Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305204A: *Tactical Unmanned Aerial Vehicles*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	262.655	54.300	40.650	-	40.650	15.681	24.420	12.019	19.420	Continuing	Continuing
114: *Tactical Unmanned Aerial Vehicle (TUAV) (MIP)*	62.188	1.672	-	-	-	-	-	-	-	0.000	63.860
11A: *Advanced Payload Develop & Spt (MIP)*	39.591	40.252	15.935	-	15.935	6.180	14.849	7.299	11.855	Continuing	Continuing
11B: *TSP DEVELOPMENT (MIP)*	19.393	5.336	20.392	-	20.392	5.221	5.375	2.677	4.313	Continuing	Continuing
123: *JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)*	4.389	6.698	4.323	-	4.323	4.280	4.196	2.043	3.252	Continuing	Continuing
D09: *EXTENDED RANGE UAV (MIP)*	135.136	-	-	-	-	-	-	-	-	Continuing	Continuing
D10: *SUAV (MIP)*	1.958	0.342	-	-	-	-	-	-	-	0.000	2.300

Note

Change Summary Explanation: Funding - FY 2011: Funds realigned to higher priority Army requirements.

A. Mission Description and Budget Item Justification

Project 114, Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system meets the required operating range of 50 kilometers and remains on station for up to five hours It consists of four air vehicles (each configured with an EO/IR sensor payload), launcher, ground control, and support equipment including power generation, communications equipment, automated recovery equipment, one system remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) Vehicle and is supported at the division level by a Mobile Maintenance Facility (MMF).

Project 11A, The STARLite Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload will provide a wide-area search capability with a built-in imaging mode that provides essential all-weather surveillance and
increased situational awareness. The STARLite payload is a principal payload for the Gray Eagle UAV. The Electro Optical Infra Red w/Laser Designator (EO/IR/LD) Common Sensor Payload (CSP) was built at the direction
of the Vice Chief of Staff of the Army for the Gray Eagle system and has potential application to other platforms. The CSP system will provide a day/night capability to collect and display continuous imagery with the

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
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ability to designate targets of interest for attack by laser guided precision weapons. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the
Army's Current and Future Force. This effort has been expanded to include High Definition (HD) Target Location Accuracy (TLA) capability

Project 11B, The Tactical Signals Intelligence (SIGINT) Payload (TSP) is an Unmanned Aircraft System (UAS) mounted SIGINT sensor that detects radio frequency (RF) emitters. TSP, through handoff from the Combat Aviation Brigade, is
capable of providing the Tactical Land Commander with an overwatch and penetrating SIGINT system capable of detecting, identifying, locating, and providing geolocation information on RF emitters throughout the Area of Operations. The TSP is scalable and modular, designed to provide maximum flexibility. TSP will provide near real time actionable intelligence that can immediately be used in the commander's decision cycle. The TSP electronic emitter information will be correlated with data from other systems (e.g. Prophet and Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS), at a Distributed Common Ground System-Army (DCGS-A) node to provide precise targeting information for immediate engagement. TSP maps and aligns with the 2009 Under Secretary of Defense for Intelligence Cross Cutting study and Force Sizing Assessment with Airborne Precision Geolocation and Tactical SIGINT capabilities. TSP also supports the 2009 Office of the Secretary of Defense Cross-Cutting Study: Six Overarching Axioms for Information Warfare, Intelligence, Surveillance, and Reconnaissance (ISR) Force Sizing, VCJCS Update, 25 Apr 09, with SIGINT (Geolocation) and SIGINT (Internals). TSP sensors are critical to providing Reconnaissance, Surveillance, and Target Acquisition (RSTA) information and contributing to the Joint ISR net.

Project 123, Joint Technology Center/System Integration Laboratory (JTC/SIL) is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development (i.e., TUAV Tactical Unmanned Control System (TUCS), TUAV Institutional Mission Simulation (IMS) Trainer, TUAV C4I module), modeling and simulation support. The MUSE develops real-time, operator in-the-loop simulations that are capable of tactical Hardware-In-the-Loop (HWIL) interoperability for multiple intelligence systems, that may be integrated with larger simulations in support of Service training and exercises. MUSE provides a realistic operational environment, supporting a wide range of C4I applications. This project funds the management of the JTC/SIL and MUSE enhancements.

Project D09, Production Extended Range Multi-Purpose (ERMP) Unmanned Aircraft system (UAS) will consist of 12 Unmanned Aircraft System each equipped with multi-mission payloads and a Standard Equipment Package (SEP). The threshold payload is an EO/IR/LD sensor. The SEP includes a communications relay package, Identify Friend or Foe (IFF) equipment and Air Traffic Control radios. Associated Ground Support Equipment (GSE) will have One

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B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	202.116	54.300	90.418	-	90.418
Current President's Budget	262.655	54.300	40.650	-	40.650
Total Adjustments	60.539	-	-49.768	-	-49.768
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	60.539	-	-49.768	-	-49.768

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
114: *Tactical Unmanned Aerial Vehicle (TUAV) (MIP)*	62.188	1.672	-	-	-	-	-	-	-	0.000	63.860
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system air vehicle meets the required operating range of 50 kilometers and remains on station for up to five hours. The TUAV Shadow system consists of four air vehicles (each configured with an EO/IR sensor payload), launcher, ground control and support equipment including: power generation, communications equipment, automated recovery equipment, one system remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) Vehicle and is supported at the division level by a Mobile Maintenance Facility (MMF).

The TUAV has logged over 575,000 flight hours since Jun 01, most of which were flown in support of Operation Iraqi Freedom and Operation Enduring Freedom. Block upgrades are required for continued improvement and interoperability. Common Systems Integration is required to ensure interoperability with other manned and unmanned weapon systems, to include One System Remote Video Transceiver (OSRVT). Additional development and integration is also required to provide greater capabilities and improved operational flexibility to the Brigade Commander. These improvements to the airframe, avionics, payloads, ground control equipment, and support equipment are based on documented requirements and lessons learned from operational units. Only the SIGINT effort with the payloads improvement is new for FY12. Work previously shown under OIF Improvements/Block Upgrades/Capability Improvements in previous budgets is broken out for greater clarity.

Funding shifts to PE 0305233A - RQ-7 UAV MODS, Project RQ7 in FY11.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Base: Block Upgrades / Capability Improvements	8.237	1.672	-	-	-
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2010 Accomplishments: Base: OIF Improvements / Block Upgrades / Capability Improvements					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Base: OIF Improvements / Block Upgrades / Capability Improvements					
Title: Base: 4th Generation Wireless Exploitation ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Base: 4th Generation Wireless Exploitation	2.400 0	-	-	-	-
Title: Base: Test and Evaluation ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Base: Test and Evaluation	2.264 0	-	-	-	-
Title: Base: Common System Integration (UGCS, Trainers, OSRVT) ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Base: Common System Integration (UGCS, Trainers, OSRVT)	16.124 0	-	-	-	-
Title: Base: TUAS Heavy Fuel Engine (HFE) ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Base: TUAS Heavy Fuel Engine (HFE)	1.600 0	-	-	-	-
Title: Base: Program Management Support ***Articles:*** ***Description:*** Funding is provided for the following effort	0.234 0	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Base: Program Management Support					
Title: Base: Other Government Agencies (OGA) ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Base: Other Government Agencies (OGA)	1.829 0	-	-	-	-
Title: OCO; Shadow Encryption -- Type 2 Interim Encryption System (TIES) ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** OCO; Shadow Encryption -- Type 2 Interim Encryption System (TIES)	29.500 0	-	-	-	-
Accomplishments/Planned Programs Subtotals	62.188	1.672	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• (A00018): *TUAV Procurement*	649.939	602.815	151.464		151.464		116.199	169.042	172.087	0.000	2,022.745
• (BS9738): *Initial Spares - TUAV*	2.743	2.628								Continuing	Continuing
• PE 0305233A RQ-7: *UAV RDTE*		7.805	31.940		31.940		22.507	22.687		0.000	108.309

D. Acquisition Strategy

A System Capability Demonstration (SCD) was conducted with four contractors. The results from the SCD in conjunction with proposal evaluations resulted in the competitive down select of a Best Value TUAV system. A successful Milestone II ASARC was conducted 21 Dec 99, and a TUAV LRIP contract was awarded to AAI Corporation 27 Dec 99. In order to accelerate fielding of the TUAV system, a second LRIP for four systems was awarded 30 Mar 01 following a successful OPTEMPO test. In order to maintain accelerated fielding and continue ramp up to full rate production, a third LRIP was awarded in Mar 02. A successful LRIP program led to a MS III decision 25 Sep 02. The full rate production contract was awarded 27 Dec 02. Continued development of the selected TUAV system will be accomplished through a series of modifications and retrofits such as Tactical Common Data Link (TCDL), Communications Relay, Laser Designator, and reliability upgrades.

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E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel	Various	PM UAS:Huntsville, AL	9.443	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	9.443	-		-		-		-			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Base: Target Location Error (TLE) / TCDL/JTRS / Laser Designator	Various	AAI Corporation:Hunt Valley, MD	52.200	-		-		-		-	Continuing	Continuing	Continuing
Base: OIF Improvements / Block Upgrades / Capability Improvements	Various	AAI Corporation:Hunt Valley, MD	13.918	1.672		-		-		-	Continuing	Continuing	Continuing
Base: Re-Wing	Various	AAI Corporation / Other Government Agency:Hunt Valley, MD	10.600	-		-		-		-	Continuing	Continuing	Continuing
Base: Shadow Flight in NAS	Various	AAI Corporation / Other:Hunt Valley, MD	-	-		-		-		-	Continuing	Continuing	Continuing
Base: Common System Integration (UCGS, Trainers, OSRVT)	Various	AAI Corporation / Other Government Agency:Hunt Valley, MD	7.082	-		-		-		-	Continuing	Continuing	Continuing
Base: TUAS Heavy Fuel Engine	Various	AAI Corporation / Other:Hunt Valley, MD	-	-		-		-		-	Continuing	Continuing	Continuing
Base: LALHAV	Various	AAI Corporation / Other Government Agency:Hunt Valley, MD	2.000	-		-		-		-	Continuing	Continuing	Continuing
Base: Small Sense and Avoid System (SSAASy)	Various	AAI Corporation / Other Government	-	-		-		-		-	Continuing	Continuing	Continuing

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Agency:Hunt Valley, MD											
OCO: FY10 OCO Shadow Encryption	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
Base: Fourth Generation Wireless Exploitation	Various	AAI Corporation:Hunt Valley, MD	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	85.800	1.672		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various Contractors:Various	11.117	-		-		-		-	Continuing	Continuing	Continuing
Government Engineering and Logistics Support	Various	AMRDEC & IMMC:Various	8.008	-		-		-		-	Continuing	Continuing	Continuing
Government Engineering Support - Extended Range	Various	AMRDEC:Various	14.760	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	33.885	-		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Rolling Take Off	Various	Various Activities:Various	17.815	-		-		-		-	Continuing	Continuing	Continuing
Development Testing/ TCDL - Tactical Common Data Link	Various	Various Activities:Various	9.971	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	27.786	-		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
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	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	156.914	1.672		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
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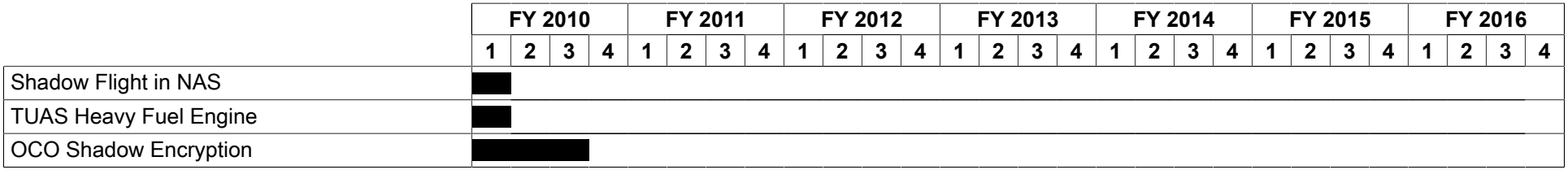

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Shadow Flight in NAS	1	2010	1	2010
TUAS Heavy Fuel Engine	1	2010	1	2010
OCO Shadow Encryption	1	2010	3	2010

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
11A: *Advanced Payload Develop & Spt (MIP)*	39.591	40.252	15.935	-	15.935	6.180	14.849	7.299	11.855	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This project supports the Army's transformation by developing payloads for brigade combat team, division, and corps Unmanned Aircraft Systems (UAS) and unmanned systems in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) UAV priorities.

The STARLite Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload will provide a wide-area search capability with a built-in imaging mode that provides essential all-weather surveillance and increased situational awareness. The STARLite payload is a principal payload for the Gray Eagle (Extended Range/Multi-Purpose - ER/MP) UAS.

The Electro Optical Infra Red w/Laser Designator (EO/IR/LD) Common Sensor Payload (CSP) is being developed and built at the direction of the Vice Chief of Staff of the Army for the Gray Eagle (ER/MP) UAS program and has potential application to other platforms. The CSP system will provide a day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the Army's Current and Future Force. This effort has been expanded to include High Definition (HD) Target Location Accuracy (TLA) capability.

The Tactical Signals Intelligence (SIGINT) Payload (TSP) is a SIGINT sensor, currently under development for the ER/MP UAS that detects radio frequency (RF) emitters. TSP, through handoff from the Combat Aviation Brigade, is capable of providing the Brigade Combat Team (BCT) Land Commander with an over watch and penetrating SIGINT system capable of detecting, identifying, locating, and providing Geolocation information on RF emitters throughout the Area of Operations. The TSP is scalable and modular, designed to provide maximum flexibility for the BCT mission profile. TSP will provide near real time actionable intelligence that can immediately be used in the commander's decision cycle. The TSP electronic emitter information will be correlated with data from other systems (e.g. Prophet and Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)), at a Distributed Common Ground Station-Army (DCGS-A) node to provide precise targeting information for immediate engagement. TSP maps and aligns with the 2009 Under Secretary of Defense for Intelligence Cross Cutting study and Force Sizing Assessment with Airborne Precision Geolocation and Tactical SIGINT capabilities. TSP also supports the 2009 Office of the Secretary of Defense Cross-Cutting Study: 6 Overarching Axioms for Information Warfare, Intelligence, Surveillance, and Reconnaissance (ISR) Force Sizing, VCJCS Update, 25 Apr 09, with SIGINT (Geolocation) and SIGINT (Internals). TSP sensors are critical to providing coverage ISR / Reconnaissance Surveillance, and Target Acquisition (RSTA) information and contributing to the Joint ISR net. TSP EMD program will be funded through 11B (0305204A) TSP development in FY12 and beyond.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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FY12 Base development dollars in the amount of $16 million continues to support Non Recurring Engineering (NRE), design, build integration and testing for the CSP High Definition Target Location Accuracy (HD/TLA) upgrade ($14.3 million) and final platform integration funding for STARLite ($1.7 million).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Tactical Signals Intelligence (SIGINT) Payload ***Articles:*** ***Description:*** Tactical Signals Intelligence (SIGINT) Payload ***FY 2011 Plans:*** Tactical Signals Intelligence (SIGINT) Payload	-	11.000 0	-	-	-
Title: CSP High Definition Target Location Accuracy (HD/TLA) ***Articles:*** ***Description:*** CSP High Definition Target Location Accuracy (HD/TLA) - Non Recurring Engineering (NRE), design, build and test of 8 CSP HD/TLA integration and test assets. ***FY 2010 Accomplishments:*** Initial NRE and build of 8 CSP integration and test articles along with the procurement of long lead material required for the build process. ***FY 2011 Plans:*** Begin contractor qualification testing and commence aircraft and ground station integration. ***FY 2012 Base Plans:*** Complete contractor testing and Government DT testing on surrogate aircraft.	26.753 0	24.577 0	14.268	-	14.268
Title: STARLite (SAR/GMTI) ***Articles:*** ***Description:*** STARLite (SAR/GMTI) - Design, build and test of 3 integration and test systems with increased Range and reliability (Inc 1 - larger antenna and enhanced reliability) and Integration onto the host platform (Gray Eagle) ***FY 2010 Accomplishments:*** Design, build and test of 3 integration and test systems with increased Range and reliability (Inc 1 - larger antenna and enhanced reliability) ***FY 2011 Plans:***	12.838 0	4.675 0	1.667	-	1.667

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Finalize testing events and integration onto host platform (Gray Eagle)					
FY 2012 Base Plans: Final integration onto host platform (Gray Eagle)					
Accomplishments/Planned Programs Subtotals	39.591	40.252	15.935	-	15.935

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• A00020 - ACFT: *MQ-1 PAYLOAD - UAS*	72.908	100.413	134.366	10.800	145.166		169.984	221.618	192.816	Continuing	Continuing
• 0603774A 131: *Night Vision Systems Advanced Development*	8.000									0.000	8.000
• 0305204A 11B: *Tactical Unmanned Aerial Vehicle*	21.534	5.336	20.475		20.475		5.395	5.568	5.735	Continuing	Continuing

D. Acquisition Strategy

Common Sensor Payload (CSP) EO/IR/LD is a KPP requirement for the Gray Eagle UAS. The acquisition strategy for the CSP program was based on a full and open competition for the Army. It was briefed and approved at the Army Systems Acquisition Review Council (ASARC) in Dec 2006. A competitive contract was awarded in Nov 07 to Raytheon for the design, build, test and delivery of the Common Sensor Payload. A new requirement was acknowledged adding High Definition Target Location Accuracy (HD/TLA) capability to the CSP system. The approved acquisition strategy for this new requirement is a sole source task order through the competitively awarded Navy Basic Order Agreement (BOA) with Raytheon. In order to develop this new capability, two technologies needed to be matured - HD IR camera 2nd source Diode pump laser supplier. Once sufficiently matured, these technologies can be incorporated into the HD/TLA test assets and the block upgrade program can undergo testing and final integration (FY12). These two parallel baselines (CSP Standard Definition (SD) and CSP HD/TLA) will proceed until the HD/TLA upgrade has been fully tested and a Full Rate Production (FRP) decision can be made. If a FRP decision is approved for HD/TLA, annual system procurement will commence (FY13) and the CSP (SD) system will be replaced by the CSP HD/TLA. In addition to the annual CSP HD/TLA system procurement, an additional 12 CSP HD/TLA systems will be procured each year until all CSP (SD) systems have been replaced. The Gray Eagle UAS Independent Operational Test and Evaluation (IOT&E) event with the CSP (SD) system is planned for 4th Qtr FY11.

STARLite SAR/GMTI is a threshold requirement for the Gray Eagle UAS. The acquisition strategy for STARLite is for five years of production which was based on a full and open competition for the Army. A competitive contract was awarded in April 2008 to Northrop Grumman for the build, test and deliver STARLite systems with the option for improvements (Increment 1 - Increased Range and Reliability) as well as integration and test onto the Gray Eagle platform. The contract option to increase Range and Reliability has been exercised. STARLite plans to support the Gray Eagle UAS Follow-on Operational Test and Evaluation (FOT&E) event planned for 2nd

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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Qtr FY12. The final increment of installation funding slipped to FY12 due to delays with the software development. No impact to the STARLite program as it still planns to support the Gray Eagle FOT&E.

TSP is a Threshold requirement for the MQ-1C Gray Eagle UAS. The TSP Program will be based on full-and-open competition at each Acquisition phase (EMD, LRIP, and FRP) and will be focused on starting with a mature TRL 6+ sensor for integration and test onto the Gray Eagel platform and integration and test of TSP software into the Distributed Common Ground Station-Army (DCGS-A) workstation. The TSP Initial Operational Test and Evaluation is planned for 4QFY14. Non-Recurring Engineering (NRE) will occur in both the EMD and LRIP phases to meet the full set of threshold SIGINT requirements and complete integration and test. Solicitation for the EMD program shifted to FY11 due to requirements definition activities at Army Staff level. Early developmental TSP prototypes are currently fielded in support of SOCOM and INSCOM in manned aircraft in theater. TSP EMD program will be funded through 11B (0305204A) TSP development in FY12 and beyond.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305204A: *Tactical Unmanned Aerial Vehicles*	PROJECT 11A: *Advanced Payload Develop & Spt (MIP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt Personnel	Various	PM RUS:Fort Mommouth, NJ - Aberdeen, MD	15.159	3.583		0.871		-		0.871	Continuing	Continuing	Continuing
TSP Program Management	SS/FP	PM, Aerial Common Sensors:Fort Monmouth, NJ	-	0.373		-		-		-	Continuing	Continuing	Continuing
TSP Matrix Support	SS/FP	CERDEC:Fort Monmouth, NJ	-	0.654		-		-		-	Continuing	Continuing	Continuing
		Subtotal	15.159	4.610		0.871		-		0.871			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CSP (EO/IR/LD) NRE, test & retrofit	C/IDIQ	Raytheon:McKinney, TX	42.118	-		-		-		-	Continuing	Continuing	Continuing
CSP (EO/IR/LD) HD/TLA Upgrade NRE, Build and Test	C/BOA	Raytheon:McKinney, TX	-	9.441		4.223		-		4.223	Continuing	Continuing	Continuing
STARLite (SAR/GMTI) Increment 1 Enhancement (Range and Reliability Improvements)	C/CPFF	Northrop Grumman:Linthicum, MD	2.923	3.668		-		-		-	Continuing	Continuing	Continuing
TSP Training Development	TBD	TBD:TBD	-	0.126		-		-		-	Continuing	Continuing	Continuing
TSP Other Licensing and Equipment	TBD	TBD:TBD	-	0.381		-		-		-	Continuing	Continuing	Continuing
		Subtotal	45.041	13.616		4.223		-		4.223			

Remarks

CSP EO/IR includes $12.593 million of ARH funding. Contract was terminated and available funds were returned.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Gray Eagle Integration Support (STARLite and CSP)	MIPR	PM UAS/General Atomics:Huntsville, AL	5.744	8.286		4.191		-		4.191	Continuing	Continuing	Continuing
Contractor Support	C/IDIQ	Raytheon:McKinney, TX	0.684	-		1.582		-		1.582	Continuing	Continuing	0.000
TSP Engineering Support	SS/FP	Various:Various	0.609	1.908		-		-		-	Continuing	Continuing	Continuing
		Subtotal	7.037	10.194		5.773		-		5.773			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CSP (EO/IR/LD) Testing	C/IDIQ	Various:McKinney, TX	9.171	-		-		-		-	Continuing	Continuing	Continuing
STARLite (SAR/GMTI) Increment 1 & 2 Testing	C/CPFF	Various:Linthicum, MD	-	2.359		-		-		-	Continuing	Continuing	Continuing
CSP (EO/IR/LD) HD/TLA Testing	MIPR	Various:Various	-	1.915		5.068		-		5.068	Continuing	Continuing	Continuing
TSP Development Test and OT Prep	SS/FP	Various:Various	-	6.908		-		-		-	Continuing	Continuing	Continuing
TSP Continuous Evaluation	SS/FP	ATEC, FT:Belvior, Va	-	0.650		-		-		-	Continuing	Continuing	Continuing
		Subtotal	9.171	11.832		5.068		-		5.068			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	76.408	40.252		15.935		-		15.935			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
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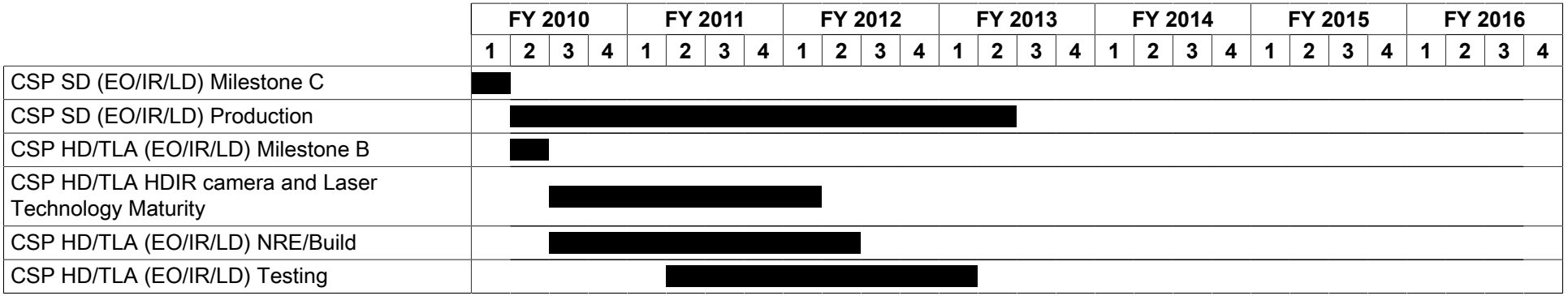

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305204A: *Tactical Unmanned Aerial Vehicles*	**PROJECT** 11A: *Advanced Payload Develop & Spt (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CSP SD (EO/IR/LD) Milestone C	1	2010	1	2010
CSP SD (EO/IR/LD) Production	2	2010	2	2013
CSP HD/TLA (EO/IR/LD) Milestone B	2	2010	2	2010
CSP HD/TLA HDIR camera and Laser Technology Maturity	3	2010	1	2012
CSP HD/TLA (EO/IR/LD) NRE/Build	3	2010	2	2012
CSP HD/TLA (EO/IR/LD) Testing	2	2011	1	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
11B: *TSP DEVELOPMENT (MIP)*	19.393	5.336	20.392	-	20.392	5.221	5.375	2.677	4.313	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Tactical Signals Intelligence (SIGINT) Payload (TSP) is an Unmanned Aircraft System (UAS) mounted SIGINT sensor that detects radio frequency (RF) emitters. TSP, through handoff from the Combat Aviation Brigade, is capable of providing the Tactical Land Commander with an overwatch and penetrating SIGINT system capable of detecting, identifying, locating, and providing geolocation information on RF emitters throughout the Area of Operations. The TSP is scalable and modular, designed to provide maximum flexibility. TSP will provide near real time actionable intelligence that can immediately be used in the commander's decision cycle. The TSP electronic emitter information will be correlated with data from other systems (e.g. Prophet and Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS), at a Distributed Common Ground System-Army (DCGS-A) node to provide precise targeting information for immediate engagement. TSP maps and aligns with the 2009 Under Secretary of Defense for Intelligence Cross Cutting study and Force Sizing Assessment with Airborne Precision Geolocation and Tactical SIGINT capabilities. The Tactical Signals Intelligence (SIGINT) Payload (TSP) is an Unmanned Aircraft System (UAS) mounted SIGINT sensor that detects radio frequency (RF) emitters. TSP, through handoff from the Combat Aviation Brigade, is
capable of providing the Tactical Land Commander with an overwatch and penetrating SIGINT system capable of detecting, identifying, locating, and providing geolocation information on RF emitters throughout the Area of
Operations. The TSP is scalable and modular, designed to provide maximum flexibility. TSP will provide near real time actionable intelligence that can immediately be used in the commander's decision cycle. The TSP electronic emitter information will be correlated with data from other systems (e.g. Prophet and Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS), at a Distributed Common Ground System-Army (DCGS-A) node to provide precise targeting information for immediate engagement. TSP maps and aligns with the 2009 Under Secretary of Defense for Intelligence Cross Cutting study and Force Sizing Assessment with Airborne Precision Geolocation and Tactical SIGINT capabilities. TSP also supports the 2009 Office of the Secretary of Defense Cross-Cutting Study: Six Overarching Axioms for Information Warfare, Intelligence, Surveillance,and Reconnaissance (ISR) Force Sizing, VCJCS Update, 25 Apr 09, with SIGINT (Geolocation) and SIGINT (Internals). TSP sensors are critical to providing Reconnaissance, Surveillance, and Target Acquisition (RSTA) information and contributing to the Joint ISR net.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: EMD NRE, Training Development, Other Licensing and Equipment	19.393	5.336	12.013	-	12.013
Articles:	0	0			
Description: EMD NRE, Training Development, Other Licensing and Equipment					
FY 2010 Accomplishments: EMD NRE, Training Development, Other Licensing and Equipment					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued EMD NRE, Training Development, Other Licensing and Equipment ***FY 2012 Base Plans:*** Continued EMD NRE(2), Training Development, Other Licensing and Equipment					
Title: TSP Development Test and OT Prep ***Description:*** TSP Test Program ***FY 2012 Base Plans:*** FY12 Development Test Program	-	-	8.379	-	8.379
Accomplishments/Planned Programs Subtotals	19.393	5.336	20.392	-	20.392

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• NSA MIP (TSP): *NSA MIP (TSP)*	0.657	1.171					6.795	6.795		0.000	24.087
• A00020 Payload UAV: *A00020 Payload UAV*	14.832	20.000	28.966		28.966		67.318	66.772	51.200	0.000	311.736
• 0305204A 11A Tactical SIGINT Payloa: *0305204A 11A Tactical SIGINT Payload*		11.000								0.000	11.000

D. Acquisition Strategy

TSP is a Threshold requirement for the MQ-1C Gray Eagle UAS. The TSP Program will be based on a full and open competitive solicitation and will be focused on starting with a mature TRL 6+ sensor for integration and test
into the Distributed Common Ground Station-Army (DCGS-A) workstation. The TSP system will be integrated onto the Gray Eagle platform to reach an Initial Operational Test and Evaluation. Non-Recurring Engineering (NRE)
will occur in an EMD phase to meet the full set of threshold SIGINT requirements and complete integration and test. Following EMD, a Milestone C production decision will be sought to procure, build and deliver TSP
systems in support of the Gray Eagle platform. Solicitation for the EMD program shifted to FY11 due to requirements definition activities at Army Staff level. TSP prototypes are currently fielded in support of SOCOM and INSCOM
in manned aircraft in theater.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305204A: *Tactical Unmanned Aerial Vehicles*	PROJECT 11B: *TSP DEVELOPMENT (MIP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	SS/FP	PM, Aerial Common Sensors, Fort Monmouth, NJ:TBD	2.092	-		1.164		-		1.164	Continuing	Continuing	Continuing
Matrix Support	Various	CERDEC, Fort Monmouth, NJ:TBD	2.125	-		0.725		-		0.725	Continuing	Continuing	Continuing
Contract Mods	SS/FP	TBD:TBD	-	-		2.064		-		2.064	0.000	2.064	0.000
		Subtotal	4.217	-		3.953		-		3.953			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TSP EMD NRE	C/CPIF	TBD:TBD	-	-		0.856		-		0.856	Continuing	Continuing	Continuing
TSP EMD Manufacturing	C/CPIF	TBD:TBD	-	5.336		1.718		-		1.718	0.000	7.054	0.000
Training Development	Various	TBD:TBD	-	-		-		-		-	Continuing	Continuing	Continuing
Program Recision	Various	TBD:TBD	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	5.336		2.574		-		2.574			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	SS/CPIF	Mitre:TBD	1.573	-		5.061		-		5.061	Continuing	Continuing	Continuing
Engineering Support	Various	Various:TBD	0.440	-		0.425		-		0.425	Continuing	Continuing	Continuing
		Subtotal	2.013	-		5.486		-		5.486			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Activities	C/CPIF	Various:TBD	4.139	-		8.379		-		8.379	Continuing	Continuing	Continuing
Continuous Evaluation	C/FP	ATEC, Ft Belvoir, VA:TBD	0.500	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	4.639	-		8.379		-		8.379			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.869	5.336		20.392		-		20.392			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305204A: *Tactical Unmanned Aerial Vehicles*	PROJECT 11B: *TSP DEVELOPMENT (MIP)*

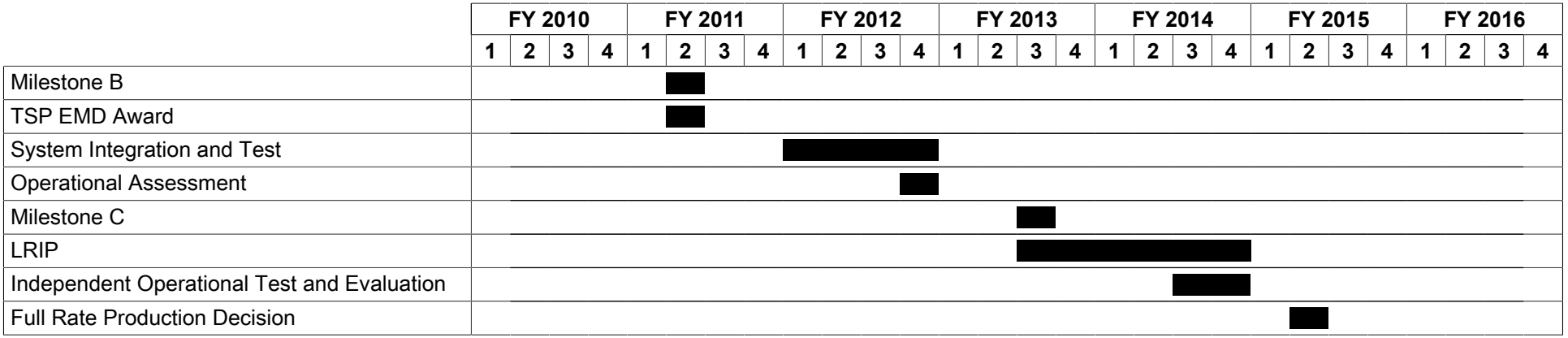

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305204A: *Tactical Unmanned Aerial Vehicles*	**PROJECT** 11B: *TSP DEVELOPMENT (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone B	2	2011	2	2011
TSP EMD Award	2	2011	2	2011
System Integration and Test	1	2012	4	2012
Operational Assessment	4	2012	4	2012
Milestone C	3	2013	3	2013
LRIP	3	2013	4	2014
Independent Operational Test and Evaluation	3	2014	4	2014
Full Rate Production Decision	2	2015	2	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305204A: *Tactical Unmanned Aerial Vehicles*	PROJECT 123: *JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
123: *JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)*	4.389	6.698	4.323	-	4.323	4.280	4.196	2.043	3.252	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Joint Technology Center/System Integration Laboratory (JTC/SIL) is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development, the UAS Institutional Mission Simulator (IMS) trainer for the Shadow, Hunter, and ERMP programs, and modeling and simulation support. The MUSE is a real-time, operator in-the-loop simulation that may be integrated with larger simulations in support of Army and Joint training and exercises. The MUSE is also employed as a Mission Rehearsal Tool for ongoing combat operations. This project funds the management of the JTC/SIL and MUSE enhancements.

This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Base: Product Development	1.868	3.902	3.807	-	3.807
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2010 Accomplishments: Base: Product Development					
FY 2011 Plans: Base: Product Development					
FY 2012 Base Plans: Base: Product Development					
Title: Support cost in support of OSD Joint Interoperability Requirements	2.000	2.000	-	-	-
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305204A: *Tactical Unmanned Aerial Vehicles*	PROJECT 123: *JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Support cost in support of OSD Joint Interoperability Requirements ***FY 2011 Plans:*** Support cost in support of OSD Joint Interoperability Requirements					
Title: Base: Management Services	0.521	0.796	0.516	-	0.516
Articles:	0	0			
Description: Funding is provided for the following effort ***FY 2010 Accomplishments:*** Base: Management Services ***FY 2011 Plans:*** Base: Management Services ***FY 2012 Base Plans:*** Base: Management Services					
Accomplishments/Planned Programs Subtotals	4.389	6.698	4.323	-	4.323

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0603261N Navy: *PE 0305204N Navy*	3.703		3.573		3.573		3.629	3.667	1.689	0.000	19.861
• PE 0305206F Air Force: *PE 0305205F Air Force*	3.470	4.000	3.235		3.235		3.472	3.373	3.387	Continuing	Continuing

D. Acquisition Strategy

Continued MUSE development will be accomplished through a combination of Government in-house functional directorate support using a variety of existing contract vehicles.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305204A: *Tactical Unmanned Aerial Vehicles*	PROJECT 123: *JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	AMC/AMCOM/ AMRDEC/SED:AMC/ AMCOM/ AMRDEC/ SED	22.851	0.796		0.516		-		0.516	Continuing	Continuing	Continuing
		Subtotal	22.851	0.796		0.516		-		0.516			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MUSE Development	MIPR	AMC/AMCOM/ AMRDEC/SED:AMC/ AMCOM/AMRDEC/ SED	22.851	3.902		1.807		-		1.807	Continuing	Continuing	Continuing
		Subtotal	22.851	3.902		1.807		-		1.807			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Interoperability Support	MIPR	AMC/RDECOM/ AMRDEC:AMC/ RDECOM/ AMRDEC	2.000	2.000		2.000		-		2.000	Continuing	Continuing	Continuing
		Subtotal	2.000	2.000		2.000		-		2.000			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	47.702	6.698		4.323		-		4.323			

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
D09: *EXTENDED RANGE UAV (MIP)*	135.136	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The production Extended Range Multi-Purpose (ERMP) Unmanned Aircraft system (UAS) will consist of 12 Unmanned Aircraft Systems, each equipped with multi-mission payloads and a Standard Equipment Package (SEP). The threshold payload is an EO/IR/LD sensor. The SEP includes a communications relay package, Identify Friend or Foe (IFF) equipment and Air Traffic Control radios. Associated Ground Support Equipment (GSE) will have One System Ground Control Stations (OSGCS-V2 & V3), Tactical Common Data Links (TCDL) Ground Data Terminals (GDT), Portable GCS(PGCS), Portable GDT (PGDT), and Satellite Communication (SATCOM) Ground Data Terminal. Each system will also have the Automatic Take off and Landing System (ATLS), Tactical Automatic Landing System-Tracking Subsystems (TALS-TS). Each aircraft will have the connectivity, plus space, weight and power to support SATCOM and payloads; and each aircraft will be weaponized.

RDT&E funds continue to resource the Engineering Manufacturing and Development (EMD) phase for ERMP, as well as continuing improvements after EMD. FY12 funding will provide for continued system development and integration, developmental test, and Initial Operational Test and Evaluation (IOT&E).

Beginning in FY11, ERMP RDT&E funding shifts to PE 0305219A to comply with Section 214 of the FY09 National Defense Authorization Act to submit the ERMP budget in a dedicated Program Element.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: ERMP EMD System including Electro-Optical / Infrared, Synthetic Aperture Radar, and communications Relay Payloads ***Articles:*** ***Description:*** ERMP EMD System including Electro-Optical / Infrared, Synthetic Aperture Radar, and communications Relay Payloads ***FY 2010 Accomplishments:*** ERMP EMD System including Electro-Optical / Infrared, Synthetic Aperture Radar, and communications Relay Payloads	41.578 0	-	-	-	-
Title: Government Test Support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO)	53.287 0	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles: ***Description:*** Government Test Support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO) ***FY 2010 Accomplishments:*** Government Test Support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO)					
Title: ERMP System Training and Training Equipment Development ***Articles:*** ***Description:*** ERMP System Training and Training Equipment Development ***FY 2010 Accomplishments:*** ERMP System Training and Training Equipment Development	32.798 0	-	-	-	-
Title: ERMP Support including Engineering and Program Management ***Articles:*** ***Description:*** ERMP Support including Engineering and Program Management ***FY 2010 Accomplishments:*** ERMP Support including Engineering and Program Management	7.473 0	-	-	-	-
Accomplishments/Planned Programs Subtotals	135.136	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• (A00005): *MQ-1 UAV - APA - Base and OCO*	439.650	506.310	658.798		658.798		500.334	0.054		0.000	2,781.903
• (A00025): *MQ-1 UAV - APA*	3.786	14.729								0.000	18.515

D. Acquisition Strategy

The ERMP Operational Requirement Document (ORD) was approved by the Joint Requirement Oversight Council (JROC) 6 Apr 2005, Milestone B occurred 20 Apr 2005, and the System Development and Demonstration contract was awarded 8 Aug 2005, as a result of a competitive solicitation which included a vendor system capabilities demonstration. Capabilities Production Document was approved 14 Mar 09. To meet the required capability, evolutionary acquisition has been employed

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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to implement the incremental approach outlined in the CPD. The ERMP UAS is being matured during the System Development and Demonstration (SDD) phase, which includes the development and integration of key components such as the Tactical Common Data Link (TCDL), Link-16, and integration of Government Furnished Equipment (GFE), payloads, appropriate Common Aviation Ground Support Equipment and the One System GCS. PM JAMS is developing the P+ model of the HELLFIRE missile and participating in the integration and test activities for the entire ERMP system. PM JAMS is budgeting for the procurement of missiles for the fielded systems. PM Night Vision/Reconnaissance, Surveillance, and Target Acquisition (RSTA) under PEO Intelligence and Electronic Warfare Systems (IEWS) develops, manages, and competes in the POM and is responsible for meeting all ERMP costs associated for payloads, payload integration, and payload sustainment. The US Army's Acquisition Objective for ERMP is 35 systems. The Army procurement Objective for ERMP is 13 systems. Field Tests at the Electronic Proving Grounds in Ft Huachuca, AZ, and integration tests at the Central Technical Support Facility in Ft Hood, TX, are examples of the tests planned to reduce risk in the SDD phase. The LRIP will:

a. Establish an effective and efficient production base for the system required to provide a solid foundation on which to build FRP systems.
b. Permit an orderly increase in production rate to mitigate risk.
c. Procure production representative equipment to support test & evaluation.
d. Support Doctrine, Training, Leadership Development, Organization, Materiel, Personnel and Facilities (DTLOMPF) and Tactics, Techniques and Procedures (TTP) development.
e. Provide an opportunity to incorporate lessons learned from the comprehensive test and evaluation program into the production baseline.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel	MIPR	PM UAS, Redstone:PM UAS, Redstone	7.511	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	7.511	-		-		-		-			

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Engineering & Prototype Manufacturing	Various	General Atomics/ ASI:General Atomics/ ASI	338.894	-		-		-		-	Continuing	Continuing	Continuing
Common System Integration	Various	Various:Various	3.663	-		-		-		-	0.000	3.663	Continuing
Government Furnished Equipment	Various	Various:Various	4.625	-		-		-		-	Continuing	Continuing	Continuing
Launcher Software Development	Various	PM JAMS:Various	1.000	-		-		-		-	0.000	1.000	Continuing
Aviation Mission Planning Systems	Various	Other Government Agencies:Various	1.615	-		-		-		-	0.000	1.615	Continuing
Next Generation Ice Protection	Various	AMRDEC:Various	1.920	-		-		-		-	0.000	1.920	Continuing
		Subtotal	351.717	-		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/FFP	Various Contractors:Various Contractors	9.084	-		-		-		-	Continuing	Continuing	Continuing
Government Engineering Support	MIPR		15.487	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		AMRDEC and IMMC:AMRDEC and IMMC											
ERMP System Training and Training Equipment Development	MIPR	Ft Huachuca:Ft Huachuaca	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	24.571	-		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Test and Evaluation	MIPR	Various Government Agencies:Various Government Agencies	5.850	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	5.850	-		-		-		-			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	389.649	-		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
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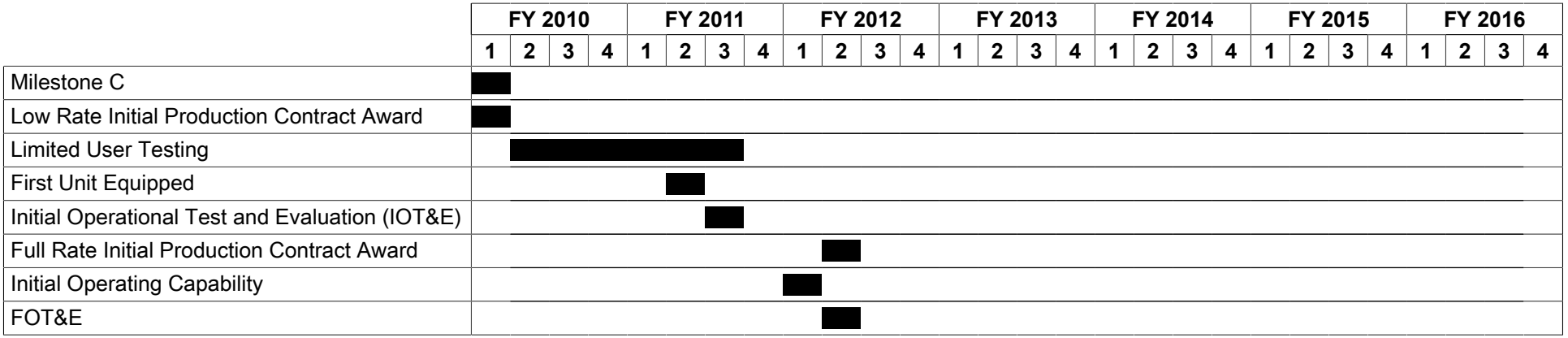

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone C	1	2010	1	2010
Low Rate Initial Production Contract Award	1	2010	1	2010
Limited User Testing	2	2010	3	2011
First Unit Equipped	2	2011	2	2011
Initial Operational Test and Evaluation (IOT&E)	3	2011	3	2011
Full Rate Initial Production Contract Award	2	2012	2	2012
Initial Operating Capability	1	2012	1	2012
FOT&E	2	2012	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
D10: *SUAV (MIP)*	1.958	0.342	-	-	-	-	-	-	-	0.000	2.300
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Small Unmanned Aircraft System (SUAS), RQ-11B Raven provides ground maneuver battalions and below with situational awareness and enhanced force protection. The Raven B is a man-portable, unmanned aircraft system capable of handling a wide variety of Intelligence, Surveillance & Reconnaissance (ISR) tasks. The Raven B aircraft has a wingspan of 4.5 feet and weighs 4.2 pounds. It is hand-launched and provides aerial observation, day or night, at line-of-sight ranges up to 10 kilometers. The aircraft has an endurance rate of 90 minutes and can deliver color or infrared imagery in real time to the ground control station and remote video terminal. Raven B obtained Milestone C approval on 6 Oct 05, and successfully completed IOT&E June 06. The program obtained Full Rate Production approval 5 Oct 06. A significant system upgrade completed in early FY10 incorporated a Digital Data Link (DDL) which improved operational capability by: incorporating encryption capability allowing for secure data links; increasing the number of channels allowing for more air vehicles to be flown in a smaller area; extending the operational range through communication relay capability; and integration of advanced digital payloads. The first DDL systems were fielded in December 2009.

Funding for this project shifts to PE 0305232A RQ-11 in FY11.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Product Improvement Studies and Development	1.419	-	-	-	-
Articles:	0				
Description: Product Improvement Studies and Development					
FY 2010 Accomplishments: Product Improvement Studies and Development					
Title: Program Management Support	0.381	0.342	-	-	-
Articles:	0	0			
Description: Program Management Support					
FY 2010 Accomplishments: Program Management Support					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Program Management Support					
Title: Other Government Agencies (OGA)	0.158	-	-	-	-
Articles:	0				
Description: Other Government Agencies (OGA)					
FY 2010 Accomplishments: Other Government Agencies (OGA)					
Accomplishments/Planned Programs Subtotals	1.958	0.342	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0305232A RQ-11: *Raven (MIP) (RDT&E,A)*		1.941	1.938		1.938		2.884	2.943	2.990	0.000	14.625
• (A00010): *RQ-11 (RAVEN)/APA*	84.340	37.572	70.762		70.762		9.562	10.933	10.867	0.000	248.035

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	RO	PM UAS:PM UAS	0.675	0.342		-		-		-	Continuing	Continuing	0.000
		Subtotal	0.675	0.342		-		-		-			0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Improvement Studies and Development	Various	AeroVironment:AeroVironment	13.281	-		-		-		-	Continuing	Continuing	0.000
Shadow Flight in the National Airspace	Various	AAI Corporation / Other:AAI Corporation / Other	2.000	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	15.281	-		-		-		-			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies (OGA)	RO	PM UAS:PM UAS	0.675	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	0.675	-		-		-		-			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies (OGA)	RO	PM UAS:PM UAS	0.675	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	0.675	-		-		-		-			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
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	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.306	0.342		-		-		-			0.000

Remarks