

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

**February 2008**

<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>		<b>PE NUMBER AND TITLE</b> <b>0604660A - FCS Manned Grd Vehicles &amp; Common Grd Vehicle</b>						<b>PROJECT</b> <b>FC1</b>	
COST (In Thousands)	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
FC1 FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE		592254	774257	785575	358641	214207	103230	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This project supports development of Manned Ground Vehicles (MGVs) (exclusive of Non-Line of Sight-Cannon (NLOS-C) specific mission equipment) and includes technology improvements and reliability maturation, systems engineering, subsystem/variant unique mission equipment (e.g. armament/fire control), integration/assembly, and prototype build. The following common MGCV subsystem developments are also included, (NLOS-C common subsystems): armor, suspension, structures, defensive armament system, signature management, NBC, vetronics, power and energy (includes hybrid electric drive), auxiliary systems and hit avoidance system. Also included in this project is mission specific equipment for the following platforms: Infantry Combat Vehicle (ICV), Mounted Combat System, Non-Line of Sight Mortar (NLOS-M), Command and Control Vehicle (C2V), Recon and Surveillance Vehicle (RSV), Field Recovery and Maintenance Vehicle (FRMV), and Medical Vehicle (MV).

The ICV provides mobility for 11 personnel (2 man crew and 9-man infantry squad) on the battlefield. ICV is located within the infantry platoons and companies within the Combined Arms (CA) battalions. The ICV delivers the dismounted force to the close battle and supports the squad by providing self defense and supporting fires. The ICV also carries the majority of the Soldiers 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 versions (MV-Evacuation (MV-E) and MV-Treatment (MV-T)). 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-E 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-T enhances the ability to provide Advanced Trauma Management (ATM)/Advanced Trauma Life Support (ATLS) treatments and procedures forward for more rapid casualty interventions and clearance of the battlespace.

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 FRMVs. These CRTs will perform in-depth Battlefield Damage Assessment and Repair (BDAR) and unscheduled field-level maintenance requirements including 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 provide networked, responsive and sustained indirect fire support to the combined arms maneuver battalion in the FCS BCT. It fires 120mm munitions that include special purpose capabilities to provide a variety of fires on demand including precision guided munitions. NLOS-M will provide close support and destructive fires for tactical standoff engagement during offensive and defensive operations in concert with line-of-sight, beyond-line-of-sight, and external and joint capabilities in combat scenarios spanning the spectrum of ground combat and threats.

The RSV features a suite of advanced sensors (which are developed under PE 0604665A) 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 Mounted Combat System provides offensive maneuver to close with and destroy enemy forces. The Mounted Combat System is capable of conducting mounted

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operations, mounted operations supported by dismounted infantry, and supporting dismounted infantry operations in all environments. The Mounted Combat System 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 breaching walls during the tactical assault. The Mounted Combat System can engage targets from Beyond Line of Sight (BLOS), which allows the FBCT the ability to stand-off from the enemy's lethality envelope, allowing the Mounted Combat System to be more lethal, at greater ranges.

The MGV common subsystems project also includes developmental and engineering efforts 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 subsystems included in the common chassis design are; 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 these common components is to reduce design, production, testing, and support costs. In addition, the FCS BCT with common chassis components is more supportable (few spare parts), more transportable, more reliable and maintainable (less specialized Hardware).

<b><u>Accomplishments/Planned Program:</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>
IAW Section 214 of the FY2006 National Defense Authorization Act, this Program Element was established commencing with FY2008 President's Budget request. This Program Element replaced the previous Project F57 under the Armored System Modernization Program Element 0604645A. The major FY2007 program accomplishments for that project are described below to show continuity of the development efforts.			
CONTRACTOR INFANTRY COMBAT VEHICLE (ICV)- FY08 - Continue preliminary design activities for 2nd qtr FY09 PDR. Continue slip ring component maturation plan. Conduct a slip ring CDR, and initiate slip ring prototype development activities. Award the M240 machine gun remote operating kit, and MK-44 gun system sub-contracts. Initiate ICV turret test stand activities. Continue ICV Software Build 2 development activities and conduct the Software Build 2 Life Cycle Objective (LCO).		14854	
CONTRACTOR INFANTRY COMBAT VEHICLE (ICV)- FY09 - Initiate the procurement of: ICV prototype component parts, slip ring, MK 44 gun system, 30/40 mm feed system, and gun turret drive system. Conduct ICV PDR in 2nd qtr FY09 in preparation for CDR in 2nd qtr FY10. Continue Software: Build 2, and initiate Software Build 3 development activities while conducting Build 3 Life Cycle Objective (LCO). Modeling and Simulation: Integrate Build 3 Fire Support Element (FSE) from modeling, simulation and integration (MS&I). Fabricate the turret firing test stand in the SIL and subsequently conduct initial turret dry fire test at contractor test site.			34340
CONTRACTOR MOUNTED COMBAT SYSTEM (MCS) FY08 - Continue preliminary design activities. Integrate Primary Weapon Assembly, Ammunition Handling Unit, and Fire Control Sub-systems to build MCS Firing Fixture. Conduct Firing Fixture testing, which will include 6-month dynamic testing on Tank-Automotive Research and Development Center's (TARDEC) Turret Motion Based Simulator (TMBS) and 3-month live-fire testing at Aberdeen Proving Ground (APG). This testing will mature the design and reduce design time and risk. Achieve design requirements and begin integration for the following: ammunition data link for use with BLOS munitions, dynamic muzzle reference sensor, Advanced Fire Inhibit System (AFIS), high voltage Electric Gun Turret Drive (EGTD), and Ammunition Handling System (AHS) as a result of Firing Fixture Testing. Software: Build 2 ongoing. Modeling and Simulation: Build 2 FSE available from MS&I. System Integration Lab: SW/HW Integration (Phase 1 Software Emulator Drop, Phase 2 - FSE Build 3 available from MS&I). Deliver Ammunition Handling System (AHS). Begin MCS P1 hull fabrication, assembly, and integration.		67979	

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CONTRACTOR MOUNTED COMBAT SYSTEM (MCS) FY09 - Conduct Preliminary Design Review (PDR) in 2nd qtr FY09 and enter critical design. Integrate MCS Firing Fixture Turret with common chassis to create the MCS Firing Test Rig. Conduct 6-month Firing Test Rig test at APG test range. Achieve design requirements and begin integration for the following: ammunition data link for use with BLOS munitions, dynamic muzzle reference sensor, Advanced Fire Inhibit System (AFIS), high voltage Electric Gun Turret Drive (EGTD), and Ammunition Handling System (AHS) prior to Critical Design Review (CDR). Software: Build 3 ongoing. Modeling and Simulation: Build 3 FSE available from MS&I. Continue MCS Prototype 1 (P1) hull fabrication, assembly, and integration. Begin hull fabrication, assembly, and integration for MCS P2 and P3. Receive MCS P1: Common Hardware (Propulsion (PRP), Vetronics (VET), Suspension (SUS), Automotive Auxilliary (AUX), Nuclear, Biological, Chemical, Chemical (NBC), Signature Management (SGM), Common Crew Station (CCS), Compact Modular Sight (CMS), Structure (STR), Armor (ARM), and C4ISR Hardware (ANS-GPS/INS, ICS, ANS Navigation (NAV), Sensor and Communication suites).			94021
CONTRACTOR NLOS-M - FY08 Planned Accomplishments - Continue preliminary design activities for 1st qtr FY09 PDR. Modeling & Simulation Build 2 IV2. Mortar Tube & Breech Increment 1 configuration available for mortar firing platform tests. Firing platform tests will be completed on the test stand at Camp Ripley. Ripley testing will consist of 1200 rounds. After contractor upgrades, ship firing platform to Yuma Proving Grounds (YPG), Yuma, AZ. for more live fire firing platform tests. Yuma tests will be conducted while the unit is sitting on an actual chassis allowing the unit to be fired at maximum range and rates. Approximately 9000 rounds will be fired at Yuma to test primarily for wear and fatigue. Slip Ring Component Maturation Platform (CMP) tests complete.		21352	
CONTRACTOR NLOS-M - FY09 Planned Accomplishments - PDR Complete 2nd qtr FY09. Turret structure detail design complete. Primary vehicle ammunition handling complete. Software: Build 2 ongoing, Build 3 LCO. NLOS-M Firing Platform first shot (YPG). Prototype #1 Common hardware available.			52450
CONTRACTOR COMMAND & CONTROL VEHICLE (C2V) FY08 - Prepare for C2V Preliminary Design Review in 1st qtr FY09. Complete phase one and phase two C2V communications rooftop deconfliction testing at EPG and publish results for use in Modeling and Simulation (M&S) efforts on all MGV platforms. Develop preliminary design for the C2V mission workstation and controls. Create C2V vehicle simulation model for M&S and provide to System of Systems Integration Laboratory (SoSIL) for Integration and Verification Phase II. Establish C2V SIL for phase 1 integration and testing of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) hardware. Populate SIL with C2V subcomponents, surrogates, or emulators and other subsystems as available. Initiate work on development of C2V Software Requirements Specification, create C2V software architecture, and begin C2V software development and integration in support of MGV Software Build 2.0.		17969	
CONTRACTOR COMMAND & CONTROL VEHICLE (C2V) FY09 - Conduct C2V preliminary design review, 1st qtr FY09. Prepare for C2V Critical Design Review (CDR), 2nd qtr FY10. Perform C2V rooftop deconfliction phase 3 testing at Electronic Proving Ground (EPG), Ft. Huachuca, AZ. Develop prototype mission workstation/controls hardware. Hardware includes displays, handcontrollers, seats, keyboards, mounting hardware for displays. Complete and integrate software Build 2.0. Start effort on Software Build 3.0. Continue integration of latest release of common/C4ISR software/hardware in the C2V SIL.			36109
CONTRACTOR RECONNAISSANCE & SURVEILLANCE VEHICLE (RSV) FY08 - Continue preliminary design activities for PDR, 2nd qtr FY09. Initiate RSV detailed design. Deliver RSV simulation to SoSIL (IV2). Release RSV system/subsystem design document. Continue RSV hardware schematic models/diagrams (27 models at the subsystem level). Complete RSV requirements compliance assessment. Document RSV Human Factors Engineering/MANPRINT report. Continue RSV installed performance and roof-top sensor deconfliction studies. Provide requirements to BAE for ICV/RSV MK44 turret for subsystem development.		19496	
CONTRACTOR RECONNAISSANCE & SURVEILLANCE VEHICLE (RSV) - FY09 - Conduct RSV Preliminary Design Review,			37237

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2nd qtr FY09. Continue to refine RSV mission workstation and integrated platform design in preparation for Critical Design Review, 2nd qtr FY10. Complete RSV rooftop sensor deconfliction testing and publish results of each completed phase for use in Modeling and Simulation efforts on all MGVS platforms. Finalize RSV systems engineering architecture. Finalize RSV Interface Control Documents (ICDs) and Critical Item Development Specification (CIDS). There will be approximately 17 internal ICDs (dependent on final design changes). In addition to internal developed ICDs, there are approximately 100 externally provided ICDs developed by distributed systems. BAE has contract for turret design: GDLS for integration of turret into the vehicle. Material for Armor structure, chassis structure, ECS, fuels subsystem, mission structure, NBC System, SIGMAN Subsystem, M44/M240 Coax, and Turret Structure are scheduled for FY09. Order long lead subsystems and materiel in preparation for RSV prototype builds. Major subcomponents integrated into the turret include; Mast, LR EO/IR, CID, EMS, WIN-T, APS, MFRF, MFCM, JSLSCAD provided by C4ISR for receipt in FY10. Create RSV model for M&S and provide to SoSIL (Integration and Verification Phase IV). Complete RSV software architecture and continue RSV software development and integration in support of MGVS Software Build 2.0. Conduct RSV Software Requirements update and begin software development in support of MGVS Software Build 3 LCO.		
CONTRACTOR FIELD RECOVERY & MAINTENANCE VEHICLE (FRMV) - FY08 - Continue Preliminary Design Activities for 2nd qtr FY09 PDR. Evaluate alternate crane drive systems, and optimize the FRMV suspension system for stability during crane maintenance operations. Optimize the FRMV weight for towing conditions and the FRMV towing capacity in varying terrain and environmental conditions. Finalize the FRMV towing design for propulsion, suspension, and braking. Award crane actuator, recovery winch, and recovery winch sub-contracts. Continue FRMV Software Build 2 development activities and conduct the Build 2 Life Cycle Objective (LCO).		10615
CONTRACTOR FIELD RECOVERY & MAINTENANCE VEHICLE (FRMV) - FY09 FRMV Planned Accomplishments - Conduct FRMV PDR in 2nd qtr FY09 in preparation for an FRMV Critical Design Review (CDR) in 2nd qtr FY10. Fabricate Crane Test Fixture and conduct Crane Testing. Software: Continue Software Build 2, and initiate Software Build 3 development activities while conducting Build 3 Life Cycle Objective (LCO). Initiate procurement of unique mission equipment raw material, to include welder, cutter & heating equipment that will be stored on the FRMV and used in recovery and maintenance operations. Modeling and Simulation: Integrate Build 3 FSE from MS&I and begin ISM update. Integration Test Stand (Component and Subsystem Testing). Conduct Crane Test at SIL.		28103
CONTRACTOR MEDICAL VEHICLE (MV-E/T) - FY08 - Continue Preliminary Design Activities for 2nd qtr FY09 PDR. Conduct subsystem evaluations using the MV-E mock-up. Fabricate a MV-treatment mock-up for the evaluation of treatment table options, refrigerator options, deployable shelter options, and medical equipment sets/patient movement items stowage design options. Perform down selection of MV-T Shelter. Continue MV Software Build 2 development activities and conduct the Build 2 Life Cycle Objective (LCO).		7046
CONTRACTOR MEDICAL VEHICLE (MV-E/T) - FY09 - Conduct MV PDR in 2nd qtr FY09 in preparation for CDR in 2nd qtr FY10. Software: Complete Build 1 integration, continue Software Build 2, and initiate Software Build 3 development activities while conducting Build 3 Life Cycle Objective (LCO). Modeling and Simulation: Integrate Build 3 FSE from MS&I and begin ISM update. Initiate integration activities for the MV-E & MV-T prototype fabrication of two prototypes with delivery dates scheduled for the 4th quarter FY11.		15516
CONTRACTOR MGVS COMMON COMPONENTS - FY08 - Platform preliminary design activities. Complete build 1 S/W development and integration (FQTD). Complete S/W Build 2 Life Cycle Objective (LCO). Architecture (LCA) reviews for all vehicle/common subsystems. SoSIL SIM/ IV2 MV model updated. Complete SRCM Design Verification Testing Phase 1. Upgraded propulsion components, such as TDS & band track to implement the 27.4 ton configuration, will be procured in FY08 for the NLOS-C prototypes.		412626

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Also in FY08 we will be procuring Laser Warning Receiver Sensor, Multifunction Countermeasure, Crew Station Displays and controls and CCAS Remote Weapon Systems. Deliver common components for the 24 ton early March NLOS-C prototype in FY08 and the 27.4 ton prototype in FY09.			
CONTRACTOR MGV COMMON COMPONENTS - FY09 - Platform Preliminary Design Reviews. All MGV Common subsystems will be ready to go into their detailed design following subsystem PDRs leading to a Common Chassis PDR. Armor Component Maturation: Mine Blast / Add-on Armor complete. Armor Performance Objective (PO) issued. Software: Build 2 TRR , Build 3 Requirements Baseline Review (RBR) and LCO. Modeling & Simulation: Build 1 complete, Build 2 ongoing, Build 3 begins (FSE from MS&I). Integration and Verification: begin SEIT SIL integration and test. NBC SIL IV2 complete with NBC IV2 complete, begin SEIT SIL integration and test. Assemble, weld and machine hull raw materials, Procure appendages and first hull structure material available. Hit Avoidance System (HAS) detail design analysis and assessment complete. HAS Controller and Hit Avoidance Countermeasure Controller software Build 2 ongoing. MGV Active Protection System hardware/software Integration and verification begins. Current Force APS integration and verification begins and prototypes delivery to PEO GCS for integration to current force vehicles.			474323
GOVERNMENT GFX - Active Protection System (APS) FY08 - 09 - Consists of Government Support Subject Matter Experts (SMEs) to assist LSI in development of APS. MK30 development, ARDEC Shaker Table rent for MCS Firing fixture testing		3746	2158
Small Business Innovative Research/Small Business Technology Transfer Programs		16571	
<b>Total</b>		<b>592254</b>	<b>774257</b>

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<b><u>B. Program Change Summary</u></b>	FY 2007	FY 2008	FY 2009	
Previous President's Budget (FY 2008/2009)		696333	772458	
Current BES/President's Budget (FY 2009)		592254	774257	
Total Adjustments		-104079	1799	
Congressional Program Reductions		-100300		
Congressional Recissions		-3779		
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer				
Adjustments to Budget Years			1799	

<b><u>C. Other Program Funding Summary</u></b>	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		592244	774257	785575	358641	214207	103230	Continuing	Continuing
0604661A FCS System of Systems Engr & Program Management		1497321	1413945	1874987	1916207	1290308	1027816	Continuing	Continuing
0604662A FCS Reconnaissance (UAV) Platforms		43388	34379	14296	9235	4556	1336	Continuing	Continuing
0604663A FCS Unmanned Ground Vehicles		90091	96918	64744	43601	26855	3580	Continuing	Continuing
0604664A FCS Unattended Ground Sensors		10929	12967	18968	16754			Continuing	Continuing
0604665A FCS Network Hardware & Software		647649	539145	334085	365287	290790	169526	Continuing	Continuing
0604646A Non Line of Sight - Launch System	313981	253075	200099	40043	5957			Continuing	Continuing
0604647A Non Line of Sight _ Cannon	108689	136929	89841	71396	43222	28775		Continuing	Continuing
0604666A FCS Spin Outs	27900	64385	64900	67021	51026	56287	14637	Continuing	Continuing
0603639A FCS MRM		44294	45866	71451	56296	106353	50757	Continuing	Continuing
0604715A STRICOM/NAWCTSD Support		378	388	398	406	415	426	Continuing	Continuing
WTCV G86100 FCS Core Program		80932	154583	148028	677820	2175327	5744649	Continuing	Continuing
WTCV G86200 FCS Spin Out Program		19987	176667	367962	550821	766274	944999	Continuing	Continuing

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AMMO E88103					24634	47624	61762	Continuing	Continuing
0604645 F52 UAV Recon & Sensors	26360							Continuing	Continuing
0604645 F53 UGV	106516							Continuing	Continuing
0604645 F54 UGS	10612							Continuing	Continuing
0604645 F55 SUSTAINMENT	106517							Continuing	Continuing
0604645 F57 MANNED GROUND VEHICLES	563946							Continuing	Continuing
0604645 F61 SoS Engineering and Program Management	2142970							Continuing	Continuing

Comment:

**D. Acquisition Strategy** The Army awarded the original Manned Ground Vehicle (MGV) contract 30 May 2003; and definitized the contract on 10 Dec 2003 to BAE Systems and General Dynamic Land Systems. The Manned Ground Vehicle family consists of (9) vehicle platforms which will be produced cooperatively by BAE and GD corporations. FY09 FCS will complete the Systems of Systems Platform Design Reviews (PDRs) and continue with platform Critical Design Reviews (CDRs) to finalize prototype efforts.

# ARMY RDT&E COST ANALYSIS (R3)

February 2008

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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)	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 2				14854	1-3Q	34340	1-3Q		49194	
MOUNTED COMBAT SYSTEMS (MCS)	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 1				67979	1-3Q	94021	1-3Q		162000	
NON-LINE OF SIGHT MORTAR (NLOS-M)	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 3				21352	1-3Q	52450	1-3Q		73802	
Common Vehicle Components	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 1,2,3				412626	1-3Q	474323	1-3Q		886949	
COMMAND & CONTROL VEHICLE (C2V)	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 1				17969	1-3Q	36109	1-3Q		54078	
RECONNAISSANCE & SURVEILLANCE VEHICLE	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 1				19496	1-3Q	37237	1-3Q		56733	
Medical Vehicle (MV)	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 3				7046	1-3Q	15516	1-3Q		22562	
FCS RECOVERY & MAINT VEH (FRMV)	FAR	THE BOEING COMPANY - ST. LOUIS, MO, see remark 2				10615	1-3Q	28103	1-3Q		38718	

# ARMY RDT&E COST ANALYSIS (R3)

**February 2008**

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GFX and other	Direct	PM FCS(BCT), St. Louis, MO				3746	1-3Q	2158	1-3Q		5904
Subtotal:						575683		774257			1349940

Remarks: Remark #1 - Subcontractor: General Dynamics, Sterling Heights, MI; award date Dec 2003  
 Remark #2 - Subcontractor: BAE - Ground Systems Division, Santa Clara, CA; award date Dec 2003  
 Remark #3 - Subcontractor: BAE - Armament Systems Division, Minneapolis, MN; award date Dec 2003

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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
SBIR/STTR	Direct	OSD				16571	2-3Q				16571	
Subtotal:						16571					16571	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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 0604661 FC2 SoS Engineering and Program Management project.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	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:												

<b>Project Total Cost:</b>						<b>592254</b>		<b>774257</b>			<b>1366511</b>
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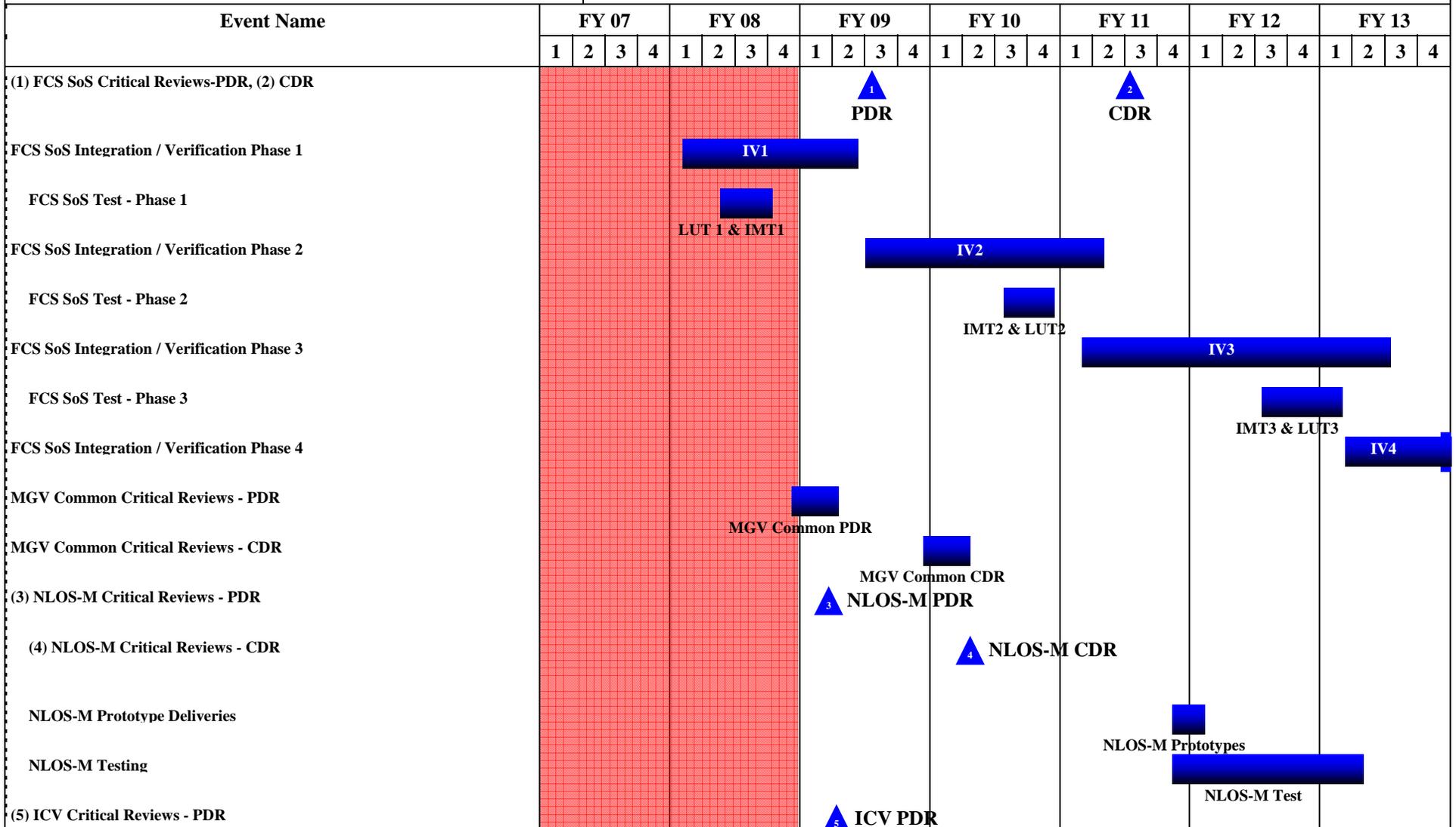
# Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY  
**5 - System Development and Demonstration**

PE NUMBER AND TITLE  
**0604660A - FCS Manned Grd Vehicles & Common Grd Vehicle**

PROJECT  
**FC1**





# Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY  
**5 - System Development and Demonstration**

PE NUMBER AND TITLE  
**0604660A - FCS Manned Grd Vehicles & Common Grd Vehicle**

PROJECT  
**FC1**

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(14) C2V Critical Reviews - CDR																	▲ <sup>14</sup> C2V CDR															
C2V Prototvpe Deliveries (4)																																
C2V Testing																	■ C2V Test															
(15) MV E/T Critical Reviews - PDR																	▲ <sup>15</sup> MV E/T PDR															
(16) MV E/T Critical Reviews - CDR																													▲ <sup>16</sup> MV E/T CDR			
MV E/T Prototvpe Deliveries (2)																	■ MV E/T Prototypes															
MV E/T Testing																	■ MV E/T Test															

## Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>		PE NUMBER AND TITLE <b>0604660A - FCS Manned Grd Vehicles &amp; Common Grd Vehicle</b>					PROJECT <b>FC1</b>	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
FCS SoS Critical Reviews-PDR			3Q					
CDR					3Q			
FCS SoS Integration / Verification Phase 1		1Q - 4Q	1Q - 2Q					
FCS SoS Test - Phase 1		2Q - 4Q						
FCS SoS Integration / Verification Phase 2			3Q - 4Q	1Q - 4Q	1Q - 2Q			
FCS SoS Test - Phase 2				3Q - 4Q				
FCS SoS Integration / Verification Phase 3					1Q - 4Q	1Q - 4Q	1Q - 3Q	
FCS SoS Test - Phase 3						3Q - 4Q	1Q	
FCS SoS Integration / Verification Phase 4							1Q - 4Q	
FCS SoS Test - Phase 4								
MGV Common Critical Reviews - PDR		4Q	1Q - 2Q					
MGV Common Critical Reviews - CDR			4Q	1Q - 2Q				
NLOS-M Critical Reviews - PDR			1Q					
NLOS-M Critical Reviews - CDR				2Q				
NLOS-M Prototype Deliveries					4Q	1Q		
NLOS-M Testing					4Q	1Q - 4Q	1Q - 2Q	
ICV Critical Reviews - PDR			2Q					
ICV Critical Reviews - CDR				2Q				
ICV Prototype Deliveries (4)					2Q - 4Q			
ICV Testing					2Q - 4Q	1Q - 4Q	1Q - 3Q	
MCS Critical Reviews - PDR			2Q					
MCS Critical Reviews - CDR				2Q				
MCS Prototype Deliveries (6)					2Q - 4Q	1Q		
MCS Testing					2Q - 4Q	1Q - 4Q		
RSV Critical Reviews - PDR			2Q					

RSV Critical Reviews - CDR				2Q			
RSV Prototype Deliveries (6)					2Q - 4Q	1Q	
RSV Testing					2Q - 4Q	1Q - 4Q	1Q - 2Q
FRMV Critical Reviews - PDR			2Q				
FRMV Critical Reviews - CDR				2Q			
FRMV Prototype Deliveries (2)					3Q		
FRMV Testing					3Q - 4Q	1Q - 4Q	1Q - 2Q
C2V Critical Reviews - PDR			1Q				
C2V Critical Reviews - CDR				2Q			
C2V Prototype Deliveries (4)						1Q - 2Q	
C2V Testing						1Q - 4Q	1Q
MV E/T Critical Reviews - PDR			2Q				
MV E/T Critical Reviews - CDR				2Q			
MV E/T Prototype Deliveries (2)						1Q	
MV E/T Testing						1Q - 4Q	1Q