

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

060464A - Non Line of Sight Cannon

PROJECT

F5

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
F58 NON LINE OF SIGHT CANNON	251344	476736	107587	262492	273226	140428	139569	72325	0	1723707

A. Mission Description and Budget Item Justification: Future Combat Systems (FCS) will operate as a System of Systems (SoS) that will network existing systems, systems already under development, and new systems to be developed to meet the needs of the Unit of Action (UA). The network will enable improved intelligence, surveillance and reconnaissance, battle command, real time sensor-shooter linkages, and increased synergy between echelons and within small units. It will also enable the UA to connect to the Unit of Employment (UE), joining capabilities, and national assets making these capabilities available to the small units of the UA.

FCS enables the networked UA to develop the situation in and out of contact, set conditions, maneuver to positions of advantage to close with and destroy the enemy through standoff attack and combat assault as articulated in the Future Force UA Operations and Organizational (O&O) plan.

The FCS program is contained in three Program Elements (PEs): Non-Line of Sight - Cannon (NLOS-C), Non-Line of Sight - Launch Systems (NLOS-LS) and Armored Systems Modernization (ASM). PE NLOS-C contains the development effort associated with NLOS-C work and in FY05 some of Manned Ground Vehicle (MGV) common components. To meet pre-production Congressionally directed fielding requirements by FY08, the NLOS-C becomes the lead MGV variant. PE ASM contains the development effort for the balance of the common MGV components.

NLOS-C provides networked, sustained, extended-range (30km) cannon fires for precision attack of point and area targets in support of the FCS UA.

The Army is executing the FCS program to achieve the earliest possible fielding of the first FCS-equipped UA. The Army plan is to deliver six pre-production NLOS-C systems for limited user and developmental testing in 2008. The first Production units will be fielded by CY 2010, with 18 delivered by CY 2012. The UA Capability for NLOS-C will be fielded in FY 2014.

The Army established NLOS-C as the lead MGV of the FCS FoS. The FCS program focus is on providing combat capability at the unit level. Key to this approach is the synergy achieved by integrated development and acquisition of sensors, unmanned vehicles, airframes, and combat vehicles including NLOS-C working together and connected by a network, all operated by skilled soldiers. Commonality of hardware and software within the FCS program is a priority action needed to reduce the Lifecycle costs and logistical footprint of the UA.

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<p>Major Program Milestones</p> <p>NLOS-C Work FY05 System Demonstrator Testing @ YPG Complete Increment 0 Mission Module Preliminary Design Best Technical Approach (BTA) Activities/Concepting Support MGVS Requirements Refinement (Path to MGVS SFR Activities)</p> <p>FY06 Complete Increment 0 Common Chassis Design Complete Increment 0 Design MGVS Systems Functional Review (MGVS SFR) (BTA Completed)</p> <p>FY07 Complete Increment 0 SW Build 1 Increment 0 Prototype Fabrication and Initial Integration Increment 0 Firing Platform Shakedown MGVS Preliminary Design Review (MGVS PDR) MGVS JOINT SOFTWARE MAJOR ACTIVITIES FY05 Simulation Software only delivered to SOSIL (SW BLD 0) Supports NLOS-C(0)/Firing Platform (SW BLD 1)</p> <p>COMMON – PROPULSION MAJOR ACTIVITIES FY05 Engine Award and Development TDS Award and Development Generator Award and Development Several Comp. Maturation Projects – ESS, Power Converter, TDS S/W Requirements, Code and Test Procurement and Integration of</p>		

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<p>ATR</p> <p>COMMON SUSPENSION MAJOR ACTIVITIES FY05 Develop a 24 ton design to concept Band Track Component Maturation S/W Requirements, Code and Test</p> <p>COMMON – VETRONICS MAJOR ACTIVITIES FY05 Develop a Best Technical Approach(BTA) architecture design to concept Develop flex bus and connector concepts S/W Requirements, Code and Test</p> <p>COMMON – NBC/ECS MAJOR ACTIVITIES FY05 Develop a moderate risk H/X and Cooling Fan Approach Develop and baseline a Thermal Architecture S/W Requirements, Code and Test</p> <p>COMMON – ARMOR /STRUCTURE MAJOR ACTIVITIES FY05 Develop a 24 Ton Modular-Scalable BTA IAW new ECC/FCC Develop A&B Armor and Mine Resistant Structure CMMP</p> <p>COMMON – CREW STATION MAJOR ACTIVITIES FY05 Develop a moderate risk Motion Sickness Approach Develop and baseline a Crew Station Architecture S/W Requirements, Code and Test</p> <p>Note All Common Efforts in FY06 and out are included in MGV Project</p>		

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Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Non-Line of Sight - Cannon (NLOS-C) Mission Equipment	251344	84405	107587	262492
Common	0	383050	0	0
Test	0	9281	0	0
Totals	251344	476736	107587	262492

B. Program Change Summary

	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	497643	459084	285095
Current Budget (FY 2006/2007 PB)	476736	107587	262492
Total Adjustments	-20907	-351497	-22603
Net of Program/Database Changes			
Congressional Program Reductions	-7206		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-13701		
Adjustments to Budget Years		-351497	-22603

Change Summary Explanation: Funding - FY 06/07: Funds realigned to support Future Combat Systems (0604645A) and Non-Line of Sight Launcher (0604646A).

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C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
0604645 F52 (UAV) Recon Platforms and Sensors	0	147267	105333	114117	88023	75796	50382	33637	Continue	Continue
0604645 F53 (UGV)	0	130935	86445	106341	116608	118798	117904	81003	Continue	Continue
0604645 F54 (UGS)	0	28173	2504	5304	6557	6353	5315	2906	Continue	Continue
0604645 F55 Sustainment	0	51191	61581	80020	194036	266860	267032	268028	Continue	Continue
0604645 F57 (MGV)	0	409714	549150	778022	818073	793008	840463	576124	Continue	Continue
0604645 F61 SoS Engineering & Program Management	0	1500956	2260616	2066332	1905563	1797485	1669855	1638582	Continue	Continue
0604646 F72 Non-Line of Sight Launch System (NLOS-LS)	0	55794	231554	329412	280225	261362	90950	18100	Continue	Continue
0604647 F58 Non-Line of Sight Cannon (NLOS-TCV)	0	476736	107587	262492	273226	140428	139569	72325	Continue	Continue
0604645 F59 Common Components	27500	0	0	0	0	0	0	0	0	27500
0604645 F60 Family of Systems Anal & Int	165302	0	0	0	0	0	0	0	0	165302
0604645 F62 Mission Equipment Platforms	132537	0	0	0	0	0	0	0	0	132537
0604645 F63 Network Software	111745	0	0	0	0	0	0	0	0	111745
0604645 F64 Other Contract Costs	313536	0	0	0	0	0	0	0	0	313536
0604645 F65 S of S Engr & Prog Mgt	190331	0	0	0	0	0	0	0	0	190331
0604645 F66 S of s Test of Evaluation	56347	0	0	0	0	0	0	0	0	56347
0604645 F67 Supportability	5252	0	0	0	0	0	0	0	0	5252
0604645 F69 Training	7756	0	0	0	0	0	0	0	0	7756
0604645 F70 NLOS Launch System	49502	0	0	0	0	0	0	0	0	49502

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D. Acquisition Strategy: During the FY06-11 POM process, the Army restructured the PM UA Acquisition Program. The Army announced this restructured plan which strengthen the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army focus on FCS-equipped UA development and substantially reduce program risk. The adjustments to the FCS Program acquisition strategy fall into four primary categories:

- o The development priority in descending order will be the 1) Network, 2) Unattended Munitions, 3) Unmanned systems, and finally 4) Manned Ground Vehicles (MGV). Consequently the MGV development duration will be extended. However, Non Line of-Sight-Cannon (NLOS-C) will lead MGV development and deliver prototype NLOS-C systems in 2008 and deliver Block 0 NLOS-C prototypes in 2010.
- o The five previously deferred FCS core systems: 1) UAV Class II, 2) UAV III, 3) Armed Robotic Vehicle (ARV) –Assault, 4) ARV-Reconnaissance and 5) FCS Maintenance and Recovery Vehicle will be funded and fielded with the first FCS-equipped UA, allowing UA fielding of the complete 18 + 1 FCS core systems to begin delivery to the Army in 2014.
- o More robust experimentation and evaluation are included in the program to prove revolutionary concepts, mature the architecture and components, and assist in spiral development.
- o A series of Spiral Out packages will begin in 2008 and continue every two years through 2014 to insert FCS capability into Current Force Modular Brigade Combat Teams (M-BCTs) to include Stryker, Heavy, and Infantry.

The current OTA was modified on 6 Aug 2004 to cover the new Scope of Work (SOW) of the approved POM program. The definitization of the modification is scheduled for February 2005. The PM will be submitting reprogramming request for the FY05 to reflect the above definitization of the modification to the OTA. While the FY06 and beyond reflect the adjusted Army Cost Position (FY06-11 POM approved program), the funding profile for these years may be adjusted upon completion of contract definitization and development of contract/program budget baseline that supports the above program restructure.

ARMY RDT&E COST ANALYSIS(R3)									February 2005			
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . NON-LINE OF SIGHT CANNON (NLOS-C)	OTA	THE BOEING COMPANY, SEATTLE, WASHINGTON - SEE REMARK 1	251344	84405	1-3Q	107587	1-3Q	262492	1-3Q	Continue	705828	0
b . COMMON HARDWARE & SOFTWARE	OTA	THE BOEING COMPANY, SEATTLE, WASHINGTON - SEE REMARK 1	0	383050	1-3Q	0		0		Continue	383050	0
Subtotal:			251344	467455		107587		262492		Continue	1088878	0
Remarks: Remark 1 - Subcontractor: United Defense Limited Partnership - Minneapolis, MN FY05 estimates are based on the LSI EVM budget baseline. FY06 and beyond reflect the adjusted Army Cost Position (POM approved program). These projects will be adjusted on completion of contract definitization and development of a contract budget baseline.												
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Remarks: * All Support Costs are included in PE 0604645A, Project F61, Government Support Costs.												

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TEST & EVALUATION	ALLOT	PM FCS-UA - ST. LOUIS, MO	0	9281	1-3Q	0		0		Continue	9281	0
Subtotal:			0	9281		0		0		Continue	9281	0
Remarks: * All Government System Test & Evaluation are included in PE 0604645A, Project F61, Government Support Costs.												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . *			0	0		0		0		0	0	0
Subtotal:			0	0		0		0		0	0	0
Remarks: * All Management Services costs are included in PE 0604645A, Project F61, Government Support Costs.												
Project Total Cost:			251344	476736		107587		262492		Continue	1098159	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY

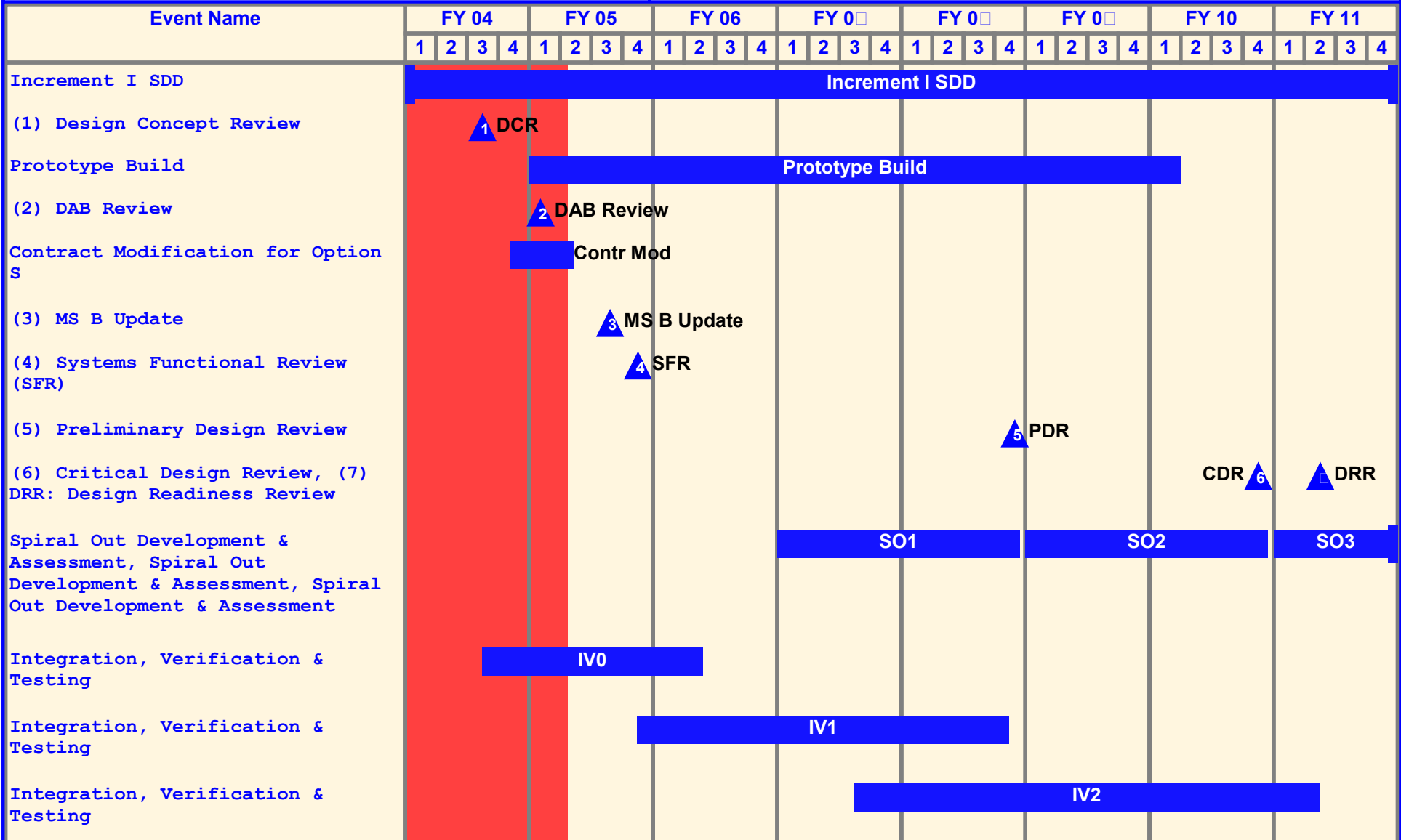
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Schedule Detail (R4a Exhibit)							February 2005	
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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ADM RequiredMS B Update		3Q						
Definitization of Contract Modification for POM-adjusted Program		2Q						
SoS Functional Review (FR)		4Q						
SoS Preliminary Design Review (PDR)					4Q			
Phase 1 Integration at Test Completion		4Q						
Phase 2 Integration at Test Completion				3Q				
SoS Critical Design Review (CDR)							4Q	
Phase 3 Integration at Test Completion					2Q			
Design Ready Review								2Q