ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - System Development and Demonstration	**0604647A - Non-Line of Sight Cannon**

COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
F58 NON LINE OF SIGHT CANNON	133139	89545	58216		280900

A. Mission Description and Budget Item Justification: This NLOS-C program contains the development effort associated with NLOS-C unique work. The Manned Ground Vehicle (MGV) common sub components for NLOS-C and MGV are included in the MGV PE0604660 Project FC1.

The Army established NLOS-C as the lead MGV of the FCS Family of Systems (FoS). Eight Early prototypes were mandated. One prototype was delivered to test in FY 2008 with four to be delivered in FY 2009 and three in FY 2010. The first 5 early prototypes, delivered in FYs 2008 and 2009, will be the 24 ton MGV configuration as previously discussed with Congress. The 3 remaining FY 2010 prototype deliveries will be updated to the 30 ton configuration. These 3 prototypes will provide greater fidelity test data for the ultimate MGV SDD common design components and may reduce final MGV prototype testing cost. Concurrent with the Congressionally mandated MGV SDD prototypes, 3 final configuration threshold NLOS-C prototypes will be delivered in fiscal year 2011.

The NLOS-C is the Army's first fully automated 155-mm howitzer, 38 caliber cannon, that provides automated, 24/7, all-weather, precision fire support to the FCS (BCT) commander. It will be organic to and provide networked, extended-range (30kms), responsive and sustained precision attack of point and area targets in support of the FCS (BCT). The NLOS-C 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 and other NLOS, external and joint capabilities in combat scenarios spanning the spectrum of ground combat. The NLOS Cannon's fully automated ammunition handling system and real-time digital operating environment enables two soldiers to perform tasks that normally require four soldiers on current force systems. The cannon will be able to move rapidly, stop quickly, and deliver lethal first round effects on target in record time largely due to the fully automated gun laying, ammunition handling, and fuze setting of all current and precision guided 155mm artillery rounds. The NLOS-C will have a multiple round simultaneous impact (MRSI) capability, unmatched sustained rate of fire of six-rounds per minute and precision fires, through the XM982 Excalibur, to provide unprecedented effects on target from a smaller number of systems.

The NLOS-C program has been changed due to restructuring of the MGV portion of the FCS program and the refocusing of the FCS program to spin out FCS technologies faster to the IBCT.

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B. Program Change Summary	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	136929	89841	71396
Current BES/President's Budget (FY 2010)	133139	89545	58216
Total Adjustments	-3790	-296	-13180
Congressional Program Reductions		-296	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	42		
SBIR/STTR Transfer	-3832		
Adjustments to Budget Years			-13180

Change Summary Explanation: Funding - FY 2010: Program is terminated after FY 2010.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604647A - Non-Line of Sight Cannon**	**F58**

COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
F58 NON LINE OF SIGHT CANNON	133139	89545	58216		280900

A. Mission Description and Budget Item Justification: Please see Exhibit R-2.

Accomplishments/Planned Program:	FY 2008	FY 2009	FY 2010
SYSTEM ENGINEERING & PROGRAM MANAGEMENT - FY08 - Continued Preliminary Design Activities leading to Preliminary Design Review for the final threshlod 30 Ton FCS NLOS-C prototypes, 2Q FY09. Initiated design and development of the P7 and P8 NLOS-C systems. Final design and integration of adding JTRS radios to the 24 ton configuration prototypes in early 2009. Continued Firing Platform testing to support an Interim Safe Service Life and Interim Safe Fatigue Life ratings for the XM324 Ultra-Light Weight Cannon and Tube in early 2009. Completed NLOS-C integration in Program Integration, Validation and Test Lab (PIVOT). Completed design efforts required to deliver 30-ton chassis configuration for the last three NLOS-C prototype vehicles in CY 2009. Continued to design the threshold configuration for the FCS Core program to support FY09 PDR.	51049		
SYSTEM ENGINEERING AND PROGRAM MANAGEMENT FY09 - Completed all NLOS-C specific design and integration activities required to support NLOS-C and MGV PDR in 2nd quarter FY09 and also SoS PDR in 3rd Qtr FY09. PDR will cover all system and subsystems required for the integration and testing of the SDD (threshold configuration) NLOS-C prototypes for delivery in 2011. Conduct PDR of Core Threshold design and CDR of Initial Production to achieve delivery and fielding of NLOS-C to the Army Evaluation Task Force (AETF) in 2010. Begin Critical Design Activities for FCS Core NLOS-C threshold.		33224	
PROTOTYPE VEHICLE FY08 - Continued to fabricate, integrate, and began delivery of prototype NLOS-C 24 ton systems for developmental testing in CY 2008. One of the five 24 Ton NLOS-C prototypes (P1) was delivered in June 2008. The remaining four early 24 ton configurations are scheduled for delivery in March (P4), Apr. (P5), May (P3) and Sep (P6), of 2009. Improved mobility platform fabrication & assembly processes. Began Procurement of Long Lead hardware required for the three 30 Ton configurations to be delivered in April (P7), May (P8) and June (P2) of 2010.	66677		
PROTOTYPE VEHICLE FY09 - Continued fabrication, integration, and deliver four additional 24-ton prototype NLOS-C systems March (P4), April (P5), and September (P6) for developmental testing in FY09 and 10. Completed mobility integration and check-out of P1and mission module integration and check-out of P3 in April. Remaining 30 Ton NLOS-C Platforms will be stored or disposed in the most economical fashion that supports future program inia.tives		42134	
SYSTEM TEST & EVAULATION (TEST) FY08 - NLOS-C - Conducted effective full charge rate of fire and Battlefield Day rate of fire testing on the Firing Platform at YPG. Conducted Excalibur compatibility testing and design refinement on the Firing Platform. Continued Firing Platform testing to support Interim Safe Service Life and Interim Safe Fatigue Life ratings for the XM324 Ultra-Light Weight Cannon and Tube in early 2009. P1 began testing at YPG in 4Qtr FY08.	7224		
SYSTEM TEST & EVAULATION (TEST) FY09 - Began NLOS-C early prototype developmental testing at Yuma Proving Grounds for mobility, lethality, weapon accuracy, environmental, and safety. P3 testing to begin at YPG (mobility) and P5 testing at WSMR Electromagnetic Environmental Effects (E3). System Integration Lab (SIL): integration and certification for Independent Validation and		5748	

Verification (IV2) integration and test. P4 will be used for integration and sub-system software/performance testing at the PE SIL in Detroit and the SIF at Minneapolis.			
MISSION SOFTWARE FY08 - Completed Build 1 Software Development and Integration Functional Qualification Test (FQTd) in 1st qtr FY08. This is the software running on the June 2008 delivery of the first early prototype Cannon.	8058		
MISSION SOFTWARE FY09 - Software: Build 2 initial drop for system integration. Software Build 2 Life Cycle Assessment (LCA) review, Build 3 Requirement Baseline Review (RBR), Build 3 begins. Modeling and Simulation: Build 3 Fire Support Equipment (FSE) available from MS&I.		5932	
GFX-08- TACLINK 2000 - MODEM	131		
Termination Liability			58216
Small Business Innovative Research/Small Business Technology Transfer Programs.		2507	
Total	133139	89545	58216

B. Other Program Funding Summary	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
0604660A FCS Manned Grd Vehicles & Common Grd Vehicle Components	635846	782664	368557	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management	1292514	1414756	1067191	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms	42772	57190	68701	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles	78826	102976	125616	Continuing	Continuing
0604664A FCS Unattended Ground Sensors	22007	17011	26919	Continuing	Continuing
0604665A FCS Network Hardware & Software	724397	556301	749182	Continuing	Continuing
0604646A Non Line of Sight - Launch System	246071	208009	88660	Continuing	Continuing
0604666A FCS Spin Outs	84111	111032		Continuing	Continuing
0603639A FCS MRM	43068	40731		Continuing	Continuing
WTCV G86100 FCS Core Program	78932	154127		Continuing	Continuing
WTCV G86200 FCS Spin Out Program	1370	67268	327921	Continuing	Continuing
0605635A - Manned Ground Vehicles			100000		100000

Comment: Comp Programs: ASTAMIDS, GSTAMIDS, WIN-T, JTRS-HMS, JTRS-GMR, JTRS-AMF, STARLite SAR/GMTI, JAVELIN, JCADS, JSLSCAD, DCGS-A, FBCB2, OneTESS, OneSAF

C. Acquisition Strategy The original FCS contract was awarded to the Lead Systems Integrator (LSI), Boeing Company, 30 May 2003 and definitized 10 Dec 2003. LSI contracted with its One Team Partner's, BAE Systems and GDLS, to execute the SDD contract to build the Non-Line of Sight Cannon. For FY 2010, NLOS-C program is being terminated after the completion of the SoS PDR and delivery of the FY09 Prototypes. The Army will determine the most cost effective means for disposal/storage/transfer of prototypes and prototype NLOS-C components.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604647A - Non-Line of Sight Cannon

PROJECT
F58

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Mission Software	FAR	THE BOEING COMPANY,ST. LOUIS, MO - See Remarks 1, 2, 3	45548	8016	1-3Q	5932	1-3Q				59496	
Prototype Vehicle	FAR	THE BOEING COMPANY, -ST. LOUIS, MO., See Remarks 1, 2, 3	174269	66677	1-3Q	42134	1-3Q				283080	
System Engineering & Program Management	FAR	THE BOEING COMPANY,ST. LOUIS, MO -See Remarks 1, 2, 3	175408	51049	1-3Q	33224	1-3Q				259681	
System Test & Evaluation	FAR	THE BOEING COMPANY, ST. LOUIS, MO - See Remarks 1, 2, 3	7019	7224	1-3Q	5748	1-3Q				19991	
Government GFX	MIPR	PM FCS (BCT) St. Louis,MO		131	1Q						131	
Subtotal:			402244	133097		87038					622379	

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

All MGV common hardware and software costs are accounted for in MGV PE 0604660A, Project FC1.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	Direct	OSD				2507	1-2Q				2507	
Adjustment to Budget Year	Direct	ABO		42	1-2Q						42	
Subtotal:				42		2507					2549	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604647A - Non-Line of Sight Cannon**	**F58**

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

Remarks: All Test and Evaluation costs for this project are included in PE 0604661A, Project FC2 SoS engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Termination Liability	FAR	The Boeing Co, St. Louis,MO - See Remarks 1,2 and 3					1-4Q	58216			58216	
Subtotal:								58216			58216	

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

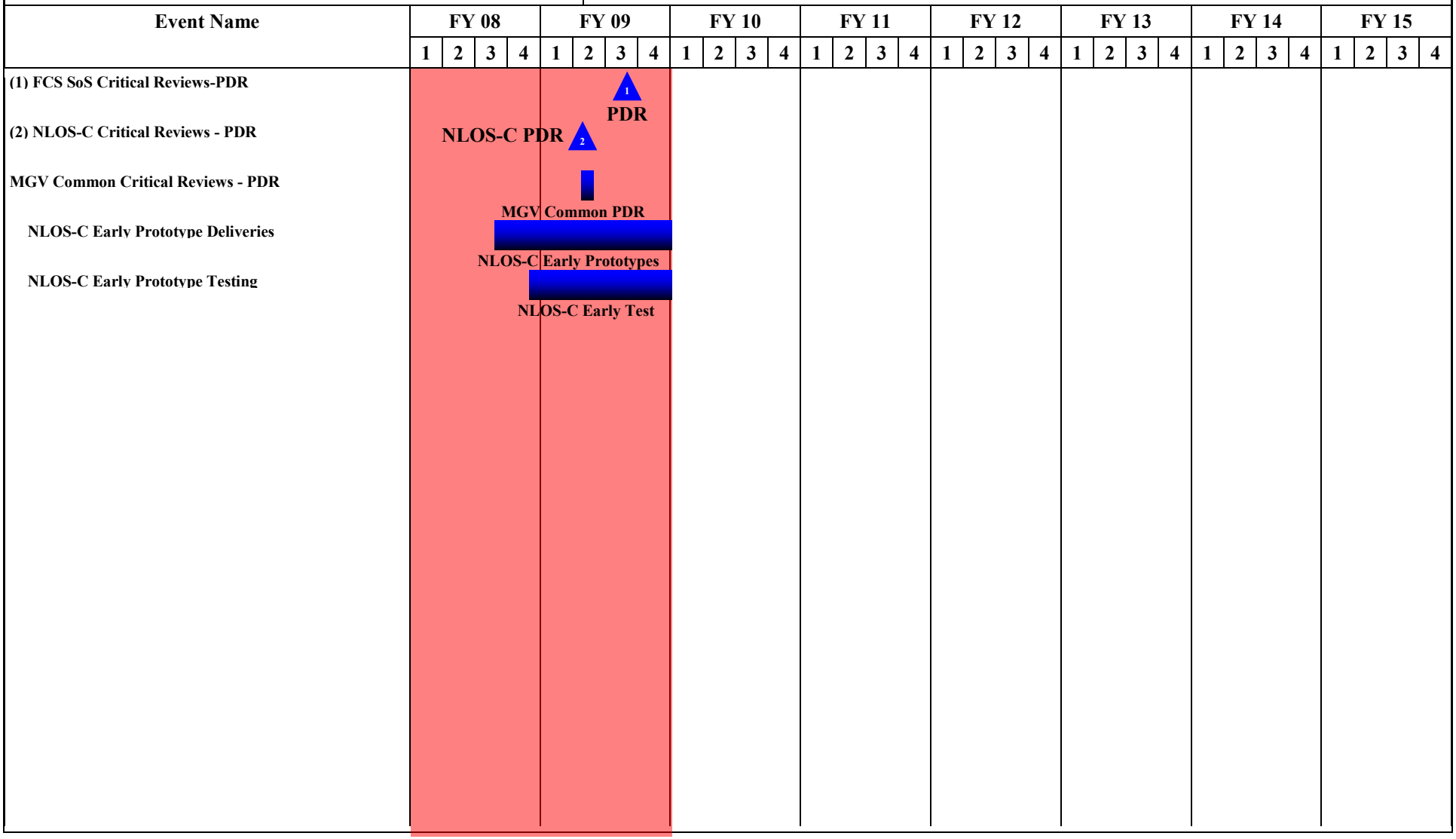
All government system engineering, program management and termination expenses are included in PE 0604661A, Project FC2 SoS Engineering and Program Management Project.

Project Total Cost:			**402244**	**133139**		**89545**		**58216**			**683144**	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	0604647A - Non-Line of Sight Cannon	F58



Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604647A - Non-Line of Sight Cannon**	**F58**

Schedule Detail	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
FCS SoS Critical Reviews-PDR		3Q						
NLOS-C Critical Reviews - PDR		2Q						
MGV Common Critical Reviews - PDR		2Q						
NLOS-C Early Prototype Deliveries	3Q - 4Q	1Q - 4Q						
NLOS-C Early Prototype Testing	4Q	1Q - 4Q						

The schedule reflected in this R-Form is based on preliminary analysis of the available budget. Upon further resolution and detailed planning, adjustments may occur which could potentially change the program schedule.