ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**

COST (In Thousands)		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	58078	47828	117471	Continuing	Continuing
978	SPACE CONTROL	6031	6972	103102	Continuing	Continuing
990	Space and Missile Defense Integration	52047	40856	14369	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element funds space systems integration efforts performed by the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT).

USASMDC/ARSTRAT: Headquarters, Department of the Army General Order Number 37, dated 16 October 2006, designated SMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), the Army integrator for global missile defense, and the Army Service Component Command of U.S. Strategic Command (USSTRATCOM). As such, SMDC is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel and Facilities (DOTMLPF) solutions to realize those space related capabilities.

Project #978 funds Space Control and the Long Endurance Multi-Intelligence Vehicle (LEMV). The Army Space Superiority (SS) Family of Systems (FoS) provides ground based tactically centric space information superiority capabilities to meet current Joint Requirements and validated Training and Doctrine Command (TRADOC) capability gaps. Space information superiority has gained importance with proliferation of satellite technologies and availability of space data products. Adversaries now have near equal access to a full array of space data products which reduces our information superiority. The Army Space Superiority (SS) Family of Systems (FoS) concept consists of ground based sensors for space situational awareness and advanced ground based tactical capabilities to establish and maintain assured space data access and information superiority for support of tactical operations.

The LEMV will be utilized to provide persistent Intelligence, Surveillance and Reconnaissance (ISR) support in multiple environments, including combat areas. Technical objectives for the LEMV include an unmanned aerial system capable of being controlled through an existing Department of Defense ground station, 3 week flight endurance, 2,500 pound sensor payload, 20,000 feet operating altitude, multi-intelligence capable, 16 kilowatts of power for payload, capable of station keeping (the capability to loiter or maintain position over a required mission area in different types of weather), recoverable and reusable.

Project #990 funds the Future Warfare Center (FWC) to mature warfighting concepts, and validate concepts, identify capabilities needed to implement the validated concepts, and develop DOTMLPF solutions to realize those space and high altitude related capabilities. Also sustains Joint Blue Force Situational Awareness (JBFSA) Mission Management Center and its associated testbed for both operations and spiral development for 24/7 Blue Force Tracking integration into a real-time common operating picture for Combatant Commanders, Joint Task Force Commanders and Coalition partners.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**

B. Program Change Summary	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	49285	19986	27225
Current BES/President's Budget (FY 2010)	58078	47828	117471
Total Adjustments	8793	27842	90246
Congressional Program Reductions		-158	
Congressional Rescissions			
Congressional Increases		28000	
Reprogrammings	10000		
SBIR/STTR Transfer	-1207		
Adjustments to Budget Years			90246

Change Summary Explanation: : FY 2008 - $10,000 omnibus reprogramming for the High Altitude Airship. FY 2009 - $27,842 increase for congressional adds. FY 2010 - $10,246 increase for the Space Control program to complete pre-Milestone B activities (Milestone B is projected for first quarter FY 2011) and technology risk reduction and $80,000 increase for the Long Endurance Multi-Intelligence Vehicle (LEMV).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**978**

COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
978 SPACE CONTROL	6031	6972	103102	Continuing	Continuing

A. Mission Description and Budget Item Justification: Space Control - The mission of the Army Space Superiority (SS) Family of Systems (FoS) is the development of ground based tactically centric space information superiority capabilities to meet current Joint Requirements and validated Training and Doctrine Command (TRADOC) capability gaps. Space information superiority has gained importance with proliferation of satellite technologies and availability of space data products. Adversaries now have near equal access to a full array of space data products which reduces our information superiority. The Army Space Superiority (SS) Family of Systems (FoS) concept consists of ground based sensors for space situational awareness and advanced ground based tactical capabilities to establish and maintain assured space data access and information superiority for support of tactical operations. The Joint Requirements Oversight Council approved the first Initial Capability Document (ICD) for these capabilities in 2007, allowing an initial capability to advance towards Technology Development and Acquisition. This project supports classified activities. Additional information may be obtained by contacting the Army Technology Management Office (TMO)

Long Endurance Multi-Intelligence Vehicle (LEMV) - The LEMV will be utilized to provide persistent Intelligence, Surveillance and Reconnaissance (ISR) support in multiple environments, including combat areas. Technical objectives for the LEMV include an unmanned aerial system capable of being controlled through an existing Department of Defense ground station, 3 week flight endurance, 2,500 pound sensor payload, 20,000 feet operating altitude, multi-intelligence capable, 16 kilowatts of power for payload, capable of station keeping (the capability to loiter or maintain position over a required mission area in different types of weather), recoverable and reusable.

Accomplishments/Planned Program:	FY 2008	FY 2009	FY 2010
Space Control - Develop and maintain Space Control program plans and strategies. Program management for Space Superiority (SS) Family of System (FoS) materiel development and acquisition planning, security program establishment and associated facility security accreditation. Prepare and coordinate appropriate memorandum of agreements with associated programs and technology transition plan with designated program executive office. Develop and maintain security classification guidance and operating security plans.	2248	949	1046
Space Control - Define SS FoS System Architectural requirements and coordinate with combat developer on system requirements, concept of operations and analysis of alternates. Conduct market survey and coordinate with other services on technology development that can be leveraged by the Army. Analyze alternative materiel concepts; determine measures of performance and measures of effectiveness for system attributes. Conduct system engineering and trade studies on viable concepts. Identify risk areas in technical performance, sustainability, cost and schedule. Develop materiel acquisition documentation to support milestone decisions and contracting actions.	1567	1679	5490
Space Control - Conduct risk reduction efforts that include prototyping system representative command and control sub-elements to validate critical Command and Control connectivity and battle management functional processes early in development to demonstrate that operational security and positive system control can be achieved and accredited by appropriate authorities. Engineering testing includes characterization and demonstration of sub-system interfaces, demonstrations/validations of sub-subsystem functional interactions, validation of technology integration and performance objectives for sub-system processors, and collection of supportability related data required for development of the integrated logistic support package. Testing will be conducted in relevant operational environments to validate technology maturity.	2216	4149	16566

LEMV - Develop and maintain LEMV program plans and strategies. Program management for LEMV materiel development and acquisition planning, testing, and initial demonstration planning.			3000
LEMV - Define LEMV system architectural requirements and coordinate with combat developer on concept of operations. Coordinate with other Services on technology development. Conduct system engineering and trade studies on viable concepts. Identify risk areas in technical performance, sustainability, cost and schedule. Develop materiel acquisition documentation to support milestone decisions and contracting actions.			1000
LEMV - Conduct risk reduction efforts that include prototyping system representative command and control sub-elements to validate critical command and control connectivity and battle management functional processes early in development to show successful demonstration. Engineering testing includes characterization and demonstration of sub-system interfaces, demonstrations/validations of sub-subsystem functional interactions, validation of technology integration and performance objectives for sub-system processors, and collection of supportability related data required for development of the integrated logistic support package. Testing will be conducted in relevant operational environments to validate technology maturity.			4000
LEMV - Award contract, initiate design and fabrications, and conduct Preliminary Design Review and Critical Design Reviews.			72000
Small Business Innovative Research/Small Business Technology Transfer Program		195	
Total	6031	6972	103102

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Space Control - Acquisition plans for the ground based Space Superiority Family of Systems will be developed in accordance with Department of Defense Directive 5000.1, The Defense Acquisition System and will utilize single step to full capability approaches with block software update to meet the evolving threat. In accordance with current Army policies, acquisition activities will be transitioned to the appropriate program executive office as determined by the Army Acquisition Executive. These system designs will leverage any Science and Technology Objectives (STO) or Advanced Concept Technology Demonstrations (ACTDs) from various technology developers that are ready to transition into an acquisition program. Once systems are fielded, they will be retrofitted with upgraded hardware and software.

Long Endurance Multi-Intelligence Vehicle (LEMV) - The Army anticipates establishing an Other Transaction Authority (OTA) for this acquisition with the intention of increasing participation from non-traditional Department of Defense contractors. This acquisition is being pursued as a rapid acquisition and must complete Developmental and Operational testing within 18 months of award. As an OTA prototype acquisition, this requirement is subject to individual negotiation and bidders that can meet the stated requirements, are substantially capable of meeting the requirements or can substantially exceed requirements in specific areas are requested to submit summary information on their products for consideration and further discussion.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY
4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE
0603308A - Army Space Systems Integration

PROJECT
978

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
Space Control - Systems and technical architectures	Various	Various	378	400	1-4Q						778	
Space Control - Concept Development and Engineering Trade Studies	Various	Various	2956	1421	1-4Q	485	1-4Q	242	1-4Q		5104	
Space Control - Sub-system risk reduction, testing, and validation	Various	Various		1126	3-4Q	150	1-4Q	779	1-4Q	Cont.	Cont.	
Space Control - Design, Development and sub-system integration	Various	Various		1238	3Q	3399	1-4Q	12316	1-4Q	Cont.	Cont.	
LEMV - Systems and technical architectures	Various	Various						20000	1-4Q	Cont.	Cont.	
LEMV - Concept development and engineering trade studies	Various	Various						2000	1-4Q	Cont.	Cont.	
LEMV - Sub-system risk reduction, testing, and validation	Various	Various						10000	1-4Q	Cont.	Cont.	
LEMV - Design, development, and sub-system integration	Various	Various						40000	1-4Q	Cont.	Cont.	
Subtotal:			3334	4185		4034		85337		Cont.	Cont.	

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
Space Control - Government support and support contracts	Various	Various	275	200	1-4Q	200	1-4Q	3423	1-4Q	Cont.	Cont.	
LEMV - Government support and support contracts	Various	Various						8000	1-4Q	Cont.	Cont.	
Subtotal:			275	200		200		11423		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**978**

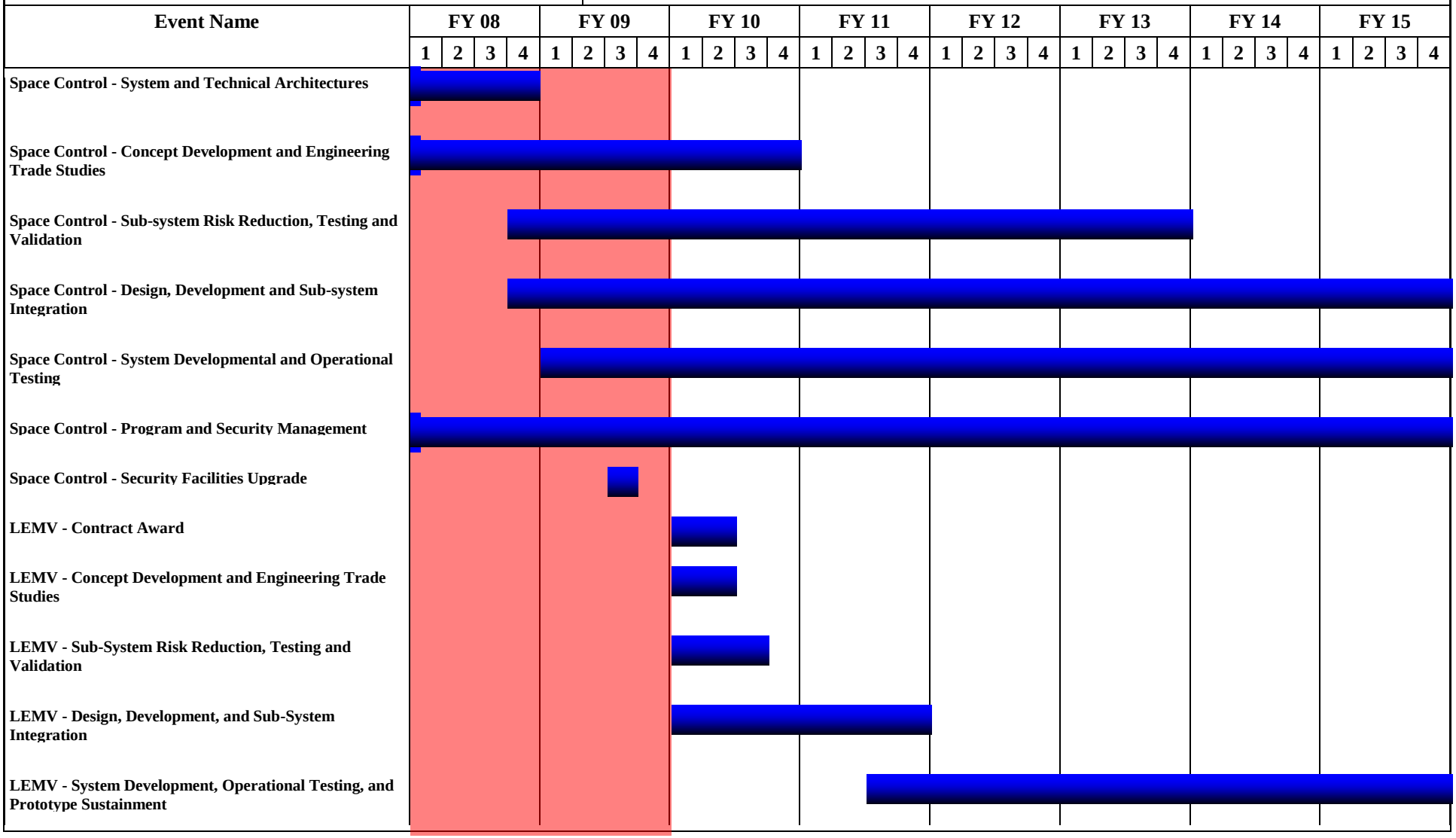
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Space Control - T&E Support	Various	Various	250	150	1-4Q	750	1-4Q	4250	1-4Q	Cont.	Cont.	
Subtotal:			250	150		750		4250		Cont.	Cont.	

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
Space Control - Program and Security Management	Various	Various	1311	1496	1-4Q	1688	1-4Q	2092	1-4Q	Cont.	Cont.	
Space Control - Security Facilities Upgrade					3Q	300					300	
Subtotal:			1311	1496		1988		2092		Cont.	Cont.	
Project Total Cost:			**5170**	**6031**		**6972**		**103102**		**Cont.**	**Cont.**	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**978**



Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**978**

Schedule Detail	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Space Control - System and Technical Architectures	1Q - 4Q							
Space Control - Concept Development and Engineering Trade Studies	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Space Control - Sub-system Risk Reduction, Testing and Validation	3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q		
Space Control - Design, Development and Sub-system Integration	3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Space Control - System Developmental and Operational Testing		1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Space Control - Program and Security Management	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Space Control - Security Facilities Upgrade		3Q						
LEMV - Contract Award			1Q - 2Q					
LEMV - Concept Development and Engineering Trade Studies			1Q - 2Q					
LEMV - Sub-System Risk Reduction, Testing and Validation			1Q - 3Q					
LEMV - Design, Development, and Sub-System Integration			1Q - 4Q	1Q - 4Q				
LEMV - System Development, Operational Testing, and Prototype Sustainment				2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**990**

COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
990 Space and Missile Defense Integration	52047	40856	14369	Continuing	Continuing

A. Mission Description and Budget Item Justification: Headquarters Department of the Army (HQDA) General Order Number 37, dated 16 October 2006, designated SMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), the Army integrator for global missile defense, and the Army Service Component Command of the U.S. Strategic Command (USSTRATCOM). As such, USASMDC is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel and Facilities (DOTMLPF) solutions to realize those space related capabilities.

Accomplishments/Planned Program:	FY 2008	FY 2009	FY 2010
Plan, develop, and execute concepts and DOTMLPF solutions for Army exploitation of space systems, including Space-Based Infrared System (SBIRS), Multi-Mission Mobile Processor (M3P), and various space control capabilities. Represent Army positions and defend Army equities relative in Joint/DoD and inter-Service activities; e.g., National Security Space Architect (NSSA) Program Assessments, etc. Develop space modernization strategies and sponsor exploration of future space, High Altitude, and missile defense warfighting concepts in support of Army Transformation. Sustain Joint Blue Force Situational Awareness (JBFSA) Mission Management Center and its associated testbed for both operations and spiral development for 24/7 Blue Force Tracking integration into a real-time common operating picture for Combatant Commanders, Joint Task Force Commanders and Coalition partners.	10836	12632	14369
Includes FY08/09 Congressional Adds for Applied Counterspace Technology Testbed, Army Responsive Tactical Space, Geospatial Airship Research Platform (GARP), High Altitude Airship, High Energy Matter Space Propulsion, HiSentinel, High Altitude Integration Testbed, High Altitude Shuttle System for Battlespace Coverage, High Fidelity Imaging System, Integrated Modeling of Air and Ground Environments (IMAGE), Integrated Nanosat Delivery System, Low Cost Interceptor, Missile Attack Early Warning System, Multipurpose Nanosat Missile System, Nanocomposite Enhanced Radar and Aerospace Materials, Positron Sensors and Energy Applications, Simulation and Design of Large Electromagntic Systems, Small Agile Satellites, Spatial Acquisition and Measurement of Power Sources, Tactical Overwatch High Altitude System and Ultralight UAV Sensor Platform.	41211	27226	
Small Business Innovative Research/Small Technology Transfer Programs		998	
Total	52047	40856	14369

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Program is continuous. Various performers will conduct planned accomplishments.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**990**

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
Various	Various	Various	104521								104521	
Execute Congressional adds	Various	Various	62705	41211	2-4Q	28224					132140	
Subtotal:			167226	41211		28224					236661	

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
GOVT SUPPORT & SUPPORT CONTRACTS	Various	Various in Colorado Springs CO, Washington DC, and Huntsville AL	53796	10836	1-4Q	12632	1-4Q	14369	1-4Q	Cont.	Cont.	
Subtotal:			53796	10836		12632		14369		Cont.	Cont.	

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: Not Applicable

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
Subtotal:												

Remarks: Not Applicable

ARMY RDT&E COST ANALYSIS (R3)										May 2009
BUDGET ACTIVITY **4 - Advanced Component Development and Prototypes**	PE NUMBER AND TITLE **0603308A - Army Space Systems Integration**									PROJECT **990**
Project Total Cost:	**221022**	**52047**		**40856**		**14369**		**Cont.**	**Cont.**	

Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**990**

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	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	1	2	3	4
Development/synchronization of Army space and BMD DOTMLPF solutions.																																
Provide 24/7 support to Blue Force Tracking.																																
Execute FY08/09 Congressional Adds																																

Schedule Detail (R4a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	**0603308A - Army Space Systems Integration**	**990**

Schedule Detail	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Development/synchronization of Army space and BMD DOTMLPF solutions.	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Provide 24/7 support to Blue Force Tracking.	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Execute FY08/09 Congressional Adds	1Q - 4Q	1Q - 4Q	1Q - 4Q					