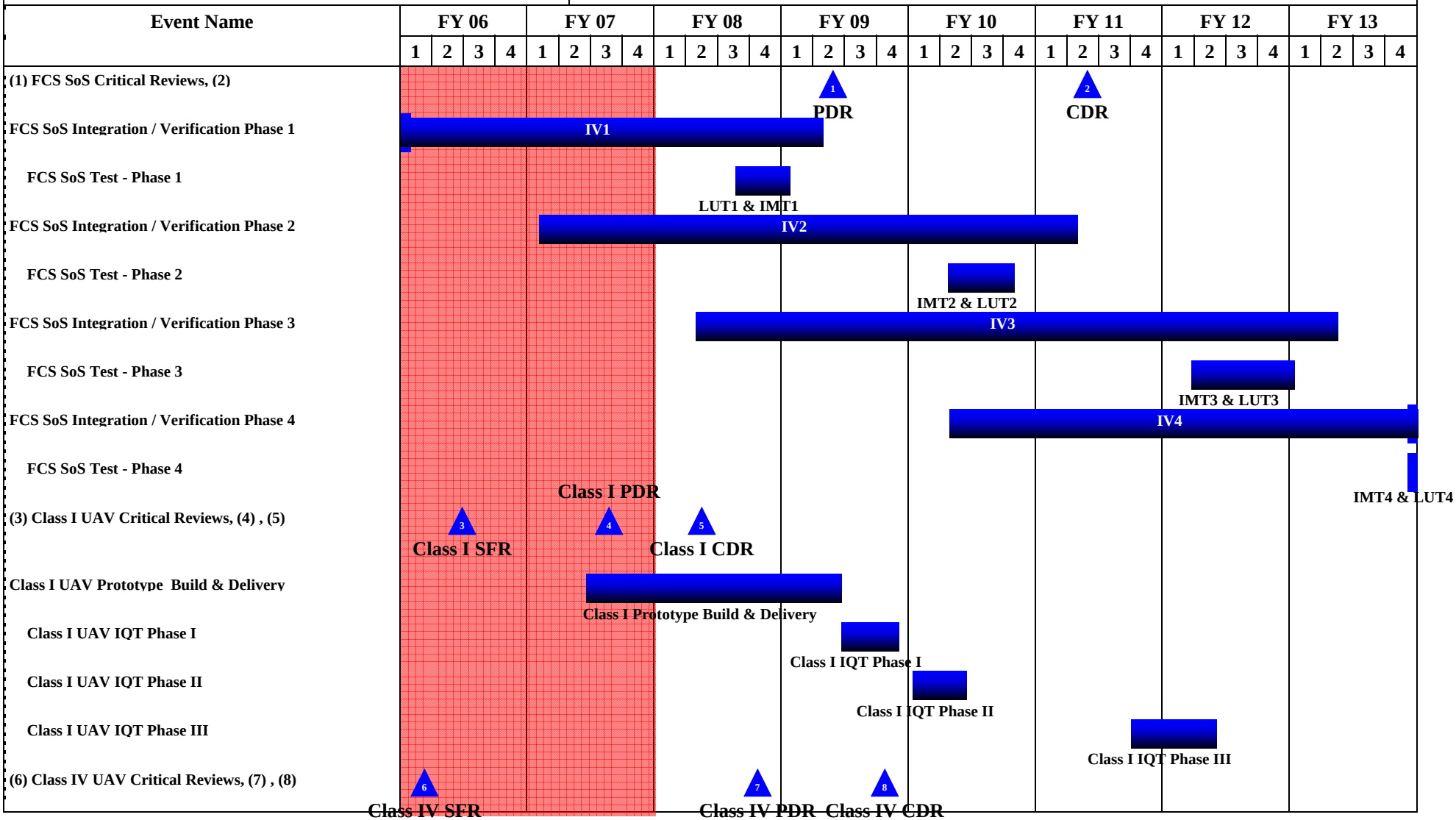
Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														
Project Total Cost:			**83724**	**50692**		**26360**							**160776**	

Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F52**



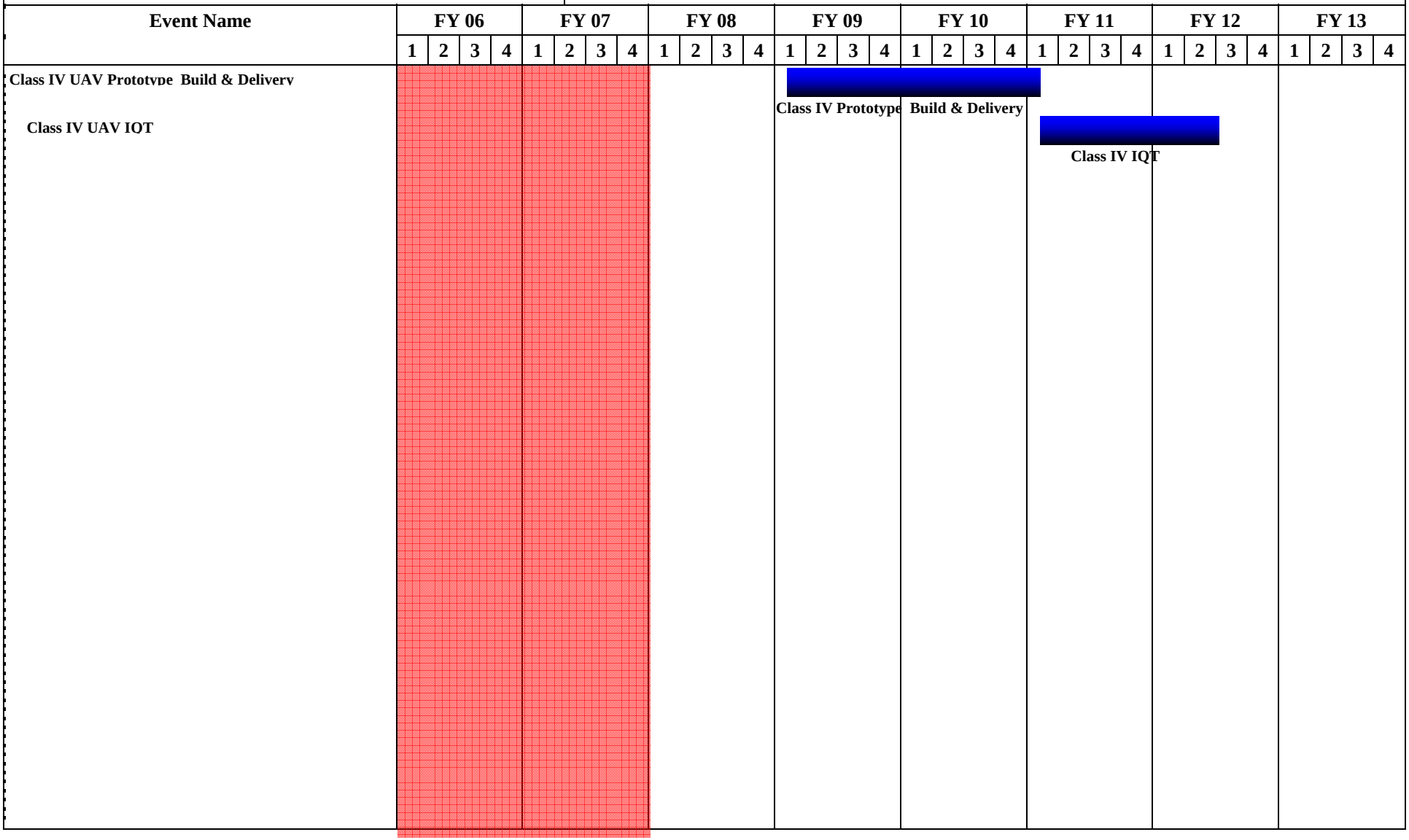
Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F52



Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F52

Schedule Detail	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FCS SoS Critical Reviews				2Q				
						2Q		
FCS SoS Integration / Verification Phase 1	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
FCS SoS Test - Phase 1			3Q - 4Q	1Q				
FCS SoS Integration / Verification Phase 2		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q		
FCS SoS Test - Phase 2					2Q - 4Q			
FCS SoS Integration / Verification Phase 3			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
FCS SoS Test - Phase 3							1Q - 4Q	1Q
FCS SoS Integration / Verification Phase 4					2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
FCS SoS Test - Phase 4								4Q
Class I UAV Critical Reviews	2Q							
		3Q						
			2Q					
Class I UAV Prototype Build & Delivery		2Q - 4Q	1Q - 4Q	1Q - 2Q				
Class I UAV IQT Phase I				2Q - 4Q				
Class I UAV IQT Phase II					1Q - 2Q			
Class I UAV IQT Phase III						3Q - 4Q	1Q - 2Q	
Class IV UAV Critical Reviews	1Q							
			4Q					
				4Q				
Class IV UAV Prototype Build & Delivery				1Q - 4Q	1Q - 4Q	1Q		
Class IV UAV IQT						1Q - 4Q	1Q - 2Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F53**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
F53	FCS- UNMANNED GROUND VEHICLES (UGV)	121528	106516							Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army's Future Combat System (Brigade Combat Team) (FCS (BCT)) is a joint system of systems consisting of a network and a combination of manned and unmanned systems that use an advanced network architecture to enable levels of joint connectivity, situational awareness and understanding, and synchronized operations previously unachievable. It is designed to interact with and enhance the Army's most valuable weapon - the Soldier. When fully operational, FCS will provide the Army and the joint force unprecedented capability to see the enemy, engage him on our terms, and defeat him on the 21st Century battlefield. It is adaptable to traditional warfare as well as complex, irregular warfare in various rural and urban terrains. FCS is the #1 priority acquisition program for the Army.

This FCS project includes contractor developmental and engineering efforts for requirement analysis, specification development, and detail design packages for integration of common and mission equipped Unmanned Ground Vehicles. Also included are subsystem prototypes, models, and/or simulations to support development, tests, and demonstrations. Unmanned platforms include: Armed Robotic Vehicles-Reconnaissance (ARV-RSTA) and ARV-Assault (ARV-A), Small Unmanned Ground Vehicle (SUGV), Multi-function Utility/Logistics Equipment-Transport (MULE-T), MULE-Countermine (CM), and ARV-Assault Light (ARV-A-L). In addition to the UGV platforms, this project includes the development of the hardware and software for the Autonomous Navigation System (ANS) required for operation of the UGVs and leader-follower capability for the Manned Ground Vehicles (MGV).

Small Unmanned Ground Vehicle (SUGV)
The Small Unmanned Ground Vehicle (SUGV) is a small, lightweight, manportable, DC powered UGV capable of conducting military operations in urban terrain tunnels, sewers, and caves. The SUGV enables the performance of manpower intensive or high-risk functions (i.e. urban Intelligence, Surveillance, and Reconnaissance (ISR) missions, chemical/Toxic Industrial Chemicals/Toxic Industrial Materials, reconnaissance, etc.) without exposing soldiers directly to the hazard. Weighing less than 30 pounds, it is capable of carrying up to six pounds of payload weight. The SUGV will have the following capabilities: tether payload, manipulator arm, CBRN capabilities and the potential for integrating future technologies for Sense Through the Wall and Mine/UXO/IED detection ability. The SUGV can operate up to six hours on a single charge.

Multifunctional Utility/Logistics and Equipment (MULE) Vehicle is a 2.5-ton Unmanned Ground Vehicle (UGV) that will support dismounted operations. It is comprised by the integration of four major components: Common Mobility platform, Autonomous Navigation System (ANS), Centralized Controller (CC) and three mission equipment packages/variants. The MULE platform's centerpiece is the common mobility platform providing superior mobility built around an articulated suspension system to negotiate obstacles and gaps that a dismounted squad might encounter. The MULE has three variants sharing the common mobility chassis: Transport, Countermine and the Armed Robotic Vehicle (ARV)-Assault-Light (ARV-A-L). The Transport MULE (MULE-T) will carry 1,900-2,400 pounds of equipment and rucksacks for dismounted infantry squads with the mobility needed to follow squads in complex terrain. The Countermine MULE (MULE-CM) will provide the capability to detect, mark and neutralize individual anti-tank mines by integrating a mine detection mission equipment package from the Ground Standoff Mine Detection System (GSTAMIDS) program to support force mobility. The ARV-Assault-Light (ARV-A-L) is a mobility platform with an integrated weapons and target acquisition package to support the dismounted infantry's efforts to locate and destroy enemy platforms and positions. The ARV-A-L includes the M240 machine gun, JAVELIN missile and medium range EOIR sensors to engage and destroy the enemy in dismounted operations. The MULE platforms are UH-60 transportable.

Autonomous Navigation System(ANS) is the mission payload package that will be integrated on both the MULE and ARVs to provide robotic semiautonomous capability. ANS provides GPS/IPS core navigation, targeting support and timing. It also detects obstacles and provides alternate routes. The ANS primary system components are: the LADAR Imaging Perception Module (LIPM), the Imaging Perception Module (IPM), the Millimeter Wave Radar (MMWR), the Global Positioning System/Inertial Navigation System (GPS/INS) and the ANS Computer System (ACS). ANS provides for day and night capability in all weather and mobility control for on/off roads, cross country and complex terrain. MMWR provides tracking in rain, smoke or fog along with an early warning for approaching vehicles with high closing rates. ACS provides SoSCOE interface, path planning, video processing, hardware sensor processing object processing and speed and curvature commands. As part of the Army Budget Constraints contain in the FY08-13 POM decision, the leader follower MGV mission is being deferred and made an objective requirement.
Armed Robotic Vehicle (ARV)

The Armed Robotic Vehicle (ARV) has two variants: the Assault variant (ARV-A) and the Reconnaissance, Surveillance and Target Acquisition variant (ARV-RSTA). The two variants share a common chassis. The ARV-A and ARV-RSTA will have different mission payloads mounted on a common chassis capable of staying with MGVs. These two variants are being deferred and made an objective requirement as part of the Army Budget Constraints contain in the FY08-13 POM.

The ARV-A will be utilized to maneuver forward of the mounted and dismounted elements in the attack or within the defense. The Assault variant will support the mounted and dismounted forces in the assault providing Line-of-Sight (LOS) and overwatching fires with direct fire and anti-tank (AT) weapons to destroy enemy platforms and fortified positions; remotely occupies key terrain providing ISR/TA reconnaissance capability in MOUT and other battlespace; remotely deploy sensors; locate or by-pass threat obstacles; remotely assess battle damage, employ non-lethal munitions; remotely provide limited reconnaissance capability and acts as a communications relay.

The ARV-RSTA accompanies mounted and reconnaissance units and fills the role of an additional "scout", gathering information forward of the MGVs. The ARV-RSTA consists of a common chassis platform with payloads that provide video capability, digital communications/audio relay modules (plug in/out), and advanced sensors/mission modules. The ARV-RSTA variant will provide Reconnaissance, Surveillance and Target Acquisition for the FCS (BCT). The ARV-RSTA will provide reconnaissance capability in Urban Military Operations in Urban Terrain and other battlespace; deploy sensors, highlight targets, locate or by-pass threat obstacles in buildings, bunkers, tunnels, and other urban areas and act as a communications relay and perform battle damage assessment.
IAW Section 214 of the FY2006 National Defense Authorization Act, this project will be converted to a stand alone Program Element (0604663A Project FC4) commencing with the FY2008 President's Budget submission to Congress

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
ARV - FY06 Accomplishment - The ARV platform specifications continued refinement and work continued on the Integrated UGV Platform Simulations; ensuring adequate maturity for SFR completion in Dec 06. Utilizing the verified system level requirements, ARV continued to flow down the Common Mobility Platform and common subsystems for the ARV-Assault (ARV-A and the ARV-RSTA variants. After the completion of the ARV SFR, the ARV effort will transfer back to the tech base to develop/mature a faster, lighter, less expensive variant.	35973	3570		
FY06 MULE - Completed SFR for the MULE-Transport, MULE-Countermine, ARV-Assault-Light (~1500 Requirements) 2Q FY06. This activity led to the establishment of a Best Technical Approach to beginning engineering design in support of a Dec 07 Preliminary Design Review (PDR). Continued to refine the platform specifications and developed Integrated UGV Platform Simulations from the	40417	44945		

MULE SFR to verify that system level requirements were properly aligned with the SoS. Specification and correctly flowed down to MULE common sub-systems. Common component level testing initiated to support efforts leading to the PDR. This effort was tied to the conduct of Technology and Integration Risk Reduction Activities. These Risk Reduction Activities supported the path to PDR. MULE completed preliminary design, fabrication and integration of the MULE Common Platform Engineering Evaluation Unit (EEU). Initial integrated system checkout began at the end of FY06. FY07 MULE - Continue the maturation of the MULE platform designs leading to the MULE PDR, Dec 08, to show readiness to enter detailed design. PDR will verify that system preliminary designs are compliant with system level requirements as outlined in the MULE PIDS documents. Complete testing integration of subsystems on the EEU, to include installing pre-prototype Autonomous Navigation System (ANS). The MULE Common Platform Pre-prototype Engineering Evaluation Unit (including the ANS system) will complete all component level fabrication, procurement, and testing including integrated system checkout. The Demonstration and Evaluation phase of EEU testing will be completed in FY07. The data outputs and lessons learned will be reported to UGV IPT at completion of these activities, results will be incorporated into design decisions prior for MULE PDR while reducing the software risk which is the greatest risk to the MULE critical path. Updated digital system simulations will be delivered to the LSI and C4ISR SILs.				
MULE SYSTEM ENGINEERING & PROGRAM MANAGEMENT(SEPM) - FY06 - Continued refining the MULE platform specifications. This activity will be reviewed at the MULE SFR, which will be used to verify that system level requirements are properly aligned with the SoS Specification and correctly flowed down to MULE sub-systems. FY07 will continue the maturation of the MULE platform designs. This activity will be reviewed at the MULE PDR. This review will be used to verify that system designs are compliant with system level requirements as outlined in the MULE PIDS documents. Complete the MULE simulation and support testing at the SoSIL. Simulations and Emulations - FY07 - Updated digital system simulations will be delivered to the LSI SoS and C4ISR SILs to support IV1 activities.				
FY06 AUTONOMOUS NAVIGATION SYSTEM (ANS) - Continue to refine the ANS specifications. Completed System Functional Reviews (establishment of requirements baseline). The ANS SFR was used to verify that system level requirements were properly aligned with the SoS Specification and the MGV and UGV platform PIDS, and correctly flowed down to ANS sub-systems. Initiated fabrication of ANS pre-prototypes and began installation on both legacy vehicles to conduct robotic operations and for the MULE Engineering Evaluation Unit (EEU). Updated the ANS simulation for delivery and integration into the MULE, ARV, and MGV simulations. GPS/INS hardware was delivered to the NLOS-C prototypes. Developed system specification and test approach for Robotic Convoy systems including design and build of FMTV drive-by-wire capability, surrogate communication system, and Operator Control Unit(OCU). Initiated the software design and development activities for required Robotic Convoy behaviors and initiated build of the ANS OCU,CPU, LADAR Imaging Perception Model (LIPM), and IPM breadboards. FY07 ANS - Continue the maturation of the ANS design, to be reviewed at the ANS PDR. Complete fabrication of the ANS engineering prototypes for current force vehicles and initiate testing of robotic operations to support the PDR. Continue integration and test of ANS hardware on six surrogate vehicles to support ANS development. Fabricate ANS pre-prototypes for the MULE EEU and ARV ATR. Support integration of the ANS simulation into the MULE, ARV, and MGV simulations. Continue component fabrication and testing of Image Perception Module (IPM) of the ANS. Conduct Robotic Convoy system integration and test of all hardware/software systems (LIPM, IPM, ANS computer, MMW, GPS/INS) on current force vehicles. Conduct increasingly difficult experiments and demonstrations of Robotic Convoy capabilities, including teleoperation, leader/follower, move-on-route, wingman, and forward leading.	33806	43915		
FY06 SUGV - The SUGV program refined their requirements and specifications to support the SUGV SFR held in Dec 05. These SUGV level requirements and specifications were used to verify that system level requirements were properly aligned with the SoS Specification and correctly flowed down to SUGV sub-systems. The SUGV program completed it's internal round 1 design pre-prototypes and testing	11332	11089		

and proceeded into round 2 design pre-prototype development. These pre-prototypes included initial chassis design, brushless DC motor controller, power management board, head and neck controller board, video board, and neck drive board. These prototypes were used to support SUGV risk reduction in mobility performance, weight, and integration. SUGV simulation was delivered for use in the SoSIL. The SUGV program also conducted technology and integration risk reduction activities that included technical interchange meetings and SUGV platform simulations. FY07 SUGV - The SUGV program will conduct it's PDR in Dec 07. The internal round 2 pre-prototypes will be completed and tested. Internal round 3 prototype development will begin and continue through FY 07 leading up to the SUGV CDR in May 08. The continued maturation of the design will verify that system design is compliant with system level requirements as outlined in the SUGV PIDS and ready for full prototype fabrication. The internal round 2 pre-prototypes will be used to support FCS Experiment 1.1 in 2Q07 at White Sands. Simulation and support testing will be conducted using the SoSIL. Integrated head and neck activities will commence that lead to a fully integrated head and neck assembly prior to CDR in FY08.				
Small Business Innovative Research/Small Business Technology Transfer Programs		2997		
Total	121528	106516		

B. Other Program Funding Summary	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
0604660A FCS Manned Grd Vehicles & Common Grd Vehicle Components			696333	772458	791186	361201	215665	103885	Continuing	Continuing
60046661A FCS System of Systems Engr & Program Management			1589466	1407410	1888349	1929853	1299062	1034307	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms			41164	34220	14398	9301	4587	1344	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles			90667	96666	65206	43912	27038	3603	Continuing	Continuing
6064664A FCS Unattended Ground Sensors			10999	12942	19103	16874			Continuing	Continuing
6064665A FCS Network Hardware & Software			678781	536387	336471	367894	292770	170602	Continuing	Continuing
0604646A Non-Line of Sight- Launch System	216668	320650	253410	199064	40329	6000			Continuing	Continuing
0604647A Non-Line of Sight - Cannon	132223	110998	137802	89189	71906	43531	28971		Continuing	Continuing
0604666A FCS Spin Out			64796	32442	65000	50000	50000	10000	Continuing	Continuing
0603639A FCS MRM			44578	45733	71961	56698	107077	51079	Continuing	Continuing
0604715A STRICOM/NAWCTSD Support			381	391	401	409	418	429	Continuing	Continuing
WTCV G86100 FCS Core Program			79483	155838	149367	683788	2194625	5795292	Continuing	Continuing
WTCV G86200 FCS Spin Out Program			20123	172746	373790	557060	779742	958060	Continuing	Continuing
0604645 F52 UAV Recon & Sensors	50692	26360							Continuing	Continuing
0604645 F53 UGV	121528	106516							Continuing	Continuing
0604645 F54 UGS	31242	10612							Continuing	Continuing

0604645 F55 SUSTAINMENT	139389	106517							Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing
0604645 F61 SoS Engineering and Program Management	2027766	2142970							Continuing	Continuing

Comment:

C. Acquisition Strategy Due to FCS requirements changing in the last 3 years, coupled with the challenge to meet all its reset and modernization requirements, have caused the Army to implement FCS program adjustments. These adjustments maintain the Army focus on FCS-equipped Brigade Combat Team development at reduced program risk. The adjustments to the FCS Program acquisition strategy fall into the following categories:
1. Defer the following platforms from the FCS(BCT): ARV-A, ARV-RSTA, UAV Class II, UAV Class III
2. Refine the schedules for the development of the Core and "Spin Out" capabilities so that the Army can benefit from the savings realized with concurrent testing.
3. Increase the rate of fielding of FCS technologies to the current force
4. Fully fund the Spin Out technology Insertion program and development and fielding of the Mid-Range Munitions (MRM) and Advanced Kinetic Energy (AKE) munitions
5. Revise platform configurations to decrease the production cost of a single Core FCS BCT from $6.2 billion to $5.9 billion (FY03 Const $) by deferring/deleting selected sensors and other associate hardware (such as the XM307 machine gun).

The following is a history of the LSI SDD Contract.

	Contract Award	Definitization Date
Original Contract Award	30 May 2003	10 Dec 2003
Modified for POM 06-11 Changes	6 Aug 2004	2 Mar 2005
Conversion to FAR Base Contract	23 Sept 2005	28 Mar 2006
Modification for POM 8-13 Adjustments	Feb 2007	May 2007

IAW Section 214 of the FY2006 National Defense Authorization Act, this project will be converted to a stand alone Program Element (0604663A Project FC4) commencing with the FY2008 President's Budget submission to Congress.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F53

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Armed Robotic Vehicle (ARV-A)	OTA/FAR	The Boeing Company St. Louis, MO see remark 2	4068		1Q	3570							7638	
Small Unmanned Ground Vehicle (SUGV)	OTA/FAR	The Boeing Company St. Louis, MO see remark 1	11610	11332	1Q	11089	1-3Q						34031	
MULE T	OTA/FAR	The Boeing Company St. Louis, MO see remark 3	17742		1Q								17742	
Autonomous Navigation System - Software	OTA/FAR	The Boeing Company St. Louis, MO see remark 4	29304	33806	1Q	43915	1-3Q						107025	
MULE CM	OTA/FAR	The Boeing Company St. Louis, MO see remark 3		28465	1Q	31246	1-3Q						59711	
ARV SEPM	OTA/FAR	The Boeing Company St. Louis, MO see remark 2	11098	18692	1Q								29790	
ARV COMMON	OTA/FAR	The Boeing Company St. Louis, MO see remark 2	6226	17282	1Q								23508	
MULE STE	OTA/FAR	The Boeing Company St. Louis, MO see remark 3			1Q									
MULE SEPM	OTA/FAR	The Boeing Company St. Louis, MO see remark 3	8294	11951	1Q	16696	1-3Q						36941	
Subtotal:			88342	121528		106516							316386	

Remarks: Remark 1: Subcontractor: iRobot Corp. - Burlington, MA, award date Nov 2003

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F53**

Remark 2: Subcontractor: BAE - Ground Systems Division - Santa Clara, CA, award date Nov 2003
Remark 3: Subcontractor: Lockheed Martin Missile and Fire Control - Grand Prairie, TX, award date Nov 2003
Remark 4: Subcontractor: General Dynamics Robotic Systems - Westminister, MDaward date Nov 2003, award date Nov 2003

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

Project Total Cost:			**88342**	**121528**		**106516**							**316386**	

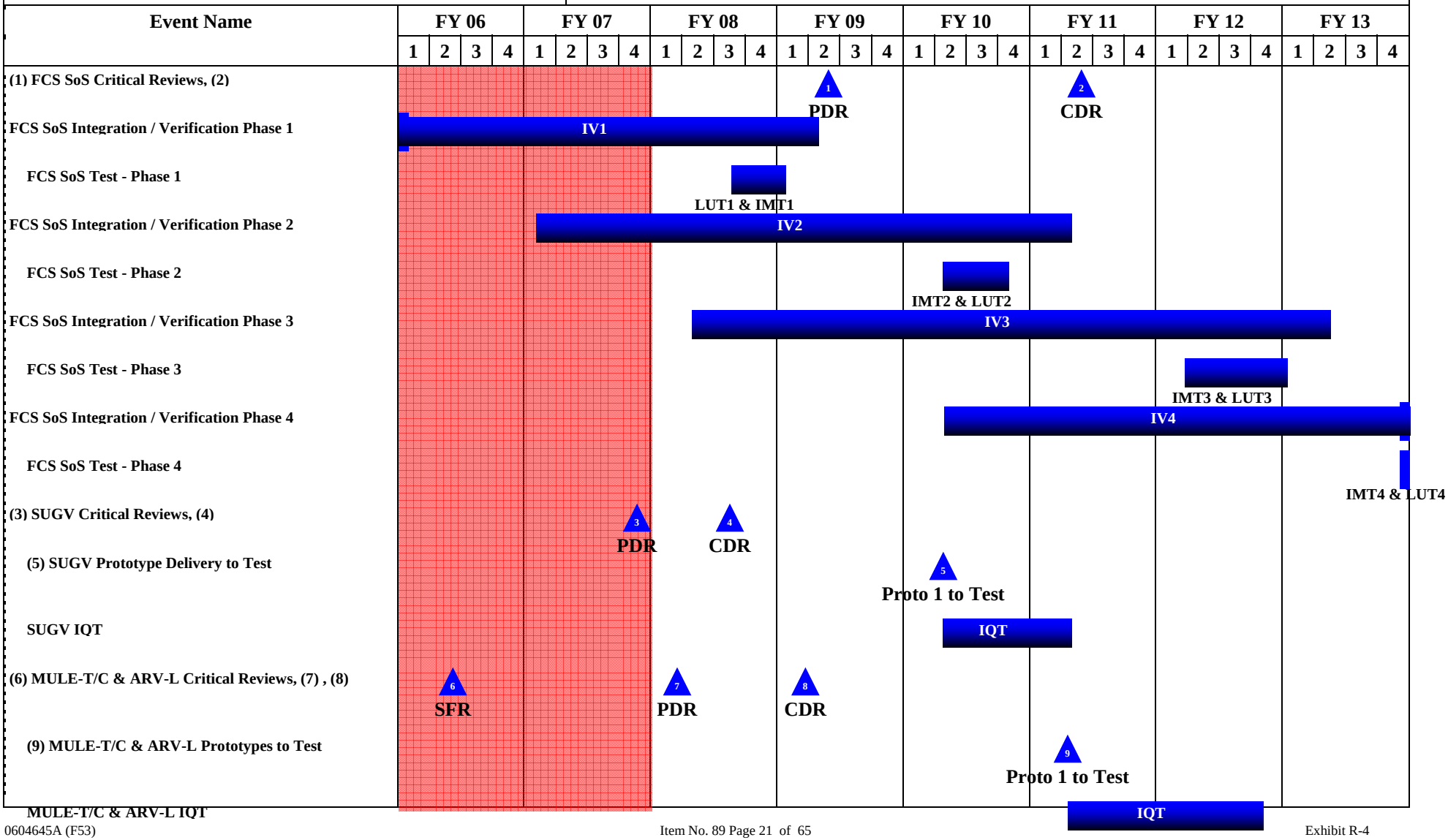
Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F53



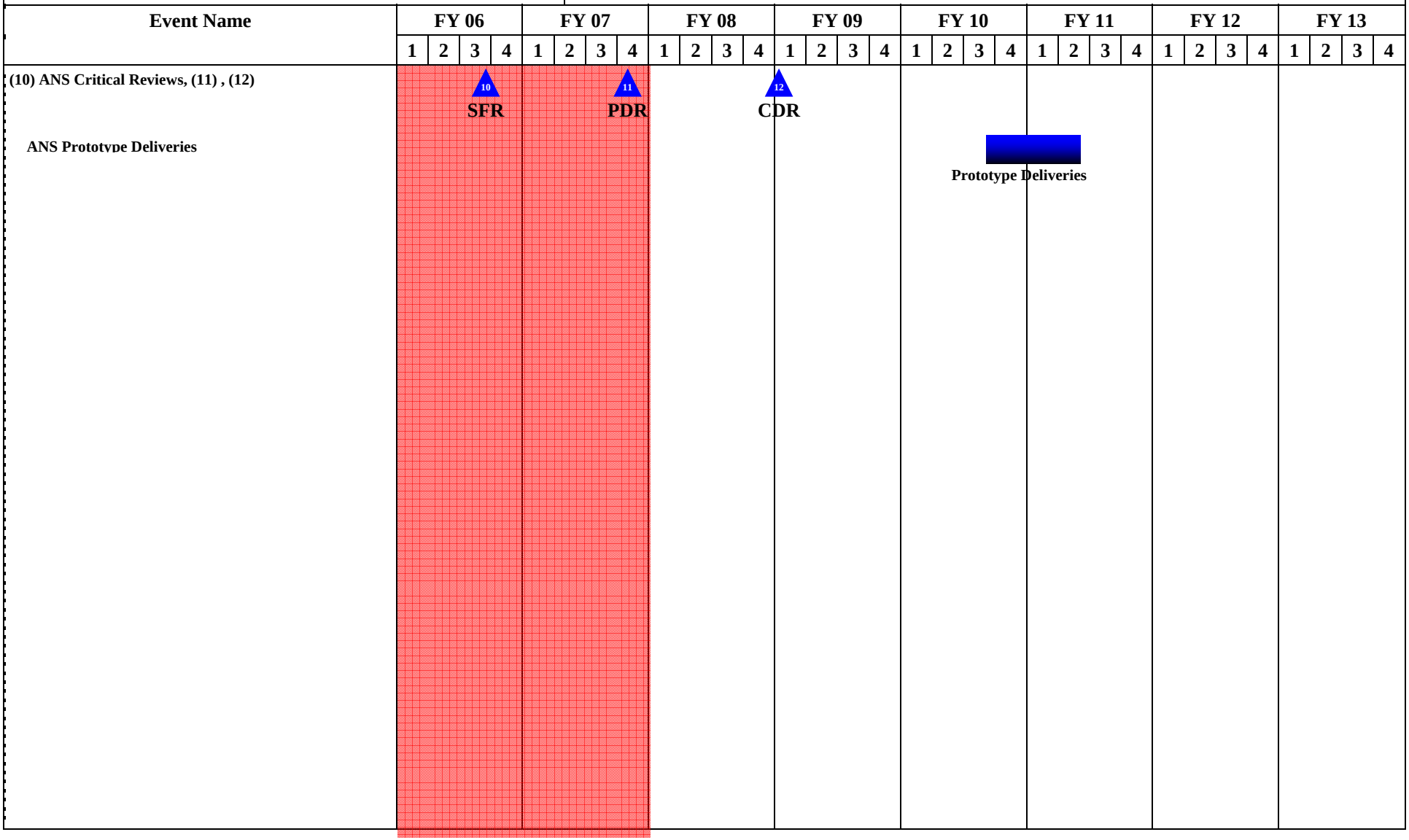
Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F53



Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F53

Schedule Detail	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FCS SoS Critical Reviews				2Q				
						2Q		
FCS SoS Integration / Verification Phase 1	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
FCS SoS Test - Phase 1			3Q - 4Q	1Q				
FCS SoS Integration / Verification Phase 2		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q		
FCS SoS Test - Phase 2					2Q - 4Q			
FCS SoS Integration / Verification Phase 3			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
FCS SoS Test - Phase 3							1Q - 4Q	1Q
FCS SoS Integration / Verification Phase 4					2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
FCS SoS Test - Phase 4								4Q
SUGV Critical Reviews		4Q						
			3Q					
SUGV Prototype Delivery to Test					2Q			
SUGV IQT					2Q - 4Q	1Q - 2Q		
MULE-T/C & ARV-L Critical Reviews	2Q							
			1Q					
				1Q				
MULE-T/C & ARV-L Prototypes to Test						2Q		
MULE-T/C & ARV-L IQT						2Q - 4Q	1Q - 4Q	
ANS Critical Reviews	3Q							
		4Q						
				1Q				
ANS Prototype Deliveries					3Q - 4Q	1Q - 2Q		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F54**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
F54 UNATTENDED SENSORS	31242	10612							Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army's Future Combat System (Brigade Combat Team) (FCS (BCT)) is a joint system of systems consisting of a network and a combination of manned and unmanned systems that use an advanced network architecture to enable levels of joint connectivity, situational awareness and understanding, and synchronized operations previously unachievable. It is designed to interact with and enhance the Army's most valuable weapon - the Soldier. When fully operational, FCS will provide the Army and the joint force unprecedented capability to see the enemy, engage him on our terms, and defeat him on the 21st Century battlefield. The Army's first modernization effort in nearly four decades; FCS is the embodiment of the modular force, a modular system designed for "full spectrum" operations. It will network existing systems, systems already under development and future systems to be developed to meet the requirements of the Army's Future Force. It is adaptable to traditional warfare as well as complex, irregular warfare in various rural and urban terrains. It can also be adapted to civil support, such as disaster relief. FCS is the #1 priority acquisition program for the Army.

U-UGS - The Urban-Unattended Ground Sensors (U-UGS), also known as Urban Military Operations in Urban Terrain Advanced Sensor system, will provide a low cost, network-enabled reporting system for SA and force protection in an urban setting, as well as residual protection for cleared areas of Urban Military Operations in Urban Terrain (MOUT) environments. The (U-UGS) system can support BCT operations by monitoring urban choke points such as rooms, halls attics, basements, sewers, culverts, tunnels, caves, and alleyways. They can be hand-employed by Soldiers or robotic vehicles either inside or outside buildings and structures. When a platoon or squad clears a building for example, U-UGS are left behind to perform surveillance that would otherwise require dedicated soldiers.
The U-UGS system provides a self-organizing wireless network that consists of three configuration items; personnel detect sensors, imaging sensors, and gateways.
1. Personnel Detect Sensors provide dual mode, passive infrared and RF microwave motion sensing for "trip-wire" detection of intruders.
2. Imaging Sensors provide electro-optical visual imaging with a near-infrared illuminator for operation in full darkness.
3. Gateways organize and manage the sensor network, and communicate sensor data to FCS C2 JTRS systems and to the local dismounts.

T-UGS-Tactical-UGS (t-ugs) includes Intelligence, Surveillance and Reconnaissance (ISR)-UGS and Chemical, Biological, Radiological and Nuclear (CBRN)-UGS. The UGS (T-UGS) are designed for remote tactical operations in open spaces, at road choke points, avenues of approach, etc, and are designed to be emplaced by hand or by remote deployment methods. T-UGS provoides ISR and CBRN awareness to the FCS (BCT) of areas not covered by manned/unmanned ground/air vehicles. the common form factor enables simplified scalability and upgrade paths for future technology insertion, while the distributed sensing capability enhances mission flexibility and system versatility. The T-UGS system consists of five configuration items (nodes), each containing a unique set of sensing capabilities, and sharing a common hardware form factor.
1. The T-UGS ISR sensor node provides for vehicle and personnel detection capabilities via seismic, acoustic and magnetic sensors. Seismic sensors are the primary means of personnel detection. The principal means of vehicle detection and tracking are the acoustic bearing sensors. Th ISR-UGS will be modular and composed of tailorable sensor groups using multiple ground-sensing technologies. Multiple sensors support precision location and simultaneous tracking of multiple targets.
2. When confirmed as a valid target of interest, Electro Optical/Infrared (EO/IR) sensor nodes will autonomously capture multiple images of the target.
3. The CBRN node provides for chemical, biological, radiological, and nuclear sensing and reporting capability.
4. The Hazard/Clear Lane Marker (H/CLM) nodes are deployed to mark hazardous keep-out zones, or to define cleared lanes though hazardous areas such as minefields.
5.The final component of the T-UGS system is the Long-Haul gateway node that provides radio communications and integration into the FCS network.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
UGS FY06 . Program has completed system concept definition and the SFR. concept definition, UGS design analysis and trades, and integration into the FCS (SoS) network-centric environment. UGS CIs/SCSIs were released in early FY06 to support PDR Phases 1 and 2 and began the detailed design phase of the program. The Critical Design Review (CDR), Aug 2006, marked the design completion and initiated the fabrication and prototype build phase. A IV phase 1 (IV1) was performed to develop and exercise models consistent with the Spin Out 1 UGS configuration and FCS Environment Tests and Experiments. Tests include HALT Test, HAST Test, and Endurance test as well as the start of system integration testing were completed. Completed SFR for UGS, Air, and Ground Sensors. Delivered UGS Engineering Development Models. FY07 UGS PLANNED ACCOMPLISHMENTS - Delivery of pre-qualification hardware to Boeing's C4ISR System Integration Lab (SIL) is scheduled in FY07 for integration testing with the C4ISR network elements. The delivery will augment other UGS Modeling & Simulation (M&S) efforts to conduct the Integration & Verification (IV) phase activities. A series of Integration & Verification (IV) phase activities are planned. Testing will be completed in FY07 to be followed by full system Integrated Qualification Test (IQT). Integration & Verification efforts and BCT feedback will be utilized to refine the Spin Out 1 UGS system design and products, as well as provide input in subsequent Spin Outs. The UGS program is on track to deliver fully qualified UGS systems to the (SoS) SIL in FY 2007. Complete SO1 UGS design LUT Configuration. Complete SO1 UGS developmental testing LUT Configuration. Deliver C4SIL pre-qual units: 2 T-UGS and 2 U-UGS systems Deliver SO1 prototype units (LUT Configuration): 10 T-UGS and 16 U-UGS systems. Conduct T-UGS CDR. Deliver SoSCOE v. 1.5 and 1.8 for UGS. Conduct U-UGS CDR. Participate in Exp 1.1 T-UGS and U-UGS.	31242	10313		
Small Business Innovative Research/Small Business Technology Transfer Programs		299		
Total	31242	10612		

B. Other Program Funding Summary	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
0604660A FCS Manned Grd Vehicles & Common Grd Vehicle Components			696333	772458	791186	361201	215665	103885	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management			1589466	1407410	1888349	1929853	1299062	1034307	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms			41164	34220	14398	9301	4587	1344	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles			90667	96666	65206	43912	27038	3603	Continuing	Continuing
0604664A FCS Unattended Ground Senesors			10999	12942	19103	16874			Continuing	Continuing
0604665A FCS Network Hardware & Software			678781	536387	336471	367894	292770	170602	Continuing	Continuing
0604646A Non-Line of Sight - Launch System	216668	320650	253410	199064	40329	6000			Continuing	Continuing
0604647A Non-Line of Sight - Cannon	132223	110998	137802	89189	71906	43531	28971		Continuing	Continuing
0604666A FCS Spin Out			64796	32442	65000	50000	50000	10000	Continuing	Continuing

0603639A FCS MRM			44578	45733	71961	56698	107077	51079	Continuing	Continuing
0604715A Stricom/ NAWCTSD Support			381	391	401	409	418	429	Continuing	Continuing
WTCV G86100 FCS Core Program			79483	155838	149367	683788	2194625	5795292	Continuing	Continuing
WTCV G86200 FCS Spin Out Program			20123	172746	373790	557060	779742	958060	Continuing	Continuing
0604645 F52 UAV Recon & Sensors	50692	26360							Continuing	Continuing
0604645 F53 UGV	121528	106516							Continuing	Continuing
0604645 F54 UGS	31242	10612							Continuing	Continuing
0604645 F55 SUSTAINMENT	139389	106517							Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing
0604645 F61 SoS Engineering and Program Management	2027766	2142970							Continuing	Continuing

Comment:

C. Acquisition Strategy Fiscally constrained Budgets, coupled with the fiscal challenge to meet the Army_s reset and modernization requirements, have caused the Army to implement FCS program adjustments. These adjustments maintain the Army_s focus on FCS-equipped Brigade Combat Team development and minimize the efforts on operational requirements. The adjustments to the FCS Program acquisition strategy fall into the following categories:

1. Defer the following platforms from the FCS(BCT): ARV-A, ARV-RSTA, UAV Class II, UAV Class III
2. Refine the schedules for the development of the Core and Spin Out capabilities so that the Army can benefit from the savings realized with concurrent testing.
3. Increase the rate of fielding of FCS technologies to the current force.
4. Fully fund the Spin Out technology Insertion program and development and fielding of the Mid-Range Munitions (MRM) and Advanced Kinetic Energy (AKE) munitions.
5. Revise platform configurations to decrease the production cost of a single Core FCS BCT from $6.2 billion to $5.9 billion (FY03 Constant dollars) by deferring/deleting selected sensors and other associate hardware (such as the XM307 machine gun).

The following is a history of the LSI SDD Contract.

	Contract Award	Definitization Date
Original Contract Award	30 May 2003	10 Dec 2003
Modified for POM 06-11 Changes	6 Aug 2004	2 Mar 2005
Conversion to FAR Base Contract	23 Sep 2005	28 Mar 2006
Modification for POM 8-13 Adjustments	Feb 2007	May 2007

The R forms are based on estimated effects of the Army adjustment. Upon completion of negotiation of the contract modification, caused by this adjustment, reprogramming actions may be required to realign the funding buckets to the contract.

Termination Liability associated with this contract is included in PE 0604645 Project F61.

IAW Section 214 of the FY2006 National Defense Authorization Act, this project was converted to a stand alone Program Element (0604662A Project FC3) commencing with the FY2008 President's Budget submission to Congress.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F54

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Unattended Ground Sensors (UGS)	OTA/FAR	The Boeing Company - St. Louis, MO - See Remark 1	21015	31242	1Q	10612	1-3Q						62869	
Subtotal:			21015	31242		10612							62869	

Remarks: Remarks 1: Subcontractor: Textron Systems,Intelligent Battlefield System Division - Willington, MA, award date Oct 2003

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

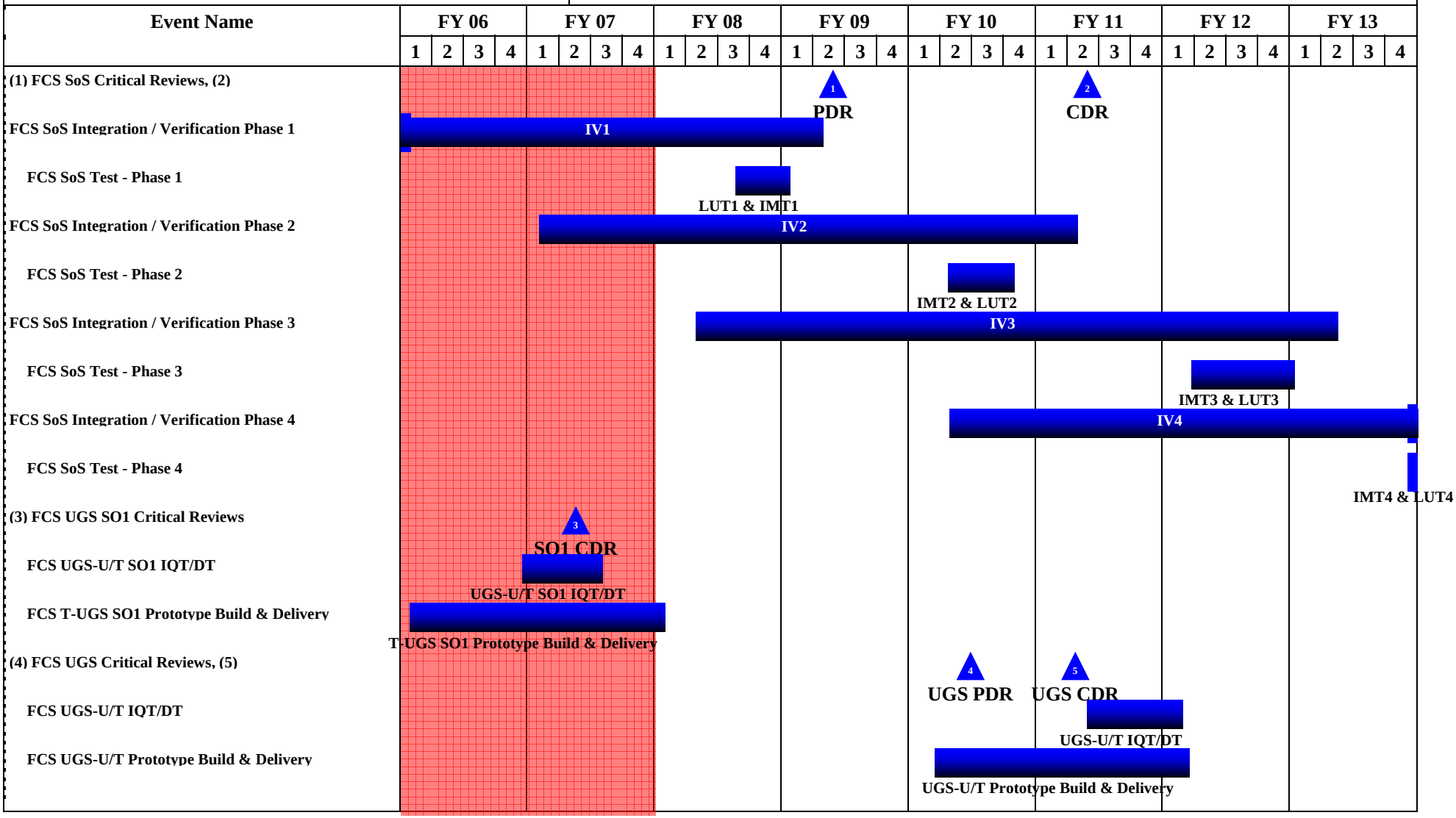
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

Project Total Cost:	**21015**	**31242**		**10612**							**62869**	

Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F54**



Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F54

Schedule Detail	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FCS SoS Critical Reviews				2Q				
						2Q		
FCS SoS Integration / Verification Phase 1	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
FCS SoS Test - Phase 1			3Q - 4Q	1Q				
FCS SoS Integration / Verification Phase 2		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q		
FCS SoS Test - Phase 2					2Q - 4Q			
FCS SoS Integration / Verification Phase 3			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
FCS SoS Test - Phase 3							1Q - 4Q	1Q
FCS SoS Integration / Verification Phase 4					2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
FCS SoS Test - Phase 4								4Q
FCS UGS SO1 Critical Reviews		2Q						
FCS UGS-U/T SO1 IQT/DT	4Q	1Q - 3Q						
FCS T-UGS SO1 Prototype Build & Delivery	1Q - 4Q	1Q - 4Q	1Q					
FCS UGS Critical Reviews					2Q			
						2Q		
FCS UGS-U/T IQT/DT						2Q - 4Q	1Q	
FCS UGS-U/T Prototype Build & Delivery					1Q - 4Q	1Q - 4Q	1Q	

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F55**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
F55 SUSTAINMENT	139389	106517							Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army's Future Combat System (Brigade Combat Team) (FCS (BCT)) is a joint system of systems consisting of a network and a combination of manned and unmanned systems that use an advanced network architecture to enable levels of joint connectivity, situational awareness and understanding, and synchronized operations previously unachievable. It is designed to interact with and enhance the Army's most valuable weapon - the Soldier. When fully operational, FCS will provide the Army and the joint force unprecedented capability to see the enemy, engage him on our terms, and defeat him on the 21st Century battlefield. The Army's first modernization effort in nearly four decades; FCS is the embodiment of the modular force, a modular system designed for "full spectrum" operations. It will network existing systems, systems already under development and future systems to be developed to meet the requirements of the Army's Future Force. It is adaptable to traditional warfare as well as complex, irregular warfare in various rural and urban terrains. It can also be adapted to civil support, such as disaster relief. FCS is the #1 priority acquisition program for the Army.

This project contains funding for Training and Logistics Development for the Future Combat Systems (FCS) Brigade Combat Team (BCT). The logistics effort includes the development of the management, products, and services required to design, develop, assemble, integrate, and test the supportability processes and supporting automated applications within the FCS System of Systems (SoS). Validation of maneuver sustainment, Production Based Logistics (PBL), and other applicable logistics support concepts during SoS Test and SoSIL simulations. Assurance that sensor collection of data for logistics modeling verification and validation efforts, as well as operational PBL. It also funds analysis to aid in life cycle product support decision making. Commonality of hardware and software within the FCS program is a priority action needed to reduce the Lifecycle costs and logistical footprint of the FCS. Logistics Management Product Integration - Provides integration of supportability products into the SoS elements, including diagnostics and prognostics functions and conducts logistics technical reviews at the system, vehicle, and component levels.
Logistics Fielding includes development of the process for deploying vehicles to home base locations to include facilities analysis.
Networked Logistics Systems is integrated in the FCS software to achieve the logistics goals of reducing the logistics footpring, enhancing deployability, increasing operational availability, and reducing total ownership costs. These critical program goals are included in the two logistics Key Performance Parameters (KPP), KPP 4 (Transportability/Deployability) and KPP 5 (Sustainability/Reliability). Inherent to meeting these KPPs is the integration of logistics in the command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) network primarily through the Platform-Soldier Mission Readiness System (PSMRS) and the Logistics Decision Support System (LDSS). These systems provide unprecedented depth and accuracy of logistics information and decision tools to the commanders and logisticians by enabling the distribution system to deliver the right stuff to the right place at the right time, thus reducing O&S costs and improving operational availability. The supportability of the FCS (BCT) is further enabled by the reduction of demand designed into the System of Systems (SoS). Increased Reliability Availability Maintainability Test (RAM-T) goals and implementing a Performance Based Logistics (PBL) support concept through extensive up front systems engineering efforts will result in increased Operational Availability and significant decreases in both parts and maintenance personnel while generating increased combat power. The time required to execute a repair is significantly decreased through implementation of Pit-Stop Engineering designs for maintenance, easing both crew and maintainer burdens. Training includes contractor analysis to support training for the SoS. This effort includes the design and development, engineering, integration, embedded training, and testing of unique training devices, training systems engineering, training products, training support packages, and training integration. Training also provides for the management, plans, products, verification and validation, and services required to ensure design, development, fabrication, integration, and test of a FCS (BCT) training program and FCS (BCT) training system capable of meeting Operational Requirements Document (ORD) objectives. This mission assures that the training system is designed as an integral part of the overall SoS design to meet Increment 1 requirements and provides

for future increment upgrades. Identify, assess, and mitigate training risks as part of the SDD risk reduction effort and coordinate these risk reduction efforts with the SoS Engineering technical risk manager. Support the distributed network and platform development efforts required to implement embedded and stand alone training designs within (FoS) products necessary to ensure these designs meet ORD requirements. Includes training product design and interfaces as required to address U.S. Army training implementation beyond the SoS and/or FoS levels for consistency with the existing and planned U.S. Army training infrastructure. Apply a common systematic approach to identify, define, and assess training system technologies and training environments for potential application to FCS training requirements. Embedded Training assures the FCS (BCT) network facilitates the Soldier's ability to train anywhere, any time. Technology has matured to a level that supports these requirements. Embedded Training (ET) will be developed as an integral part of the FCS (BCT) manned platform and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) architectures.

The Embedded Live-Virtual-Constructive (LVC) Multi-more Training is the cornerstone of the networked Embedded Training (ET) and will satisfy the Key Performance Parameter (KPP#6) which states the FCS Family of Systems (FoS) must have an embedded individu7al and collective training capability that supports live, virtual, and constructive training environments. ET must be designed-in at the start of the program to ensure it is developed in conjunction with the other FCS (BCT) System of Systems (SoS) components. Embedding the training capabilities as an inherent part of the operational system mitigates negative training inherent with attempting to replicate operational performance, since an embedded solution stimulates and uses the operational capabilities as an organic part of the solution.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
TRAINING SYSTEMS - FY06. Developed Embedded Training (ET) capability, software and products, including training support for Spin Out #1; Training (Instructional) Support Packages (TSPs); Interactive Multi-media Instruction (IMI); Training Aids and Devices, Simulations and Simulators (TADSSs). Delivered first increment of Training Common Components (TCCs) integrated with SOSCOE. TRAINING SYSTEMS FY07. 32 One Team Partners continue to develop Embedded Training capability, software and products, including Training (Instructional) Support Packages (TSPs), Interactive Multi-media Instruction (IMI), Training Aids and Devices, Simulations and Simulators (TADSSs) for Experiment 1.1 & Spin Out #1. Continue integration of embedded training software and products in the Training Systems Integration Lab (SIL). Deliver second increment of Training Common Components for FCS. Continue to develop Embedded Training capability and products. Continue development of Training Support Plans (1,500+ tasks). Deliver the third increment of the (SORL) and the (SITL). Develop Leader and Battle Staff tasks for the FCS equipped units (500+ tasks). Identify training requirements and develop training support products in preparation for Integrated Mission Test 1 (IMT-1). Test Training products and support for Experiment 1.1 in Training SIL and during experiment. Provide training inputs and support to FCS Systems PDRs & CDRs (14+1+1 systems). Continue Key Performance Parameter (KPP) #6 (Training) trace, development, and execution. Continue integration of Training software with Warfighter Machine Interface (WMI). Update and Deliver: Training Management Plan, Training Data Products Report, Training Support Packages, Training Facilities Survey Report.	97816	14791		
SUSTAINMENT FY06. Completed Material Fielding Plan, PBL Implementation Plan and Supportability Strategy, Modeling and Simulating (M&S) plans updated. Logistics Analysis supported development of data sets and model software to insert logistics impacts as Operational Availability (Ao), Log Footprint and Life Cycle Costs into war fighter models (JANUS Simulation) and supportability assessments and trades. Provided logistics attributes and capabilities documents to support modeling and simulation activities in War games and major availability analyses. SUSTAINMENT FY07 - Update the Material Fielding Plan, the PBL implementation plan, the Supportability Strategy, and the M&S models. Conduct Test Readiness Reviews for PS-MRS and LDSS Build 1 software. Deliver the first phase of logistics products (Logistics Planning software) that were developed during the FCS Program's engineering iteration 1, to the C4ISR System Integration Lab (SIL) in February. Log Data Management Service (LDMS) contract, awarded Dec 2006. LDMS will be	40272	87376		

integrated with the Army_s Logistics Enterprise and supports a network-enabled, performance-based logistics solution that will reduce the logistics footprint, increase operational availability and significantly lower life-cycle costs for FCS (BCT).Continue PDR quality maturation of platform Sustainment and Transportation specifications. PIDS to CSCI Interfaces Documented. Interoperability (I/O) Kits PIDS developed and SFR completed. Complete LRR IMT1 detailed test procedures. Logistics Decision Support System EI1 Development continued. IETM Specification and Requirements Development continued. SO 1 Supportability Strategy Final Draft Released. SO1 PBL Implementation Plan approved. FCS Materiel Fielding Plan updated for EI1 RAP. Platform Soldier-Mission Readiness System EI1 Development continued. Conduct ILS and KPP Assessments for platform PDRs and CDRs. Continue logistics analysis of Complementary Programs supporting the FCS (BCT).				
GFX FY06/07 - PEO STRI SME SUPPORT - This includes the US Government Subject Matter Experts who oversee the integration of over 14.6 million lines of GFX training software code and the associated requirement into the total SoS training planned software code.	1301	1353		
Small Business Innovative Research/Small Business Technology Transfer Programs		2997		
Total	139389	106517		

B. Other Program Funding Summary	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
0604660A FCS Manned Grd Vehicles & Common Grd Vehicle Components			696333	772458	791186	361201	215665	103885	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management			1589466	1407410	1888349	1929853	1299062	1034307	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms			41164	34220	14398	9301	4587	1344	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles			90667	96666	65206	43912	27038	3603	Continuing	Continuing
0604664A FCS Unattended Ground Sensors			10999	12942	19103	16874			Continuing	Continuing
0604665A FCS Network Hardware & Software			678781	536387	336471	367894	292770	170602	Continuing	Continuing
0604646A Non Line of Sight - Launch System	216668	320650	253410	199064	40329	6000			Continuing	Continuing
0604647A Non Line of Sight - Cannon	132223	110998	137802	89189	71906	43531	28971		Continuing	Continuing
0604666A FCS Spin Outs			64796	32442	65000	50000	50000	10000	Continuing	Continuing
0603639A FCS MRM			44578	45733	71961	56698	107077	51079	Continuing	Continuing
0604715A STRICOM/NAWCTSD Support			381	391	401	409	418	429	Continuing	Continuing
WTCV G86100 FCS Core Program			79483	155838	149367	683788	2194625	5795292	Continuing	Continuing
WTCV G86200 FCS Spin Out Program			20123	172746	373790	557060	779742	958060	Continuing	Continuing
0604645 F52 UAV Recon & Sensors	50692	26360							Continuing	Continuing
0604645 F53 UGV	121528	106516							Continuing	Continuing
0604645 F54 UGS	31242	10612							Continuing	Continuing

0604645 F55 SUSTAINMENT	139389	106517							Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing
0604645 F61 SoS Engineering and Program Management	2020366	2142970							Continuing	Continuing

Comment:

C. Acquisition Strategy Fiscally constrained Budgets, coupled with the fiscal challenge to meet the Army_s reset and modernization requirements, have caused the Army to implement FCS program adjustments. These adjustments maintain the Army_s focus on FCS-equipped Brigade Combat Team development and minimize the efforts on operational requirements. The adjustments to the FCS Program acquisition strategy fall into the following categories:

1. Defer the following platforms from the FCS(BCT): ARV-A, ARV-RSTA, UAV Class II, UAV Class III
2. Refine the schedules for the development of the Core and Spin Out capabilities so that the Army can benefit from the savings realized with concurrent testing.
3. Increase the rate of fielding of FCS technologies to the current force.
4. Fully fund the Spin Out technology Insertion program and development and fielding of the Mid-Range Munitions (MRM) and Advanced Kinetic Energy (AKE) munitions.
5. Revise platform configurations to decrease the production cost of a single Core FCS BCT from $6.2 billion to $5.9 billion (FY03 Constant dollars) by deferring/deleting selected sensors and other associate hardware (such as the XM307 machine gun).

The following is a history of the LSI SDD Contract.

	Contract Award	Definitization Date
Original Contract Award	30 May 2003	10 Dec 2003
Modified for POM 06-11 Changes	6 Aug 2004	2 Mar 2005
Conversion to FAR Base Contract	23 Sep 2005	28 Mar 2006
Modification for POM 8-13 Adjustments	Feb 2007	May 2007

The R forms are based on estimated effects of the Army adjustment. Upon completion of negotiation of the contract modification, caused by this adjustment, reprogramming actions may be required to realign the funding buckets to the contract.

Termination Liability associated with this contract is included in PE 0604645 Project F61.

IAW Section 214 of the FY2006 National Defense Authorization Act, this project was converted to a stand alone Program Element (0604662A Project FC3) commencing with the FY2008 President's Budget submission to Congress.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F55

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Training Specifications &Training Products	OTA	The Boeing Company - St. Louis, MO - see remarks 1-3	72329	97816	4Q	74014	1-3Q						244159	
Logistics Systems Management	OTA	The Boeing Company - St. Louis, MO - see remarks 4-6	80623	40272	1Q	31150	1-3Q						152045	
Subtotal:			152952	138088		105164							396204	

Remarks: Remark 1: Subcontractor: Computer Science Corp. Federal Sector Defense Group, Fslls Church,VA
Remark 2: Subcontractor: Dynamics Research Corp. Systems Division, Andover, MD
Remark 3: Subcontractor: Northrop Grumman, Info Tech, Def Enterprise Solutions Div, Mclean,VA
Remark 4: Subcontractor: Northrop Grumman-Mission Systems, Carson CA
Remark 5: Subcontractor: Honeywell-Defense & Electronic Systems, Albuquerque, NM
Remark 6: Subcontractor: IBM. Bethesda, MD

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
GFX - PEO STRI SME Training Support	Direct	PM FCS (BCT), St. Louis, MO		1301	1Q	1353	1Q							
Subtotal:				1301		1353								

Remarks: All support costs for this project are included in F61 SoS Engineering and Program Management project.

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F55

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														
Project Total Cost:			**152952**	**139389**		**106517**							**396204**	

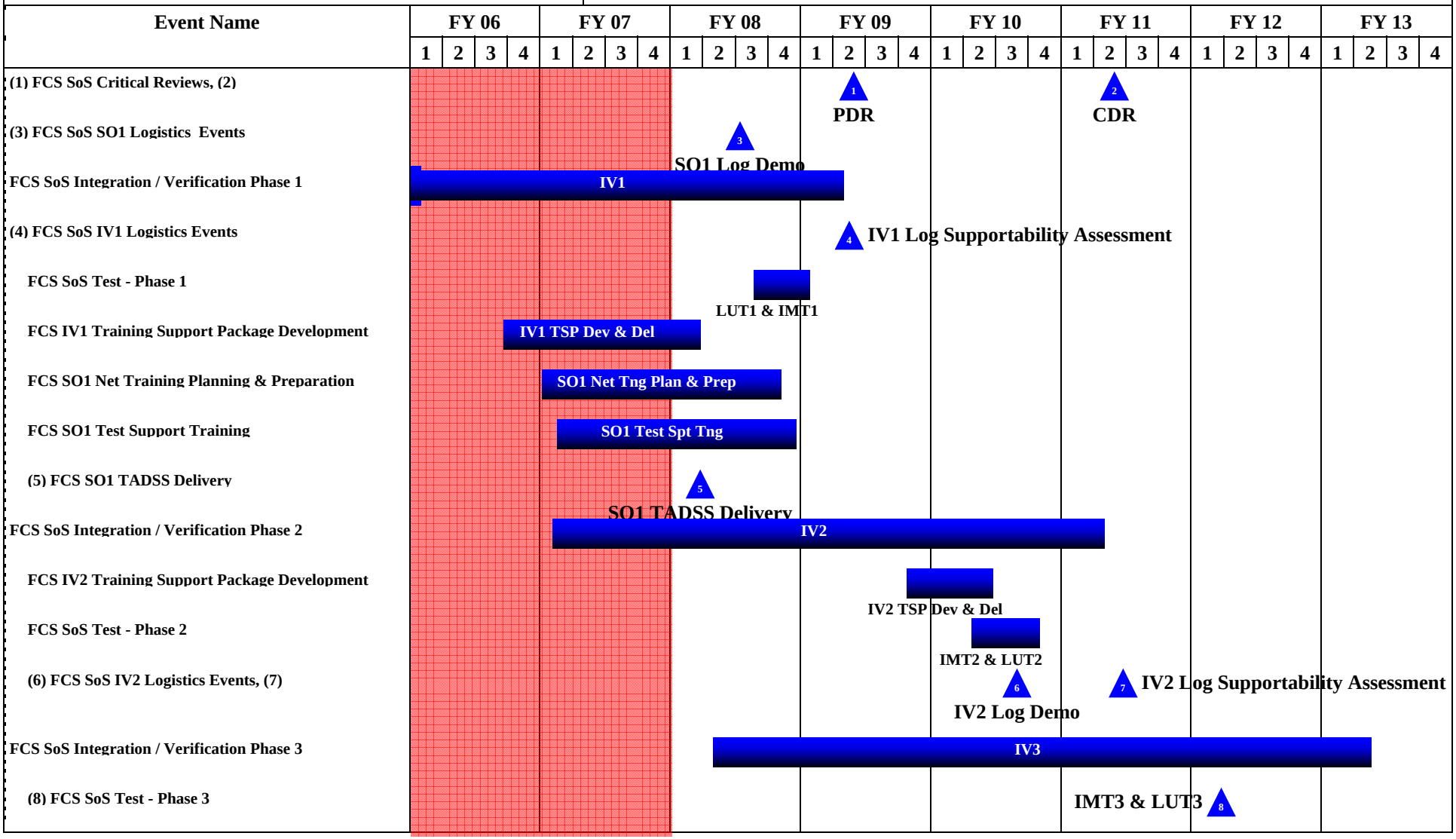
Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F55



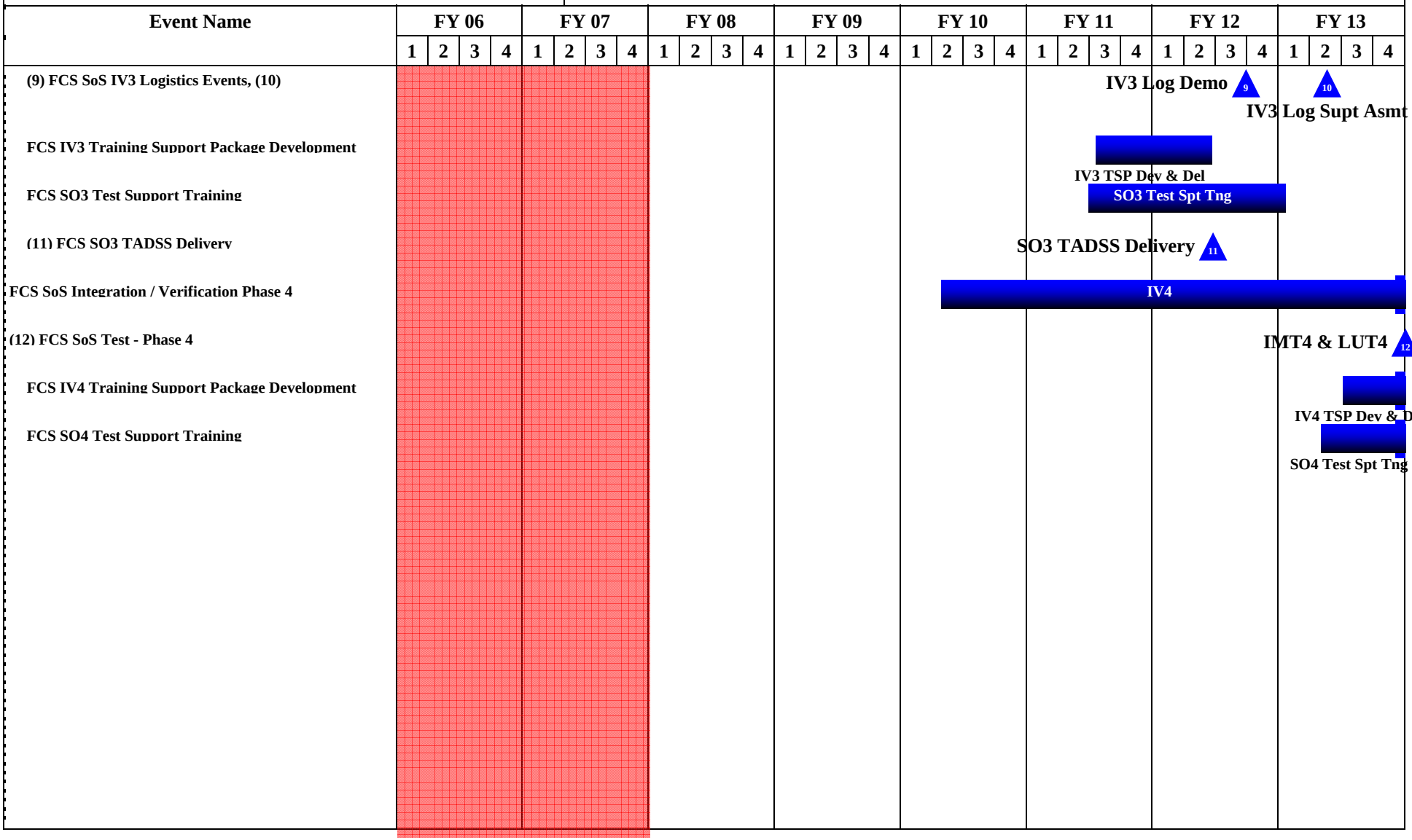
Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F55



Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F55

Schedule Detail	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FCS SoS Critical Reviews				2Q				
						2Q		
FCS SoS SO1 Logistics Events			3Q					
FCS SoS Integration / Verification Phase 1	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
FCS SoS IV1 Logistics Events				2Q				
FCS SoS Test - Phase 1			3Q - 4Q	1Q				
FCS IV1 Training Support Package Development	3Q - 4Q	1Q - 4Q	1Q					
FCS SO1 Net Training Planning & Preparation		1Q - 4Q	1Q - 4Q					
FCS SO1 Test Support Training		1Q - 4Q	1Q - 4Q					
FCS SO1 TADSS Delivery			1Q					
FCS SoS Integration / Verification Phase 2		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q		
FCS IV2 Training Support Package Development				4Q	1Q - 2Q			
FCS SoS Test - Phase 2					2Q - 4Q			
FCS SoS IV2 Logistics Events					3Q			
						2Q		
FCS SoS Integration / Verification Phase 3			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
FCS SoS Test - Phase 3							1Q - 4Q	1Q
FCS SoS IV3 Logistics Events							3Q	
								2Q
FCS IV3 Training Support Package Development						3Q - 4Q	1Q - 2Q	
FCS SO3 Test Support Training						2Q - 4Q	1Q - 4Q	1Q
FCS SO3 TADSS Delivery							2Q	
FCS SoS Integration / Verification Phase 4					2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

FCS SoS IV4 Logistics Events								
FCS SoS Test - Phase 4								4Q
FCS IV4 Training Support Package Development								2Q - 4Q
FCS SO4 TADSS Delivery								
FCS SO4 Test Support Training								2Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F57**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
F57 MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army's Future Combat Systems, Brigade Combat Team (FCS BCT) is a joint system of systems (SoS) consisting of an advanced network integrated within of a series of manned/unmanned systems that via electronic architecture enables unprecedented joint connectivity, situational awareness/understanding, and synchronized operations. It will enhance the Army's most formidable weapon - the Warfighter. FCS provides unprecedented capability to see first, understand first and decisively defeat the enemy on the 21st Century battlefield. This FCS BCT SoS Force will be adaptable - from traditional to irregular warfare - conducted in various complex environments (rural/urban). FCS is the Army's Modernization Strategy and as such, is the #1 acquisition program for the Army.

This project supports development for a variety of Manned Ground Vehicles (MGVs)(exclusive of Non-Line of Sight - Cannon (NLOS-C) specific mission equipment) and includes technology maturation, systems engineering, subsystem/variant unique mission equipment (i.e. armament/fire control), integration/assembly, and prototype build. Also includes following common MGV subsystem development (to include NLOS-C subsystems): armor, suspension, structures, defensive armament system, signature management, NBC, vetronics, power and energy (includes hybrid electric drive), auxiliary systems and hit avoidance system. Project specified MGVs include: Infantry Carrier Vehicle (ICV), Mounted Combat System (MCS), Non-Line of Sight Mortar (NLOS-M), Command and Control Vehicle (C2V), Recon and Surveillance Vehicle (RSV), FCS Recovery and Maintenance Vehicle (FMRV), and Medical Vehicle (MV).

The ICV provides mobility for 11 personnel (two man crew and nine-man infantry squad) on the battlefield. Located within the infantry platoons and companies within the CA battalions. Delivers the dismounted force to the close battle and supports the squad by providing self defense and supporting fires. The ICV carries the majority of equipment freeing the individual Soldier from being burdened with equipment.

The MV provides advanced trauma life support within 1 hour to critically injured Soldiers. The MV serves as the primary medical system within the BCT and will have two mission modules (Evacuation and Treatment). The time-sensitive nature of treating critically injured soldiers requires an immediately responsive force health protection system with an expedient field evacuation system. The MV-Evacuation (MV-E) vehicle allows trauma specialists, maneuvering with combat forces, to be closer to the casualty's point-of-injury and is used for casualty evacuation. The MV-Treatment (MV-T) vehicle provide Advanced Trauma Management (ATM)/Advanced Trauma Life Support (ATLS) treatments and procedures forward for more rapid casualty interventions and clearance of the battlespace. Both MVs will be using installed networked telemedicine interfaces.

The FRMV is the recovery and maintenance system for employment in the FCS BCT. The Brigade Support Battalion (BSB) maintainers will be organized into Combat Repair Teams (CRT) supported by 10 FRMVs. These CRTs will perform in-depth BDAR and unscheduled field-level maintenance requirements beyond the capabilities of the crew to include lift, welding, cutting, and heating of materials.

The NLOS-M is the short-to-mid-range indirect fire support component within the FCS BCT. It will be organic to and provide networked, responsive and sustained indirect fire support to the Combined Arms Maneuver Battalion in the FCS BCT. It fires a suite of 120mm munitions that include special purpose capabilities to provide a variety of fires on demand including precision guided munitions such as precision guided mortar munitions (PGMM). NLOS-M will provide close support and destructive fires for tactical standoff engagement during both offensive and defensive operations in concert with line-of-sight, beyond-line-of-sight, other NLOS, external and joint capabilities in combat scenarios

spanning the spectrum of ground combat and threats.

The RSV features a suite of advanced sensors to detect, locate, track, classify and automatically identify targets from increased standoff ranges under all climatic conditions, day or night. Included in this suite are a mast-mounted, long-range electro-optic infrared sensor, an emitter mapping sensor for radio frequency intercept and direction finding, remote chemical detection, and a multifunction RF sensor. The RSV carries 6 Soldiers (2 common crew and 4 scouts).

The C2V provides the tools for commanders and staffs to command and control various elements of the FCS BCT. Via mission workstations and a common warfighter-machine interface, C2Vs contain the interfaces that allow commanders and their staffs to perform tasks such as fusing friendly, enemy, civilian, weather and terrain situations and distributing this information via a common operating picture. The C2V carries 6 Soldiers (2 common crew and 4 mission crew).

The MCS provides offensive maneuver to close with and destroy enemy forces. The MCS is capable of conducting mounted operations, mounted operations supported by dismounted infantry, and supporting dismounted infantry operations in all environments. The MCS delivers precision fires at a rapid rate to destroy multiple targets at standoff ranges quickly and complements the fires of other systems in the FCS BCT. It is highly mobile and maneuvers out of contact to positions of advantage. It is capable of providing direct support to the dismounted infantry in an assault, defeating bunkers, and breeching walls during the tactical assault. The MCS can engage targets from Beyond Line of Sight (BLOS). The BLOS capability allows the FBCT the ability to stand-off from the enemy's lethality envelope, allowing the MCS to be more lethal, at greater ranges.

The MGV Common Subsystems project includes developmental and engineering effort for the detailed design and integration of common components and sub-systems into a common chassis configuration applicable to the entire fleet of MGV combat vehicles. Major subsytems included in the Common Chassis design include a Hit Avoidance System (HAS), Propulsion (Hybrid Electric Drive with a High Power Density Diesel Engine), active dampening suspension with band track, Common Crew Station (CCS), Close Combat Armament System (CCAS), hull structure and armor, chassis auxiliary, Vehicle Electronics and Power Distribution (Vetronics). The focus of this effort is on a producible, reliable, sustainable, maintainable, and affordable common chassis design.

GOVERNMENT MGV GFX
Government GFX XM307 Prototypes- A light weight portable Advanced Crew Served Weapon utilizing 25mm air burst ammunition. XM307 has a full solution fire control system that includes a laser range finder and a day/night sight. It is highly portable within small soldier units and provides overwhelming lethality compared to existing systems. General Dynamics Ordnance and Tactical Systems is developing ammo. Kaman Dayron is developing the fuze and Raytheon is developing the full solution fire control.
FY06 - Develop requirements/specifications and ICDs for the XM307 weapon to be used on UGV or MGV variants. As a result of the Army decision in support of the FY08-13 POM, XM307 is no longer funded in the FCS Program.
Government GFX mobility Shaker Table rent to test the Mounted Combat System Mobility Firing fixture on the TARDEC Shaker Table.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
CONTRACTOR INFANTRY CARRIER VEHICLE (ICV)FY06 Develop specification, SOW and release Request for Proposal (RFP) for ICV multimedia slip ring. Release Gun Turret Drive System (GTDS) and Multi-Media Slip Ring (MMSR) Request for Proposal (RFP) and execute competitive source selection. Ammunition Feed System Brassboard Complete. Conducted ICV SFR. Initiate preliminary design and integration activities. Developed and update Subsystem Interface Control Documents(ICD) and critical item development specifications (CIDS). Developed Best Technical Approach (BTA) concepts. Update Subsystem Interface Control Documents (ICDs).	6179	11474		

Develop ammo feed system demonstrator and dry cycled 30mm rounds in initial turret test rig.FY07 Award subcontracts for the MMSR and the GTDS. Release ammunition feed system RFP, execute competitive source selection and award subcontract. Perform specialty engineering analysis (reliability, maintainability, logistics, HFE, and system survivability). Conduct Manned Ground Vehicles (MGV) Interim Program Review (IPR). Initiate Preliminary Design. Update Architecture products. Update ICDs. Initiate design activities for MK44 turret for ICV and RSV, Software builds, SigMan tests. Complete Human Factors Engineering (HFE) testing. Integrate C4ISR Emulators into SIL and Turret Test Rig. Start brass board ammunition feed system fabrication to evaluate reliability versus affordability trade. Perform specialty engineering analysis (reliability, maintainability, logistics, HFE, and system survivability).				
CONTRACTOR MOUNTED COMBAT SYSTEMS (MCS)- FY06/07 Preliminary Design Ammunition Sympathetic Detonation Mitigation System. Preliminary Design Ammunition Data Link for Beyond Line Of Site (BLOS) ammunition. Preliminary design and test of 120mm light weight gun system (XM360)to include firing of over tube. Preliminary design of 120mm Ammunition Handling System (AHS). Preliminary Design of Armament System and Mission Module (Turret Structure and Hardware/Software Integration). Completed the majority of the preliminary design efforts of the Armament consisting of the turret structure, ammunition handling system and the primary weapons assembly.Conducted System Functional Review (SFR). Designed sympathetic detonation barrier and conducted coupon testing. Fabricated three cannons for testing. Completed contracts for major sub-systems. Completed long lead procurement for initial assembly of the static firing fixture. Begin long lead procurements for the mobile firing test rig. Delivery of Prototype Ammunition Handling System. Delivery of the Lightweight 120mm Primary Weapon Assembly (XM360). Build of MCS Firing Fixture: Turret Integration of XM360 and Ammo Handling System Transfer Mechanism. Improve the following systems reliability through testing. Sympathetic Detonation Mitigation, Ammunition Data Link for use with BLOS Munitions,Dynamic Muzzle Reference Sensor, Advanced Fire Inhibit System, High Voltage Electric Gun Turret Drive, Ammunition Handling System. Begin Fabrication of Firing Test Rig (Drivable Common Chassis with Firing Fixture Integrated Turret) for full MCS System Integrated Testing of Firing on the Move. Continued Development of IV2 Subsystem Integration Capability. Develop initial fire control software for the firing fixture testing. Begin development of software for mobile testing. Start initial integration of the software and communications on the mobile firing test rig.	57413	69503		
NON-LINE OF SIGHT MORTAR (NLOS-M) FY06 In-Bore Round Retention Subsystem Component Maturation: Procured Surrogate Tube and Breech. Developed and Build Breech with incorporated IBARS. Developed and Start Fabrication of Firing Platform. Developed specification, SOW, release RFP and Award Contract for NLOS-M multimedia slip ring. Released Mortar Tube and Breech RFP, and Award Contract. Completed its system functional review in coordination with the rest of the FCS and MGV systems allocating system requirements and baselining a concept. Tube and breech vendor selected and preliminary design will start on the integrated vehicle. Component Maturation continuing with round retention ammunition handling and slip ring technology development and integration. Continuing the reliability investment program. Continuing the development and construction of an NLOS-M firing platform. FY07 Multimedia slip ring development and delivery of brassboard.Deliver Firing Platform,first round fired Feb 07. Perform Multivariable Testing for In-Bore Round Retention Subsystem Component Maturation. Procure, fabricate, and integrate hardware for Propellant Storage and Handling Component Maturation. Component maturation and integration continues on round retention, ammunition handling, and slip ring.Reliability Investment Program continued in FY07. Preliminary Design Efforts Continue in FY07. NLOS Mortar Firing Platform delivered. NLOS-M Firing Platform First Shot Down Range.	13977	19889		
CONTRACTOR COMMAND & CONTROL VEHICLE (C2V)- FY06-Completed C2V mock-up build (habitability study). Constructed C2V installed performance test bed. Initiated C2V installed performance and roof-top communications equipment de-confliction studies. Initiated preliminary design of the mission work station. Completed system level requirement allocations to subsystems and subsystem requirements development by IPDR. Continued C2V habitability study and Soldier-centric evaluations. Updated subsystem critical item development specifications (CIDs) and interface control documents (ICDs). FY07 C2V - Conduct communications lab integration testing	19494	17248		

in preparation for field testing. Conduct C2V installed performance component maturation testing at EPG. Continue User Jury evaluation process for Mission Work Stations. Develop preliminary design for C2V Mission Work Station and integrated platform. Conduct displays hardware R&D to address physical packaging and environmental challenges. C2V model (IV1) delivery to SoSIL. Begin SIL I&T of initial common/C4ISR equipment in C2V configuration. Integrate mission module and development efforts with C4ISR emulators into the system integration lab. Conduct software build efforts including common software integration. Continue to update subsystem critical item development specifications and interface control documents. Continue human factors engineering analysis and testing.				
CONTRACTOR RECONNAISSANCE & SURVEILLANCE VEHICLE (RSV) - FY06-Completed RSV mock-up build (physical and MANPRINT). Began RSV installed performance and roof-top sensor de-confliction studies. Completed System Functional Review. Matured subsystem critical item development specifications and interface control documents. Updated best technical approach. FY07 RSV- Preliminary design activities for RSV mission work station and integrated platform. RSV System Integration Laboratory (SIL) Build-up. RSV Simulation Delivery to SoSIL (IV1). Continue installed performance and roof-top sensor de-confliction studies. Update subsystem critical item specifications (CIDS) and interface control documents (ICDS). Continue human factors engineering analysis and testing.	19048	18337		
CONTRACTOR FCS RECOVERY & MAINTENANCE VEHICLE (FRMV) FY06 - Conducted FRMV SFR & Initiated preliminary design and integration activities. Developed Subsystem draft CIDS. Developed BTA concepts. Updated Subsystem Interface Control Documents (ICDs). Initiated the development of FRMV Integrated System Model to evaluate alternate crane designs and towing concepts. Performed platform stability analysis for Tactical Crane System. FY07 FRMV - Release Mission Equipment RFPs, execute competitive source selections & award subcontracts for Crane and Winch subsystem/components. Concept maturation and fabrication of FRMV towing system brass board. Conduct Manned Ground Vehicles (MGV) Interim Program Review (IPR). Initiate Preliminary Design. Execute Concept Maturation and Fabrication of Tactical Crane System Brass Board. Update Architecture products. Update ICDs. Concept maturation and fabrication of FRMV towing system. Develop full scale FRMV mock-up. Evaluate man-print issues.	7920	15876		
CONTRACTOR MEDICAL VEHICLE (MV) - FY06- Updated full scale mock-up and designed and integrated a brassboard litter lift system. Demonstrated integration of MC4 Software with MV Rapid Automated Medical Processor System (RAMPS). Demonstrated and evaluated prototype shelter from Natick Soldier Center. Conducted MV SFR. Completed Weight IDA#1 & #2. Developed Subsystem draft CIDS. Developed BTA concepts.Completed AL1 Use Cases. Updated Subsystem Interface Control Documents (ICDs). FY07 MV - Initiate development of treatment table. Conduct Interim Program Review (IPR). Initiate preliminary design and integration activities. Evaluate COTS shelters and downselect. Complete system and subsystem level trade studies. Complete AL2 Use Cases. Update Architecture products. Update ICDs. Build prototype Litter Lift System.	5639	8022		
COMMON SUBSYSTEMS - Specify, Design, Procure and Begin Testing of Early Prototype Configuration (EPC) and Production Prototype Configuration (PPC) threshold Common Subsystems. Finalize SIL Development Plans and initiate testing. Baseline & initiate design of SW Build 1 Requirements. Complete system, functional, thermal and software architectures for MGV. Common Subsystem size, weight, power, cooling, reliability and cost allocations completed. Complete Common system and subsystem EPC/PPC best technical approach (BTA) with appropriate trade studies. Complete initial EPC ICDs for internal and external interfaces. Document Common risks and their associated mitigation plans. Begin Common Preliminary Design. Initiate Procurement of Inc 1 Subsystems. Common PPC ICDs baselined. Conduct NLOS-C Design Reviews. Major subsystem procurements to support NLOS-C EPC vehicles. Begin NLOS-C EPC Fabrication. Complete ATR Design and begin fabrication. Band Track Component Maturation. COMMON SUBSYSTEMS FY07 - Specify, design, procure and begin testing of EPC and PPC Threshold Common Subsystems. Finalize SIL Development Plans and initiate testing. SW Build 1 Requirements Baseline Design initiated. Complete system, functional, thermal and software architectures for MGV. Common Subsystem size, weight, power, cooling, reliability and cost allocations completed. Delivery and integration of propulsion	339110	372475		

assemblies (High Density Diesel Engine, Generator, Traction Drive System, etc). Complete Common system and subsystem EPC/PPC best technical approach (BTA) with appropriate trade studies. Complete initial EPC ICDs for internal and external interfaces. Document Common risks and their associated mitigation plans. Begin Common Preliminary Design. Initiate Prototype Procurement of PPC Subsystems. FY07 - fabricated 4 (EPC configuration)common chassis.				
GOVERNMENT GFX XM307 - FY06: Instituted contract modifications that incorporate FCS specific requirements for a remotely operable weapon. Conducted a revised System Functional Review against the updated requirements. Instituted a reliability improvement program to address the aggressive reliability requirements which were flowed down from the FCS program. The contractor had previously shown compliance to the contract 1500 mean round between stoppage (MRBS) value and appeared on the development path to attaining the incentivized 3500 MRBS value. Subsequently, the contractor made some design approach modifications that would simplify the mechanical action of the weapon and proved a point estimate MRBS value of 6500 (with analysis indicating a potential value at maturity of over 15000).FY07: Down-selected an electronic air bursting fuze approach between the assessed options of mechanical an electrical. The XM307 effort was terminated in Jan 07 due to Army funding constraints. This estimates includes estimated Termination cost.	30689	15252		
Small Business Innovative Research/Small Business Technology Transfer Programs		15870		
Total	499469	563946		

B. Other Program Funding Summary	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
0604660A FCS Manned Grd Vehicles & Common Grd Vehicle Components			696333	772548	791186	361201	215665	103885	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management			1589466	1407410	1888349	1929853	1299062	1034307	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms			41164	34220	14398	9301	4587	1344	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles			90667	96666	65206	43912	27038	3603	Continuing	Continuing
0604664A FCS Unattended Ground Sensors			10999	12942	19103	16874			Continuing	Continuing
0604665A FCS Network Hardware & Software			678781	536387	336471	367894	292770	170602	Continuing	Continuing
0604646A Non Line of Sight - Launch System	216668	320650	253410	199064	40329	6000			Continuing	Continuing
0604647A Non Line of Sight - Cannon	132223	110998	137802	89189	71906	43531	28971		Continuing	Continuing
0604666A FCS Spin Outs			64796	32442	65000	50000	50000	10000	Continuing	Continuing
0603639A FCS MRM			44578	45733	71961	56698	107077	51079	Continuing	Continuing
0604715A STRICOM/NAWCTSD Support			381	391	401	409	418	429	Continuing	Continuing
WTCV G86100 FCS Core Program			79483	155838	149367	683788	2194625	5795292	Continuing	Continuing
WTCV G86200 FCS Spin Out Program			20123	172746	373790	557060	779742	958060	Continuing	Continuing
0604645 F52 UAV Recon & Sensors	50692	26360							Continuing	Continuing

0604645 F53 UGV	121528	106516							Continuing	Continuing
0604645 F54 UGS	31242	10612							Continuing	Continuing
0604645 F55 SUSTAINMENT	139389	106517							Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing
0604645 F61 SoS Engineering and Program Management	2027766	2142970							Continuing	Continuing

Comment:

C. Acquisition Strategy Fiscally constrained Budgets, coupled with the fiscal challenge to meet the Army_s reset and modernization requirements, have caused the Army to implement FCS program adjustments. These adjustments maintain the Army_s focus on FCS-equipped Brigade Combat Team development and minimize the efforts on operational requirements. The adjustments to the FCS Program acquisition strategy fall into the following categories:

1. Defer the following platforms from the FCS(BCT): ARV-A, ARV-RSTA, UAV Class II, UAV Class III
2. Refine the schedules for the development of the Core and Spin Out capabilities so that the Army can benefit from the savings realized with concurrent testing.
3. Increase the rate of fielding of FCS technologies to the current force.
4. Fully fund the Spin Out technology Insertion program and development and fielding of the Mid-Range Munitions (MRM) and Advanced Kinetic Energy (AKE) munitions.
5. Revise platform configurations to decrease the production cost of a single Core FCS BCT from $6.2 billion to $5.9 billion (FY03 Constant dollars) by deferring/deleting selected sensors and other associate hardware (such as the XM307 machine gun).

The following is a history of the LSI SDD Contract.

	Contract Award	Definitization Date
Original Contract Award	30 May 2003	10 Dec 2003
Modified for POM 06-11 Changes	6 Aug 2004	2 Mar 2005
Conversion to FAR Base Contract	23 Sep 2005	28 Mar 2006
Modification for POM 8-13 Adjustments	Feb 2007	May 2007

The R forms are based on estimated effects of the Army adjustment. Upon completion of negotiation of the contract modification, caused by this adjustment, reprogramming actions may be required to realign the funding buckets to the contract.

Termination Liability associated with this contract is included in PE 0604645 Project F61.

IAW Section 214 of the FY2006 National Defense Authorization Act, this project was converted to a stand alone Program Element (0604662A Project FC3) commencing with the FY2008 President's Budget submission to Congress.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F57

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
INFANTRY CARRIER VEHICLE (ICV)	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 2	39447	6179	1-3Q	11474	1-3Q						57100	
MOUNTED COMBAT SYSTEMS (MCS)	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 1	108237	57413	1-3Q	69503	1-3Q						235153	
NON-LINE OF SIGHT MORTAR (NLOS-M)	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 3	23805	13977	4Q	19889	1-3Q						57671	
Contractor Common Component Vehicle Subs	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 1,2,3	228860	339110	1-3Q	388600	1-3Q						956570	
COMMAND & CONTROL VEHICLE (C2V)	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 1	39426	19494	1-3Q	17248	1-3Q						76168	
RECONNAISSANCE & SURVEILLANCE VEHICLE (RSV)	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 1	39828	19048	1-3Q	18337	1-3Q						77213	
Medical Vehicle (MV)	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 2	4225	5639	1-3Q	7767	1-3Q						17631	
FCS RECOVERY & MAINT VEH (FRMV)	OTA/FAR	THE BOEING COMPANY - ST. LOUIS, MO see remark 2	6602	7920	1-3Q	15876	1-3Q						30398	

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F57**

GFX XM307 Prototypes	Direct	General Dynamics Arm. & Tech. Products, Charlotte, NC		30689	2-3Q	15252	1-3Q						45941	
Subtotal:			490430	499469		563946							1553845	

Remarks: Remark 1: Subcontractor: General Dynamics Land Systems - Sterling Heights, MI
Remark 2: Subcontractor: BAE - Ground Systems Division - Santa Clara, CA
Remark 3: Subcontractor: BAE - Armament Systems Division - Minneapolis,MN

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

Remarks: All Test and Evaluation costs for this project are included in F61 SoS Engineering and Program Management project.

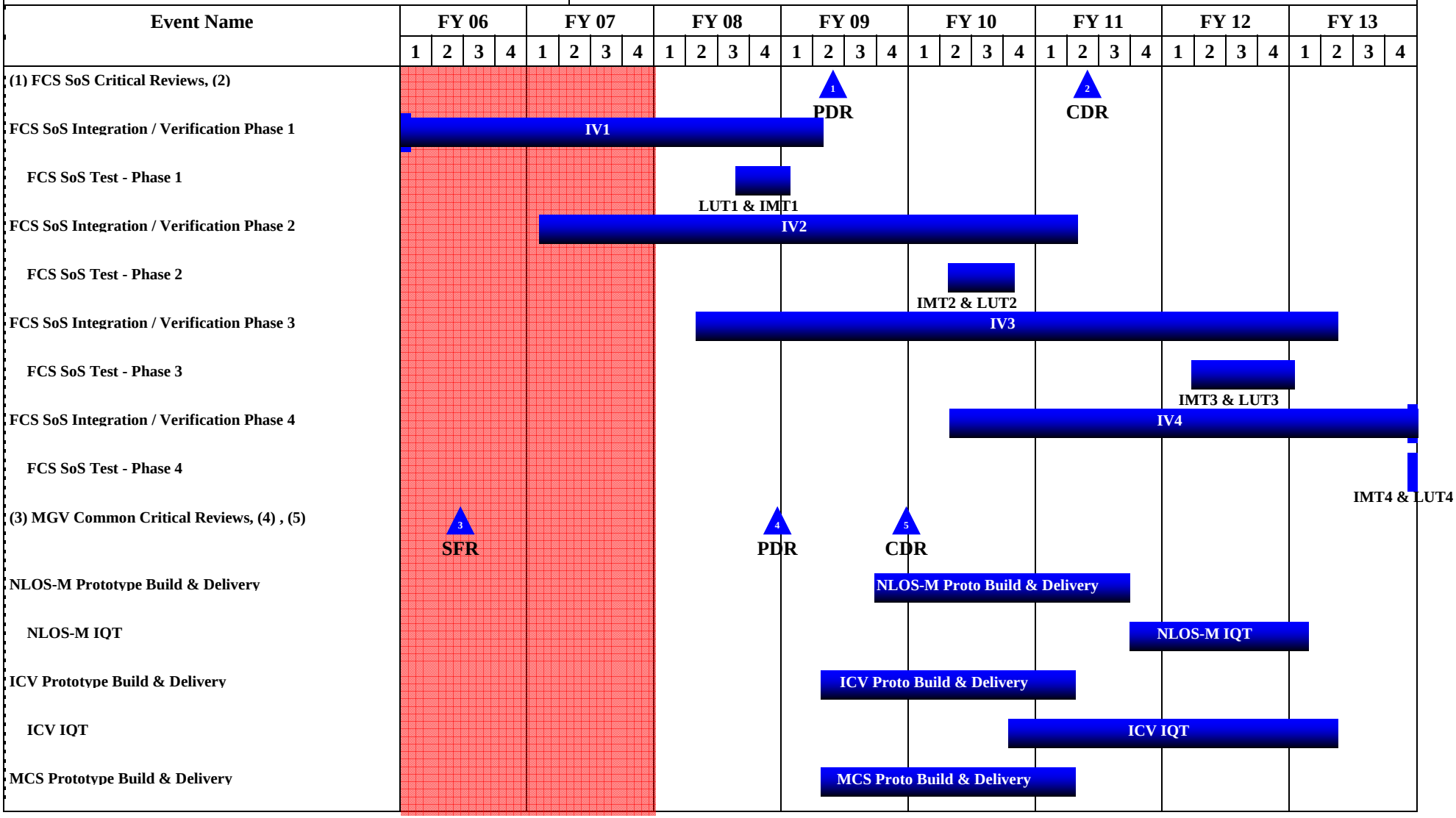
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

Project Total Cost:			**490430**	**499469**		**563946**							**1553845**	

Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F57**



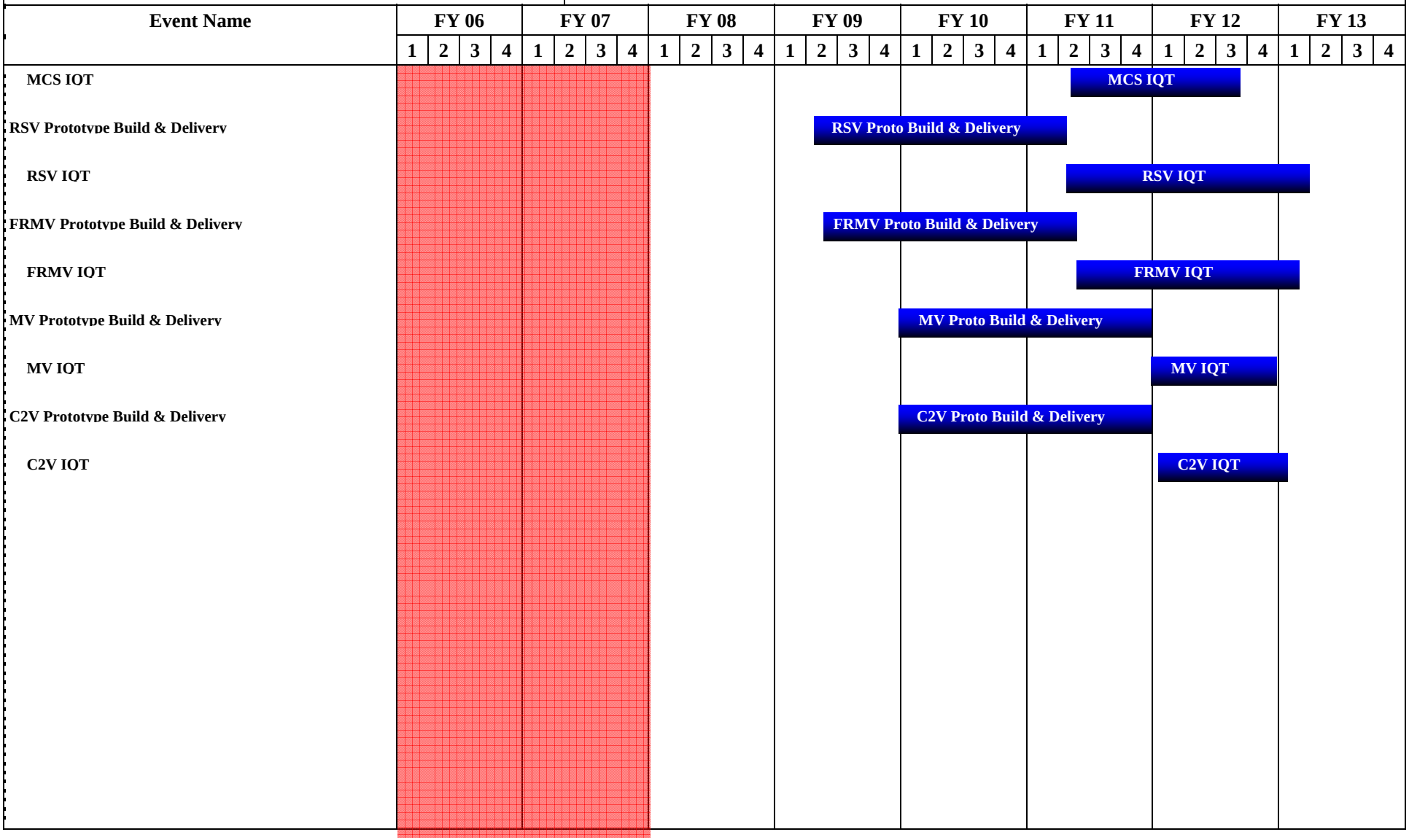
Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F57



Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F57

Schedule Detail	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FCS SoS Critical Reviews				2Q				
						2Q		
FCS SoS Integration / Verification Phase 1	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
FCS SoS Test - Phase 1			3Q - 4Q	1Q				
FCS SoS Integration / Verification Phase 2		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q		
FCS SoS Test - Phase 2					2Q - 4Q			
FCS SoS Integration / Verification Phase 3			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
FCS SoS Test - Phase 3							1Q - 4Q	1Q
FCS SoS Integration / Verification Phase 4					2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
FCS SoS Test - Phase 4								4Q
MGV Common Critical Reviews	2Q							
			4Q					
				4Q				
NLOS-M Prototype Build & Delivery				3Q - 4Q	1Q - 4Q	1Q - 3Q		
NLOS-M IQT						3Q - 4Q	1Q - 4Q	1Q
ICV Prototype Build & Delivery				2Q - 4Q	1Q - 4Q	1Q - 2Q		
ICV IQT					4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
MCS Prototype Build & Delivery				2Q - 4Q	1Q - 4Q	1Q - 2Q		
MCS IQT						2Q - 4Q	1Q - 3Q	
RSV Prototype Build & Delivery				2Q - 4Q	1Q - 4Q	1Q - 2Q		
RSV IQT						2Q - 4Q	1Q - 4Q	1Q
FRMV Prototype Build & Delivery				2Q - 4Q	1Q - 4Q	1Q - 2Q		
FRMV IQT						2Q - 4Q	1Q - 4Q	1Q
MV Prototype Build & Delivery				4Q	1Q - 4Q	1Q - 4Q		
MV IQT						4Q	1Q - 4Q	

C2V Prototype Build & Delivery				4Q	1Q - 4Q	1Q - 4Q		
C2V IQT							1Q - 4Q	1Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F61**

COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
F61 S o S Engineering and Program Management	2027766	2142970							Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army's Future Combat System (Brigade Combat Team) (FCS (BCT)) is a joint system of systems consisting of a network and a combination of manned and unmanned systems that use an advanced network architecture to enable levels of joint connectivity, situational awareness and understanding, and synchronized operations previously unachievable. It is designed to interact with and enhance the Army's most valuable weapon - the Soldier. When fully operational, FCS will provide the Army and the joint force unprecedented capability to see the enemy, engage him on our terms, and defeat him on the 21st Century battlefield. The Army's first modernization effort in nearly four decades; FCS is the embodiment of the modular force, a modular system designed for "full spectrum" operations. It will network existing systems, systems already under development and future systems to be developed to meet the requirements of the Army's Future Force. It is adaptable to traditional warfare as well as complex, irregular warfare in various rural and urban terrains. It can also be adapted to civil support, such as disaster relief. FCS is the #1 priority acquisition program for the Army.

This project includes System Development and Demonstration (SDD) contractor efforts associated with System of Systems (SoS) engineering, analysis and integration, Network Software and Hardware, SoS Test and evaluation and program management. In addition to these contractor efforts, this PE/project also includes all Government efforts (test,program management, analysis, contracting, Financial management and support to to other DOD agencies for joint programs and collaboration efforts with FCS.

The following summarizes what is included within the SOS Engineering and Program Management Project:

SoS Engineering - Conduct SoS reviews, top level trade studies, and architectural design of the SoS including requirements decomposition, requirements flow down, development of specifications, interface definitions, configuration management oversight, specialty engineering, and the analysis and verification of integrated force effectiveness.

Program management - The development of processes, tools, meetings, Earned Value Management (EVM), risk management, software management, etc used to manage the total program (to include subcontractors/Partners) to achieve the SoS program goals within the available dollars and schedules.

NETWORK SOFTWARE - Includes development (design,code, and test) of network software required to implement the network and common software for the network or nodes on the network. Includes the SoS Common Operating Environment (SOSCOE) suite of network and security services, together with distributed network applications software for; battle command, data fusion, logistics decision support and mission readiness, as well as training applications.

COMMON NETWORK HARDWARE - Includes design, development and prototype procurement of common hardware required for implementation of the data network. This includes sensors, communications hardware and computer processing capabilities.

Because of the criticality of the Network (Hardware and Software) the Army has created a new PE (concurrent with the FY08 President's budget submission to Congress) to provide Congress more visibility for all Network hardware and software development efforts.

SoS Test and Evaluation - Includes contractor and Government test and analysis to ensure SoS and FoS performance is effectively and efficiently achieved to specific criteria. The results of the SoS test is validation/verification that the resulting specifications meet the ORD and O&O requirements

Government Support Costs - Includes funding for government personnel to include labor, travel, training, supplies, and other support costs (support contractors, Automated Data Processing (ADP), communications, supplies, and equipment). It includes support efforts for other services for Joint Programs, Multinational Project Arrangements, and collaborative efforts. Includes the procurement of Government Furnished Equipment/Items/Data (GFX) for the LSI. GFX is used when procurement through the government is less expensive than through the LSI.

Accomplishments/Planned Program:	FY 2006	FY 2007	FY 2008	FY 2009
GOVERNMENT - SYSTEM ENGINEERING & PROGRAM MANAGEMENT (SEPM) SoS Engineering - Participate and ensure the government's best interest/value are considered in the following: SoS reviews, trade studies, architectural management, requirements decomposition, requirements flow down, development of specifications, interface definitions, configuration management oversight, specialty engineering, and the analysis and verification of integrated force effectiveness, Software Management, Risk Management, Modeling and Simulation Management, Performance Assurance Management, Integration & Verification Management, Technology Management, Experimentation, and FCS Spin Out Development. PM - Provide integrated program management (i.e. planning, directing, tools and controlling functions, for all development activities, program control, procurement and contracts management, operations management, Congressional title 10 oversight, cost analysis and management, Budget development and justification, Earned Value Management, integrated master schedule development and management, Complementary Program management and operations management.	105298	128098		
GOVERNMENT - SYSTEM TEST & EVALUATION (STE) Defense Research Engineering Network (DREN) Connectivity: Funding for connectivity (point-of-service fees and hardware purchases) of SoSIL nodes to the (DREN). AMMUNITION: Procurements includes ammunition to support firing fixture testing and integration testing including with NLOS-C testing. ATEC Test Integration Network (ATIN): Development of the ATIN providing intra-range and inter-range connectivity between all ATEC test centers and the SoSIL distributed network. Threat Systems/Simulators and Test Targets: Funds PM-ITTS to develop and procure threat systems and simulators and test targets in support of FCS test. INFRASTRUCTURE: Development of the SoSIL nodes at the White Sands Missile Range and at the APG for local integration efforts of FCS variants. MODELING AND SIMULATION FOR TEST: The development of test tools to analyze results from Force-on-Force simulations, integrated spectral terrains for FCS applications, Digital Collection, Analysis and Review (DCARS), Test Conduct and Reporting System (TCARS), and Role Player Work Station (RPWS). FCS Unique Instrumentation: The development and implementation of FCS unique instrumentation (Advanced Passive Armor Test Capabilities, Precision Engagement Instrumentation, enhancements to meet E3 specification, and telemetry expansions) which will bridge critical instrumentation shortfalls at ATEC ranges. Test Range Support (Test Execution at Army Test Ranges): Specialty testing to include initial nuclear radiation (INR) survivability testing of MGV components and CBRN coupon material testing, MCS gun qualification and AHS compatibility testing, NLOS-C and NLOS-M compartmentation testing, NLOS-C cannon pre-fatigue testing, cannon breech cooling testing, and laser ignition testing, co-site and sensor performance testing, UGV ANS testing, co-site, and sensor performance, and NLOS-C and MCS lethality testing will be conducted.	110712	119779		
GOVERNMENT - MODELING AND SIMULATION (M&S) Funds are provided for enhancement of ATEC, RDECOM and TRADOC M&S capabilities essential to implement the FCS M&S strategy. This strategy is dependent on linking FCS based M&S requirements	11000	13699		

with existing Army M&S capabilities with a focus on minimum "built from scratch" program M&S and maximum reusable integration of Army M&S capabilities. PM FCS (BCT) will work with 3 Commands to create persistent, leave behind capabilities for the Army in the area of SoS M&S. 3CE will develop enhanced, more interoperable M&S tools, capabilities and processes that will increase the overall capabilities of M&S These improved capabilities will reduce the overall costs to the LSI in integration, lifecycle applicability and reduce cycle time from requirements to integration with FCS simulation environment, particularly in IP1 and beyond. Application will be developing reference implementations that move M&S from cold war capabilities to those of NW-centric M&S. 3CE will also provide a larger library of tools available for consideration, incorporation and breakdown of the funding based on integrated 3CE ongoing planning, M&S technical program management and integration with FCS program. M&S persistent network nodes that link all 3CE commands together and to the SoSIL network. M&S requirements, architecture and gap analysis for 3CE and integration with the same from FCS LSI. M&S capability identification and development of emerging technologies. Capability Integration and interoperability support. FCS IV&V support will continue throughout the program. IV&V Strategy and Master Plan. Multi Cell & Dismounted Command and Control (M&DC2). M&DC2 is being recommended by TRADOC for use by the Army and for a replacement for the MC2 Device at UAMBL (their current BC surrogate). M&DC2 needs to convert from OTB to OOs as its principal battle environment.				
GOVERNMENT SPIN OUT 1 - This effort provides for the integration of FCS technologies, the Integrated Computer System (ICS) and the Ground Platform Communication System (GPCS) into current force vehicles to include the Abrams M1A2SEP, the Bradley M2A3 and the High Mobility Multi Wheeled Vehicle (HMMWV). Efforts during the FY06-FY07 period include the design of integration kits, software integration, procurement of material to build prototypes, finalization of ICD/CDRs and initial contractor testing for the LUT configuration. Efforts also include procurement of long lead material for the different platform A-Kit designs. Preliminary Design Reviews (PDR) for the three current force platforms A Kit designs. Provide for Integrated program management to include the systems engineering, test, coordination, budget and cost development and justification, and the integrated master plan and schedule management.	7400	27900		
GOVERNMENT - OTHER and GFX - GFX supports the LSI contract. Dollars to fund GFX efforts came off the LSI contract as part of the definitization of the transition contract award. GFX requirements include the following: Government support to JEFX Experimentation, Multinational Interoperability support, C4ISR hardware to support Experiments 1 and 2, C4ISR End to End Network, hardware required to support Spin Out 1 assessment, TRADOC support including (TDY), Modeling and Simulation software updates, Mobility Shaker Support rent, support to NV labs. Government Other costs include ACE site licenses funding, SE/PM government labor, other non labor government costs and STEs from the base contract and transition.	79533	153775		
CONTRACTOR PROGRAM MANAGEMENT - Develop the processess, models, tools and management structure to integrate all subcontractor partners into one team, to meet cost, schedules,and technical performance requirements in the contract. This includes program overview, demonstration, Earned Value Management, briefings, Demos, reports, meetings to support Program, risk Management, subcontract Management, Small and Minority Business Integration, data management, operation Management, contract Management, CDRL Management, Procurement, Acquisition Management, SDD Affordability/CAIV/ Life Cycle Management, Development of program baseline and Integrated Master Schedule Development. FY06 accomplishments include: the SEPM plans for FY07 including upgrade to the Single Integrated Model V4.0, SoSADD release, Sos Operationsal Views update, Engineering Iteration 1 SoS Design, EA1 Readiness Anchor Point, EI1 Assesment Anchor Point. Integration Planning readiness assessment and Experiment 1.1 report to be released. BCT Single Integrated Model V4.0 Updated or Released. ARCH Single Integrated Model V3.y updated. ADP updated. SoSADD Release.SoS Operational Views updated. EI1 FCS UA SoS Design. EI1 Engineering Iteration Readiness Anchor Point (EI1RAP). EI1 Engineering Iteration Assessment & Assessment Anchor Point (EI1AAP). IV1 Planning readiness assessment. Experiment 1.1 report released.	163384	182700		
CONTRACTOR NETWORK SOFTWARE - Network Software FY06 Accomplishments; Complete Development & Test & Formal	354189	316841		

Qualification Test of Build 1.5 and 1.5.1 SOSCOE. Begin development of SOSCOE build 1.8. Design, Develop, Integrate and Test Spin Out 1 Engineering Release of Battle Command. Design, Develop, Integrate, and FQT Network management Software Build 1. Begin development of Platform Soldier-mission Readiness System (PS-MRS) (Build 1 Eng. Drop) and Logistics Decision Support System (LDSS) (Build 0.5). Conduct JEFX 06 Exercise with the US Air Force. Complete Design and Integration of Experiment 1.1 Hardware and Software. Conduct Experiment 1.1 Lab and Field ExperimentsFY07 Planned Accomplishments; Complete development and FQT SOSCOE Build 1.8SOSCOE (1.2.1.2.1.1). Begin development of SOSCOE Build 2.0. Complete development and FQT Battle Command build 1.0. Complete development and FQT Network Management Software Build 1.0 Engineering Release 2. Complete development of Platform Soldier-Mission Readiness System (PS-MRS) (Build 1 Eng. Drop) and Logistics Decision Support System (LDSS) (Build 0.5). Complete Experiment 1.1 Field Demonstration. Deliver Experiment 1.1 Final Report. Begin planning ativities to support Hardware and Software Requirements for JEFX 08. Complete Initial Objective Definition for Experiment. 2.1				
CONTRACTOR NETWORK - HARDWARE - Contractor Network Hardware FY 06 Accomplishments. Procure and Receive JTRS (Joint Tactical Radio System) pre-EDM GMR 1 radios (50) and surrogate HMS 5 radios (186). Conduct Design Reviews For Integrated Computer Systems. Develop and Deliver ICS 22 Simulators & 51 Emulators to Test Labs. Develop and Deliver EI1/IV1 Sensor Simulators. Complete Technical Maturation from TRL 4 to TRL 5 of Multi-Function RF System (to TRL 6 in FY07). Completed SFR for most UGS, Air, and Ground Sensors (Except for Sensors awarded in FY06). Execute Preliminary Design Review for MFRF/CID, R&SV, MREO, MR Mast, and AiTR Ground Sensors. FY07 Planned Accomplishments; Deliver 72 ICS Emulators 21 ICS Type VI Prototypes and 1 Brassboard. Deliver GPCS (Ground Platform Communication System) Type 20 for HMMWV and 12 payloads for Spin Out vehicles. Deliver Simulators and Emulators to C4 SILs. Execute PDR for Class I, Class IV EOIR Sensors. Deliver updates to ASI & GSI Sensor Simulations. Deliver Sensor Emulators for R&SV and FRMV Emulator. Conduct PDR for Short-range EOIR, Acoustic, Emitter Mapping, and SUGV EOIR Ground Sensors and CDR for the Balance of the Ground Sensors. Complete Tech Maturation effort moving MFRF and AiTR to TRL 6. Complete First MFRF Brass board Sensor	306540	355660		
CONTRACTOR SYSTEM REQUIREMENTS & INTEGRATION - FY06/07 SoS Engineering - Conduct architectural design, requirements decomposition and flow down, development of specifications, interface definitions, configuration management oversight, specialty engineering, and the analysis and verification of integrated force effectiveness. This includes: completing baseline system and software architectures, complete initial Interface Control Documents (ICDs) for internal and external interfaces, complete the baseline Prime Item Development Specifications (PIDS)-(1200 requirements). The Integrated concepts and requirements refinement for operational Systems engineering include; conducting FD/FA, develop and design the Design Reference Mission Profiles to insure FCS equipment meets Army requirements, conduct Force Trade assessment, O & O Refinement, and Operational Views for Architecture. Participate in Experiment 1.1, Develop/Plan/ and execute IV1, to include architecture development, and defining interfaces for systems entering preliminary design. Support JFEX Experimentation with A/B kit design and fabrication. Support Experiment 1.1 by modifying vehicles surrogates to integrate the JTRS cluster 1/Cluster 5 and WIN-T radios, FBCB2, AFATDS, DCGS-A. Develop Experiment detailed test procedures. Assembly of Test Consoles for Battle Command Suite Test and Integration, Integration of MGV, UGV, UAV electronic compartment Mock-ups, Initial Test of Laboratory Test equipment software, Initiate Network system Communication test event, Develop IV1 simulation requirements documentation, Develop IV1 simulation Test procedures, Integration and test of Ground and Air Sensor Simulations from "One Team Partners", Integrate SoSCOE into an integrated C4ISR software suite.	509696	418587		
CONTRACTOR SoS TEST - FY06 - Integration Phase 0 - Establish foundational ties between requirements, architecture, and interface products & the time-phased SoS-level H/W & S/W Capability/Functionality buildup planning products. Develop and execute test plans for the Integration Phase 0 Integrated Mission Test to include: stand-up SoS Integration and Verification, and Test Capabilities and Processes. FCS to perform the Networked Fires and Provide Force Health Protection Integrated Processes; initial interoperability with the	34365	36704		

AFATDS, FBCB2, and GCCS-A complementary programs; maturation of the test articles, environment, and infrastructure. Participate in JEFX 06. This experiment is a multi-service focused on network centric operations and ISR fusion as well as advanced command and control systems. FY07- Demonstrate initial capability to establish and control the FCS Network, manage selected sensors, display initial BCT level Common Operating Picture interface with selected external M-BCT assets, demonstrate selected Distributed Systems functions and provide test data to support Spin Out 1. Execute Experiment 1.1 with the following objectives: effect of quality of service implementations on network performance; assess maturity of distributed fusion management; assess interoperability and IA between selected assets; assess maturity of GMR and the WNW waveform, and HMS and the SRW waveform; demonstrate progress and maturity of selected FCS technologies; support selected KPP analysis and risk mitigation. Complete Development of Procedures, Documentation and Plans for IMT 1. Stand up the Test Data Management Capability. Complete Experiment 1.1 Phase II Field Event. Train Test Role Players. Test Support Engineers and Test Control Engineers for Exp 1.1 & IMT 1. IMT1 Test Planning and Preparation Start of IMT1. Spin Out 1 Planning, Preparation and Infrastructure Setup. Deliver Annual Update to ITEP.				
CONTRACTOR - FEE This includes both the LSI fixed and incentive fee.	345649	328921		
Small Business Innovative Research/Small Business Technology Transfer Programs		60306		
Total	2027766	2142970		

B. Other Program Funding Summary	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
0604660A FCS Manned Grd Vehicles & Common Grd Vehicle Components			696333	772458	791186	361201	215665	103885	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management			1589466	1407410	1888349	1929853	1299062	1034307	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms			41164	34220	14398	9301	4587	1344	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles			90667	96666	65206	43912	27038	3603	Continuing	Continuing
0604664A FCS Unattended Ground Sensors			10999	12942	19103	16874			Continuing	Continuing
0604665A FCS Network Hardware & Software			678781	536387	336471	367894	292770	170602	Continuing	Continuing
0604646A Non Line of Sight - Launch System	216668	320650	253410	199064	40329	6000			Continuing	Continuing
0604647A Non Line of Sight - Cannon	132223	110998	137802	89189	71906	43531	28971		Continuing	Continuing
0604666A FCS Spin Outs			64796	32442	65000	50000	50000	10000	Continuing	Continuing
0603639A FCS MRM			44578	45733	71961	56698	107077	51079	Continuing	Continuing
0604715A STRICOM/NAWCTSD Support			381	391	401	409	418	429	Continuing	Continuing
WTCV G86100 FCS Core Program			79483	155838	149367	683788	2194625	5795292	Continuing	Continuing
WTCV G86200 FCS Spin Out Program			20123	172746	373790	557060	779742	958060	Continuing	Continuing
0604645 F52 UAV Recon & Sensors	50692	26360							Continuing	Continuing

0604645 F53 UGV	121528	106516							Continuing	Continuing
0604645 F54 UGS	31242	10612							Continuing	Continuing
0604645 F55 SUSTAINMENT	139389	106517							Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	499469	563946							Continuing	Continuing
0604645 F61 SoS Engineering and Program Management	2027766	2142970							Continuing	Continuing

Comment:

C. Acquisition Strategy Fiscally constrained Budgets, coupled with the fiscal challenge to meet the Army_s reset and modernization requirements, have caused the Army to implement FCS program adjustments. These adjustments maintain the Army_s focus on FCS-equipped Brigade Combat Team development and minimize the efforts on operational requirements. The adjustments to the FCS Program acquisition strategy fall into the following categories:

1. Defer the following platforms from the FCS(BCT): ARV-A, ARV-RSTA, UAV Class II, UAV Class III
2. Refine the schedules for the development of the Core and Spin Out capabilities so that the Army can benefit from the savings realized with concurrent testing.
3. Increase the rate of fielding of FCS technologies to the current force.
4. Fully fund the Spin Out technology Insertion program and development and fielding of the Mid-Range Munitions (MRM) and Advanced Kinetic Energy (AKE) munitions.
5. Revise platform configurations to decrease the production cost of a single Core FCS BCT from $6.2 billion to $5.9 billion (FY03 Constant dollars) by deferring/deleting selected sensors and other associate hardware (such as the XM307 machine gun).

The following is a history of the LSI SDD Contract.

	Contract Award	Definitization Date
Original Contract Award	30 May 2003	10 Dec 2003
Modified for POM 06-11 Changes	6 Aug 2004	2 Mar 2005
Conversion to FAR Base Contract	23 Sep 2005	28 Mar 2006
Modification for POM 8-13 Adjustments	Feb 2007	May 2007

The R forms are based on estimated effects of the Army adjustment. Upon completion of negotiation of the contract modification, caused by this adjustment, reprogramming actions may be required to realign the funding buckets to the contract.

Termination Liability associated with this contract is included in PE 0604645 Project F61.

IAW Section 214 of the FY2006 National Defense Authorization Act, this project was converted to a stand alone Program Element (0604662A Project FC3) commencing with the FY2008 President's Budget submission to Congress.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F61

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CONTRACTOR- PROG MGT	OTA/FAR	The Boeing Company - ST. LOUIS, MO see remark 8	478788	146053	1-3Q	182169	1-3Q						807010	
CONTRACT FEE	OTA/FAR	The Boeing Company - ST. LOUIS, MO	276401	323878	1-3Q	326957	1-3Q						927236	
CONTRACTOR NETWORK SOFTWARE	OTA/FAR	The Boeing Company - ST. LOUIS, MO see remarks 1,4,5,6,7,11,12,13,14	414005	316615	1Q	315921	1-3Q						1046541	
CONTRACTOR NETWORK HARDWARE	OTA/FAR	The Boeing Company - ST. LOUIS, MO see remarks 2,3,9,10		274022	1Q	354626	1-3Q						628648	
CONTRACTOR SYSTEM REQUIREMENTS AND INTEGRATION	OTA/FAR	The Boeing Company - ST. LOUIS, MO remark 8	471713	455627	1-3Q	417370	1-3Q						1344710	
Subtotal:			1640907	1516195		1597043							4754145	

Remarks: 1: Subcontractor: Honeywell, Albuquerque, NM. (Platform Soldier mission readiness systems - Software),award date April 2006
2: Subcontractor: BAE Systems, Wayne NJ (Air Ground Communications Integration)
3: Subcontractor: General Dynamics Advanced Information Systems, Bloomington MN (Integrated Computer Systems)
4: Subcontractor: Northrop Grumman - Mission Systems, Carson, CA, (Logistics Decision support Systems - Software)
5: Subcontractor: Raytheon, Fort Wayne, IN, (Battle Command & Mission Execution - Software)
6: Subcontractor: Overwatch/Austin Info Systems, Austin, TX, (Situational Understanding - Software)
7: Subcontractor: General Dynamics C4 Systems, Scottsdale, AZ, (Sensor data arrangement & planning & preparation services - Software)
8. Subcontractor: SAIC, San Diego,CA
9. Subcontractor: Raytheon Network Centric Systems, Plano,TX (Ground Sensor Integration), award date Sep 2003
10. Subcontractor: Northrop Grumman Electronic Systems CMS - Belcamp,MD (Air Sensor Integration), award date Sep 2003
11. Subcontractor: LM Integrated Systems & Solutions - San Diego,CA (Level 1 Fusion - Software), award date Oct 2003
12. Subcontractor: Northrop Grumman Network Management Systems - Carson,CA (Network Management System- Software), award date Oct 2003
13. Subcontractor: Boeing Mesa - Mesa,AZ (Warfighter Machine Interface - Software), award date Sep 2003
14. Subcontractor: International Business Machines - Bethesda,MD (Logistics Management System- Software)

II. Support Costs	Contract	Performing Activity &	Total	FY 2006	FY 2006	FY 2007	FY 2007	FY 2008	FY 2008	FY 2009	FY 2009	Cost To	Total	Target

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F61

	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
GOVERNMENT SYS ENG PROGRAM MGT	DIRECT	PM FCS (BCT) - ST. Louis, MO	115991	105298	1-4Q	122959	1-4Q						344248	
GOVERNMENT OTHER	DIRECT	PM FCS (BCT) - ST. Louis, MO	34958	79534	1-3Q	148526	1-3Q						263018	
SPIN OUT	DIRECT	PM FCS(BCT) - ST. Louis, MO		7400	1-3Q	27900	1-3Q						35300	
Subtotal:			150949	192232		299385							642566	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CONTRACTOR - SoS Test	OTA/FAR	The Boeing Company - ST. LOUIS, MO.	29204	30720	1Q	36597	1-3Q						96521	
GOVERNMENT - STE	DIRECT	PM FCS-BCT - ST. Louis, MO , see remarks 1-6	68072	277619	1Q	196796	1-3Q						542487	
GOVERNMENT MODELING & SIMULATION	DIRECT	PM FCS-BCT - ST. Louis, MO	21355	11000	1Q	13149	1-3Q						45504	
Subtotal:			118631	319339		246542							684512	

Remarks: Remark 1:Subcontractor, Whitman, Requardt & Assoc, Baltimore, MD;
2: John C. Grimberg Co., Rockville, MD
3: ADT Corp, Baltimore, MD
4. Netversant Co., Baltimore, MD
5. 3D Research, Huntsville, AL
6. Jacobs/Sverdrup, Aberdeen, MD

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:														

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604645A - Armored Systems Modernization (ASM)-Eng. Dev.**	**F61**

Remarks: .

Project Total Cost:	**1910487**	**2027766**		**2142970**							**6081223**	

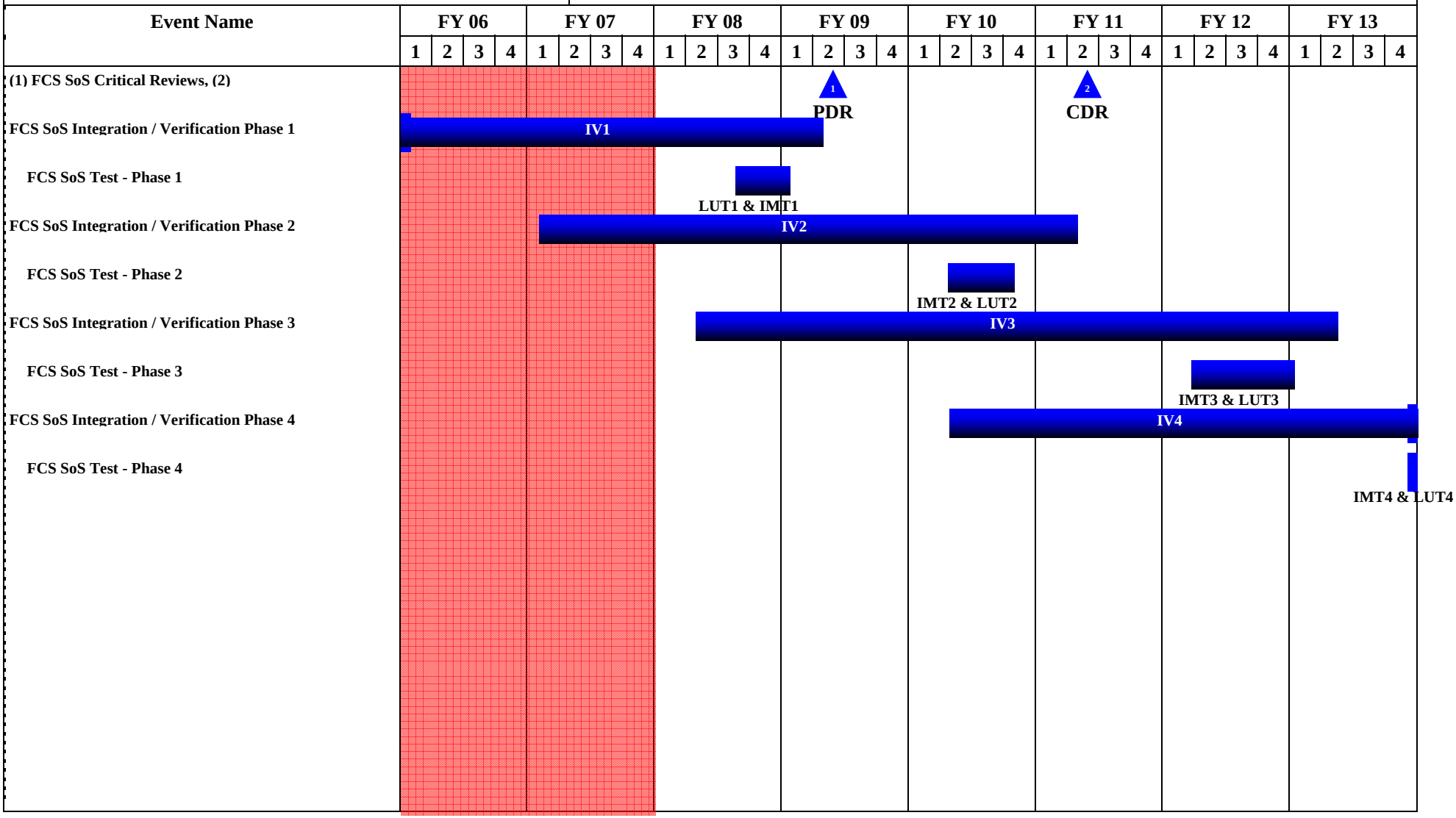
Schedule Profile (R4 Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F61



Schedule Detail (R4a Exhibit)

February 2007

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604645A - Armored Systems Modernization (ASM)-Eng. Dev.

PROJECT
F61

Schedule Detail	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FCS SoS Critical Reviews				2Q				
						2Q		
FCS SoS Integration / Verification Phase 1	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
FCS SoS Test - Phase 1			3Q - 4Q	1Q				
FCS SoS Integration / Verification Phase 2		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q		
FCS SoS Test - Phase 2					2Q - 4Q			
FCS SoS Integration / Verification Phase 3			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q
FCS SoS Test - Phase 3							1Q - 4Q	1Q
FCS SoS Integration / Verification Phase 4					2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
FCS SoS Test - Phase 4								4Q