Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Army											Date: March 2014	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604741A *I Air Defense Command, Control and Intelligence - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	42.876	18.284	15.906	-	15.906	20.248	19.632	19.878	20.165	Continuing	Continuing
126: *FAAD C2 ED*	-	3.413	3.406	-	-	-	-	-	-	-	-	6.819
146: *Air & Msl Defense Planning Control Sys*	-	13.875	13.303	13.539	-	13.539	15.871	16.082	16.227	16.408	Continuing	Continuing
149: *Counter-Rockets, Artillery & Mortar*	-	25.588	1.575	2.367	-	2.367	4.377	3.550	3.651	3.757	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

Note

FY13 RDTE reflects a Congressional adjustment in the amount of -$24.925 million for the termination of the C-RAM Interceptor Enhancements effort in addition to an adjustment of -$5.532 million for higher HQDA priorities.

FY15 Base RDTE reflects an adjustment in the amount of -$4.992 million for higher HQDA priorities.

A. Mission Description and Budget Item Justification

The Forward Area Air Defense Command and Control (FAAD C2) system collects, digitally processes, and disseminates real-time target cuing and tracking information; the common tactical 3-dimentional air picture; and command, control, and intelligence information to all Air and Missile Defense (AMD) weapon systems (Avenger and Man-Portable Air Defense System (MANPADS)), and joint and combined arms systems. The FAAD C2 system provides alerting data to air defense gunners, airspace battle management, and up-linking of mission operations. Situational awareness and targeting data is provided on threat aircraft, cruise missiles, and unmanned aerial systems (UAS). FAAD C2 software is a key component of the Air Defense and Airspace Management (ADAM) Cell that is being fielded to Brigade Combat Teams (BCT), Multi-Functional Support Brigades and Division Headquarters as part of the Army's modularity concept. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated Army National Guard AMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of AMD operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and ADAM Cells at the Brigade Combat Teams (BCTs), Multi Functional Support Brigades and Divisions/Corps. AMDPCS systems also provide air defense capabilities to Homeland Defense systems. The fielding of ADAM Cells is essential in fulfilling the Army's Modularity requirement. ADAM Cells provide the Commander at BCTs, Brigades and Divisions with air defense situational awareness and airspace management capabilities. They also provide the interoperability link with Joint, multinational and coalition forces. AMDPCS components are vital in the transformation of ADA units and the activation of the AMD Battalions and AMD Composite Battalions. AMDPCS has three major components: (1) Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational 3-dimentional air picture; (2) Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time, 3-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Army	Date: March 2014
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604741A *I Air Defense Command, Control and Intelligence - Eng Dev*

dimensional, joint airspace situational awareness and fire direction command and control for AMD forces; (3) Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

Counter-Rocket, Artillery, Mortar (C-RAM) is an evolutionary, non-developmental program initiated by the Army Chief of Staff in response to the indirect fire (IDF) threat and a validated Operational Needs Statement (ONS). The primary mission of the C-RAM program is to develop, procure, field, and maintain a system-of-systems (SoS) that can detect RAM launches; provide localized warning to the defended area, with sufficient time for personnel to take appropriate action; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM capability is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems, warning systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System (LPWS)), with a commercial off-the-shelf (COTS) wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in Afghanistan, providing correlated air and ground pictures, linking units to the Army Mission Command and the Joint Defense Network, and using various forms of communications to provide situational awareness and exchange of timely and accurate information in order to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond, and Protect decisions.

Multiple acquisition efforts are associated with the C-RAM program, including C-RAM Intercept, which fields existing LPWS guns to two Indirect Fire Protection Capability (IFPC)/Avenger composite Battalions, and RAM Warn, a horizontal technology insertion, using current C-RAM warning equipment to provide early, localized warning to all Maneuver Brigade Combat Teams (BCT). Prior year C-RAM RDTE funding was shared to conduct RAM Warn test activities in support of the Milestone C decision.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	73.333	18.294	20.898	-	20.898
Current President's Budget	42.876	18.284	15.906	-	15.906
Total Adjustments	-30.457	-0.010	-4.992	-	-4.992
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-30.457	-0.010	-4.992	-	-4.992

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	Project (Number/Name) 126 / *FAAD C2 ED*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
126: *FAAD C2 ED*	-	3.413	3.406	-	-	-	-	-	-	-	-	6.819
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Forward Area Air Defense Command and Control (FAAD C2) system collects, digitally processes, and disseminates real-time target cuing and tracking information. FAAD C2 provides the common tactical 3-dimensional air picture and command, control, and intelligence information to all Air and Missile Defense (AMD) weapon systems (Avenger and Man-Portable Air Defense System (MANPADS)), and joint and combined arms systems. The FAAD C2 system provides alerting data to air defense gunners, airspace battle management, and up-linking of mission operations, thereby enhancing force protection against air and missile attack. Situational awareness and targeting data is provided on threat aircraft, cruise missiles, and unmanned aerial systems (UAS). The FAAD C2 system provides this mission capability by integrating dynamic FAAD C2 engagement operations software with the Multifunctional Information Distribution System (MIDS), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location and Reporting System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control Systems (AWACS), Sentinel radar, and the Common Operating Environment (COE) architecture. In addition, FAAD C2 provides interoperability with Joint C2 systems and horizontal integration with PATRIOT and Theater High-Altitude Area Defense (THAAD) by fusing sensor data to create a scalable and filterable Single Integrated Air Picture (SIAP) and common tactical picture. The system software is a key component of the Air Defense and Airspace Management (ADAM) Cell that is being fielded to Brigade Combat Teams (BCTs), Multi-Functional Support Brigades and Divisions/Corps as part of the Army's modularity concept. System software is able to provide target data and engagement commands/status to AMD Battalions. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated ARNG (Army National Guard) AMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

Program funding provides a method to rapidly keep pace with leading edge technologies and maintain interoperability and backwards compatibility caused by improvement to other system components (upgrade from common hardware version 3 to 4 and EPLRS enhancements).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: FAAD C2 Software Development	3.413	3.406	-
Articles:	-	-	-
Description: Support FAAD C2 software development including unique software enhancements in support of Homeland Defense (HLD), software solutions for Host-Based Software Security (HBSS) and Common Operating Environment (COE) mandates, and security accreditation updates. Integrate Improved Sentinel radar. Incorporate IFF modes 1, 2, 3 (active decode), 5/S capabilities, and self-reporting systems.			
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 126 / *FAAD C2 ED*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Continued FAAD C2 software development including unique software enhancements in support of Homeland Defense. Supported FAAD C2 software development including: 3-D Common Warfighter Machine Interface (CWMI), IBCS Virtualization Development/ Environment and Enhance ABM Simulation. Continued to support implementation of HBSS and IPv6 address scheme. Continued to implement evolving COE requirements for real time systems. Continued security accreditation updates. ***FY 2014 Plans:*** Complete FAAD C2 software requirements for short range air defense capabilities in support of Homeland Defense. Supporting FAAD C2 software development including: Avenger Upgrades for HLD, CWMI 2D/3D Man Machine Interface Enhancements, Enhance the Battlefield Geometries passing between AMDWS & FAAD C2. Continue to support software on Advanced Battle Management and enhanced capability for Digital Clearance of Fires. Continue to implement evolving COE requirements for real time systems. Continue security accreditation updates.			
Accomplishments/Planned Programs Subtotals	3.413	3.406	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• SSN AD5050: *SSN AD5050, FAAD C2*	5.024	4.607	-	-	-	-	-	-	-	-	9.631
• PE 0604741A, Proj 149: *PE 0604741A, Proj 149, Counter-Rockets, Artillery & Mortar*	25.588	1.575	2.367	-	2.367	4.377	3.550	3.651	3.757	Continuing	Continuing
• SSN H30503: *SSN H30503, Rocket, Artillery, Mortar (RAM) Warn (Parent is IFPC Family of Systems: BZ0501)*	27.345	11.929	27.652	-	27.652	43.061	29.061	-	-	-	139.048
• SSN H30504: *SSN H30504, C-RAM Enhancements (Parent is IFPC Family of Systems: BZ0501)*	-	43.425	40.644	-	40.644	18.122	16.182	-	-	-	118.373
• PE 0604741A, Proj 146: *PE 0604741A, Proj 146, Air & Missile Defense Planning and Control System*	13.875	13.303	13.539	-	13.539	15.871	16.082	16.227	16.408	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 126 / *FAAD C2 ED*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• SSN AD5070: *SSN AD5070, Air & Missile Defense Planning and Control System*	53.059	13.090	27.374	-	27.374	28.410	32.727	32.980	33.325	Continuing	Continuing
• PE 0604319A, Proj DU3: *PE 0604319A, Proj DU3, IFPC (FY12 PE0603305A IFPC II - Intercept)*	25.710	79.190	96.177	-	96.177	156.523	90.980	58.214	27.663	Continuing	Continuing
• PE 0605457A, Proj S40: *PE 0605457A, Proj S40, Army Integrated Air and Missile Defense (AIAMD)*	233.892	369.452	142.584	-	142.584	215.659	228.791	170.828	154.565	Continuing	Continuing
• SSN BZ5075: *SSN BZ5075, IAMD Battle Command System*	-	-	-	-	-	21.091	206.300	298.990	379.981	Continuing	Continuing
• PE 060482A, Proj E10: *PE 060482A, Proj E10, Sentinel*	3.734	1.548	5.224	-	5.224	12.213	11.389	10.906	12.132	Continuing	Continuing

Remarks

The above listed programs are interrelated with FAAD C2 efforts, but they may or may not provide funding for the efforts covered in this report.

D. Acquisition Strategy

The FAAD C2 acquisition strategy relies on evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies. The concept of evolutionary software development was followed in Blocks I-IV fieldings. FAAD C2 software provides engagement operational capabilities for the Army's Active and Reserve components.

FAAD C2 is a core component of C-RAM C2. As C-RAM C2 is developed, the interoperability of Air Defense functionality of FAAD C2 must be maintained.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Army			Date: March 2014
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	40.451	0.272	Dec 2012	0.271	Dec 2013	-		-		-	-	40.994	-
		Subtotal	40.451	0.272		0.271		-		-		-	-	40.994	-

Remarks

Basic Air Defense functionality will be maintained under Counter-Rockets, Artillery & Mortar (C-RAM) Development.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Engineering	SS/CPIF	Northrop Grumman : Carson, CA	37.899	2.378	Feb 2013	2.374	Feb 2014	-		-		-	-	42.651	-
Software Engineering	Various	Various : Various	22.845	0.237	Dec 2012	0.236	Dec 2013	-		-		-	-	23.318	-
		Subtotal	60.744	2.615		2.610		-		-		-	-	65.969	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification/Testing	Various	YPG : Yuma, AZ	11.379	0.412	Feb 2013	0.411	Feb 2014	-		-		-	-	12.202	-
Interoperability	Various	CTSF : Ft Hood, TX	3.142	0.114	Dec 2012	0.114	Dec 2013	-		-		-	-	3.370	-
		Subtotal	14.521	0.526		0.525		-		-		-	-	15.572	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	115.716	3.413		3.406		-		-		-	-	122.535	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 126 / *FAAD C2 ED*

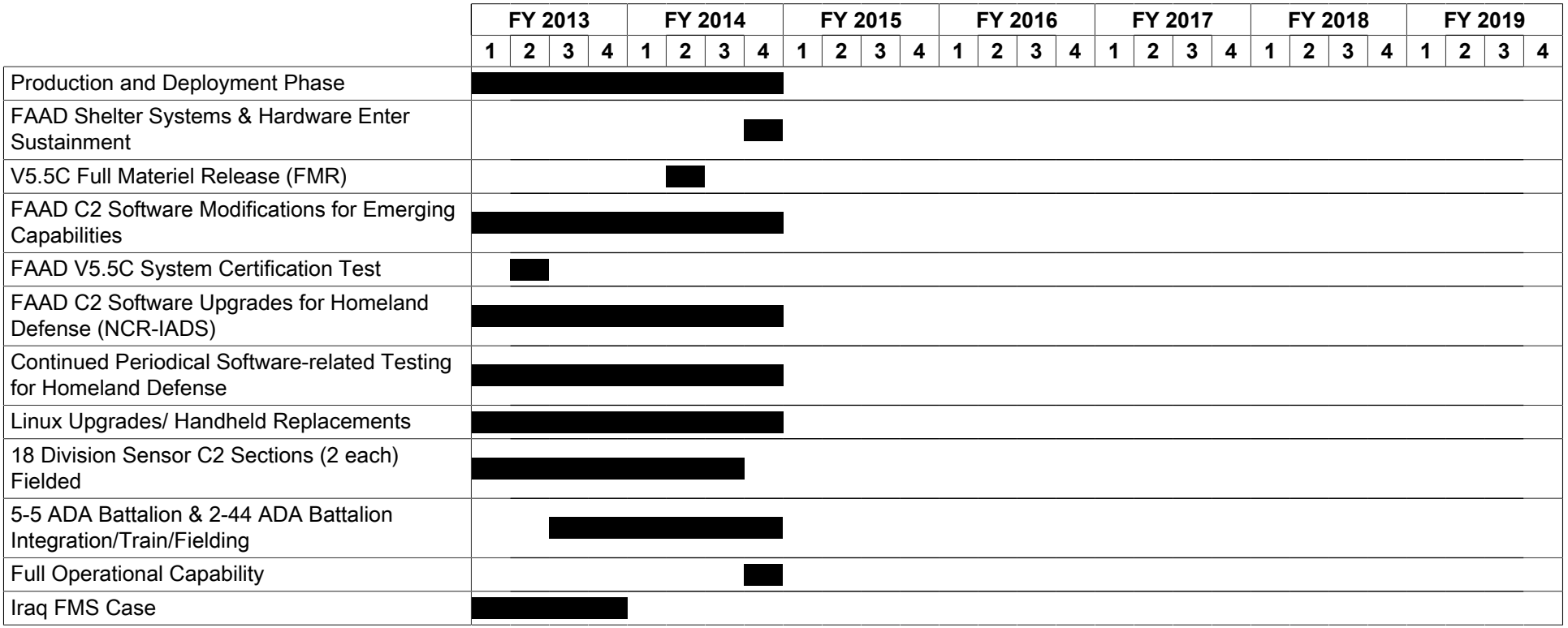

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 126 / *FAAD C2 ED*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Production and Deployment Phase	4	2001	4	2014
FAAD Shelter Systems & Hardware Enter Sustainment	4	2014	4	2014
V5.5C Full Materiel Release (FMR)	2	2014	2	2014
FAAD C2 Software Modifications for Emerging Capabilities	3	2006	4	2014
FAAD V5.5C System Certification Test	2	2013	2	2013
FAAD C2 Software Upgrades for Homeland Defense (NCR-IADS)	4	2007	4	2014
Continued Periodical Software-related Testing for Homeland Defense	4	2010	4	2014
Linux Upgrades/ Handheld Replacements	2	2010	4	2014
18 Division Sensor C2 Sections (2 each) Fielded	4	2009	3	2014
5-5 ADA Battalion & 2-44 ADA Battalion Integration/Train/Fielding	3	2013	4	2014
Full Operational Capability	4	2014	4	2014
Iraq FMS Case	1	2013	4	2013

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	Project (Number/Name) 146 / *Air & Msl Defense Planning Control Sys*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
146: *Air & Msl Defense Planning Control Sys*	-	13.875	13.303	13.539	-	13.539	15.871	16.082	16.227	16.408	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Multi Functional Support Brigades and Divisions/Corps. AMDPCS systems also provide air defense capabilities to Homeland Defense systems. ADAM Cells provide the Commander at BCTs, Brigades and Divisions with air defense situational awareness and airspace management capabilities. They also provide the interoperability link with Joint, multinational and coalition forces. AMDPCS components are vital in the transformation of ADA units and the activation of the Air & Missile Defense (AMD) Battalions. AMDPCS has three major components: (1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational 3-dimensional air picture. AMDWS is the air picture provider for the Army, producing an integrated and correlated air picture at all tactical levels and locations. AMDWS is also an integral component of Integrated Base Defense. AMDWS provides an interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement; (2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time, 3-dimensional, joint airspace situational awareness and fire direction command and control for Air and Missile Defense forces; (3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

FY15 funds the development, software engineering, testing and certification of the AMDWS, ADSI, and sheltered subsystem software as described below.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: AMDWS Software Development	10.684	10.234	10.425
Articles:	-	-	-
Description: Continue AMDWS development and support of LandWarNet as well as various Common Operating Environments (COEs). Complete AMDWS software engineering and development consistent with Capability Set requirements, evolving the air and missile defense planning and control requirements to a net-centric environment, and fulfilling the air defense force operations capabilities identified in the AMD TRADOC capabilities requirement list. Virtualize AMDWS software development and rehost onto IBCS common hardware systems. Continue integration of the PATRIOT Tactical Planner (PTP), Theater High Altitude Air Defense (THAAD) Tactical Planner, Theater Battle Management Core Systems (TBMCS), and Command, Control, Battle			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Management, and Communications (C2BMC) Planner. Support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) System of Systems. ***FY 2013 Accomplishments:*** Completed AMDWS software engineering and delivered software consistent with COEv1 (was Capability set 13-14) standards including greater net-centricity and Fires Community of Excellence (FCoE) requirements. Supported interconnectivity with PATRIOT PDB-7 production. Finalized and updated interfaces with C2BMC, THAAD and PATRIOT. Developed proof of concept software and hardware to demonstrate the viability of full integration of AMDWS and IBCS into the COE Real Time/Safety Critical/ Embedded Computing Environment (RTSCE CE) for the IAMD Demo in 1Q FY14. Developed track display enhancements and 3-dimentional model views/modeling and simulation. Completed migration to the 64 bit Windows 7 Operating System. Began design and development efforts for COE v2 in the RTSCE CE and Command Post Computing Environment (CP CE). ***FY 2014 Plans:*** Continue AMDWS software engineering consistent with COE v2 requirements. Implement evolving COE requirements for CP CE and RTSCE CE. Continue to evolve interfaces with IAMD systems. Support the IAMD/ADAM Demo. Continue development and testing of interfaces with C2BMC Planner, THAAD Planner, and Patriot. Finalize NATO interface improvement. Complete track display enhancements, 3 dimensional model views, and commercial aircraft de-confliction functions. Continue modeling and simulation functions. Evaluate AMDWS graphics and system performance for the next generation of hardware platforms. ***FY 2015 Plans:*** Deliver and test software consistent with COE v2. Start design and engineer software consistent with COE v3 requirements. Implement evolving COE requirements for CP CE and RTSCE CE. Continue to evolve AMDWS in to the RTSCE CE Engagement Operations (EO) Real Time Interoperability Framework (RTIF). Update interface to the TBMCS follow-on system (C2IS-C2AOS).			
Title: ADSI Software Engineering and Development	0.694	0.675	0.677
Articles:	-	-	-
Description: Continue ADSI software engineering and development in software versions 15, including testing and certification of capabilities for TacView Situational Awareness, with air control support, scenario generation and 3-dimensional capability, Radio Frequency (RF) Link 16, Joint Range Extension Application Protocol (JREAP) A/B/C, Sat-J, Integrated Broadcast Service (IBS), External Time Reference (ETR), Situational Awareness Datalink (SADL), Link 11B, FAAD Data Link (FDL) and Serial J. The version 15 software upgrades the ADSI OS to use Windows 7 and Red Hat Linux. ***FY 2013 Accomplishments:*** Continued ADSI software engineering and development in software version 15. Conducted certification activities of version 15 software, including obtaining Authority to Operate (ATO) and Army Interoperability Certification (AIC). Continued development/			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
refinement of software in response to anomalies discovered during testing. Implemented updates and refinement in accordance with MIL-STD updates. ***FY 2014 Plans:*** Support testing of version 15.1 software. Resolve anomalies identifies in software version 15.1. Conduct certification activities of version 15.1 software. Conduct ATO and AIC of version 15.1 software. Begin ADSI version 16 software development. Continue to implement updates in the ADSI baseline as a result of changes in interface systems and MIL-STDs. Continue development/ refinement of software in response to anomalies discovered during testing. ***FY 2015 Plans:*** Complete testing of version 15.1 software. Continue ADSI version 16 software development. Continue to implement updates in the ADSI baseline. Preliminary efforts in development of version 16.1 if necessary based on test and certification results.			
Title: Engineering, Development, Test and Evaluation	1.665	1.596	1.625
Articles:	-	-	-
Description: Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/ shelter/power generation/environmental system block upgrade program for fielded systems. ***FY 2013 Accomplishments:*** Continued engineering, development, test and evaluation of the AMDPCS Family of Shelter (FoS) systems Objective configuration; Completed and received approval of the AMDPCS V5 Standardization Engineering Change Proposal (ECP). Continued evaluation of the AMDPCS tactical communications upgrades for fielded system. Supported virtualization of AMDPCS systems on other architectures. Incorporated some IBCS functions to support the 1QFY14 IBCS-ADAM Demo. ***FY 2014 Plans:*** Continue evaluation of AMDPCS FoS configurations. Assess evolving technologies for providing system power and environmental control. Evaluate communications, secure wireless, secure VTC and data processing technologies for potential system applications. Evaluate IBCS-ADAM capabilities during the 1Q FY14 demo. Develop interfaces for demonstrating IBCS-ADAM as a System Under Evaluation (SUE) at Network Integration Evaluation (NIE) 16.1. ***FY 2015 Plans:*** Continue evaluation of AMDPCS FoS configurations. Further assess and test power system technologies. Continue evaluation of emerging secure wireless, secure VTC and data processing technologies. Support IBCS-ADAM at NIE 16.1. Plan for IBCS-			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
ADAM participation as a System Under Test (SIT) at NIE 16.2. Prepare ECP that allows IBCS functions to be integrated in the current ADAM Systems.			
Title: Software System Certification Testing, Accreditation, and Approval of Authority-to-Operate (ATO)	0.832	0.798	0.812
Articles:	-	-	-
Description: Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments. ***FY 2013 Accomplishments:*** Continued software system certification testing, accreditation, and approval of ATO for the various software systems; continued Army and Joint integration and interoperability assessments. ***FY 2014 Plans:*** Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments. ***FY 2015 Plans:*** Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments.			
Accomplishments/Planned Programs Subtotals	13.875	13.303	13.539

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• AD5070: *AD5070, AMDPCS*	53.059	13.090	27.374	-	27.374	28.410	32.727	32.980	33.325	Continuing	Continuing
• PE 0604741A, Proj 149: *PE 0604741A, Proj 149, Counter-Rockets, Artillery & Mortar*	25.588	1.575	2.367	-	2.367	4.377	3.550	3.651	3.757	Continuing	Continuing
• SSN H30503: *SSN H30503, Rocket, Artillery, Mortar (RAM) Warn (Parent is IFPC Family of Systems: BZ0501)*	27.345	11.929	27.652	-	27.652	43.061	29.061	-	-	-	139.048
• SSN H30504: *SSN H30504, C-RAM Enhancements (Parent is IFPC Family of Systems: BZ0501)*	-	43.425	40.644	-	40.644	18.122	16.182	-	-	-	118.373

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• PE 06043019A, Proj DU3: *PE 06043019A, Proj DU3, IFPC (FY12 PE0603305A IFPC II - Intercept)*	25.710	79.190	96.177	-	96.177	156.523	90.980	58.214	27.663	Continuing	Continuing
• PE 0605457A, Proj S40: *PE 0605457A, Proj S40, Army Integrated Air and Missile Defense (AIAMD)*	233.892	369.452	142.584	-	142.584	215.659	228.791	170.828	154.565	Continuing	Continuing
• SSN BZ5075: *SSN BZ5075, IAMD Battle Command System*	-	-	-	-	-	21.091	206.300	298.990	379.981	Continuing	Continuing
• PE 060482A, Proj E10: *PE 060482A, Proj E10, Sentinel*	3.734	1.548	5.224	-	5.224	12.213	11.389	10.906	12.132	Continuing	Continuing

Remarks

The above listed programs are interrelated with AMDPCS efforts, but they may or may not receive funding for the efforts covered in this report.

D. Acquisition Strategy

The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies. The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades. AMDPCS is being developed for both the Army's Active and Reserve components.

AMDWS is a prime component of C-RAM. It provides the Forward Operating Base (FOB) commander with clearance of fires display and enemy munitions flight paths.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	Project (Number/Name) 146 / *Air & Msl Defense Planning Control Sys*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	26.913	1.749	Dec 2012	1.684	Dec 2013	1.706	Dec 2014	-		1.706	Continuing	Continuing	-
		Subtotal	26.913	1.749		1.684		1.706		-		1.706	-	-	-

Remarks

Not Applicable

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMDWS Software Development and Engineering	SS/CPFF	Northrop Grumman : Huntsville AL	105.510	10.568	Dec 2012	10.129	Dec 2013	10.317	Dec 2014	-		10.317	Continuing	Continuing	Continuing
ADSI Software Development and Engineering	SS/T&M	Ultra Electronics : Austin, TX	7.079	0.111	Mar 2013	0.105	Feb 2014	0.107	Feb 2015	-		0.107	Continuing	Continuing	Continuing
Developmental Engineering	Various	Various : Various	41.874	1.291	Dec 2012	1.237	Dec 2013	1.259	Dec 2014	-		1.259	Continuing	Continuing	Continuing
		Subtotal	154.463	11.970		11.471		11.683		-		11.683	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification/Testing	Various	JITC : Ft Huachuca, AZ	1.034	0.072	Feb 2013	0.068	Feb 2014	0.069	Feb 2015	-		0.069	Continuing	Continuing	Continuing
Interoperability Assessment	Various	CTSF : Ft Hood, TX	1.365	0.084	May 2013	0.080	May 2014	0.081	May 2015	-		0.081	Continuing	Continuing	Continuing
		Subtotal	2.399	0.156		0.148		0.150		-		0.150	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	Project (Number/Name) 146 / *Air & Msl Defense Planning Control Sys*	

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	183.775	13.875		13.303		13.539		-		13.539	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*

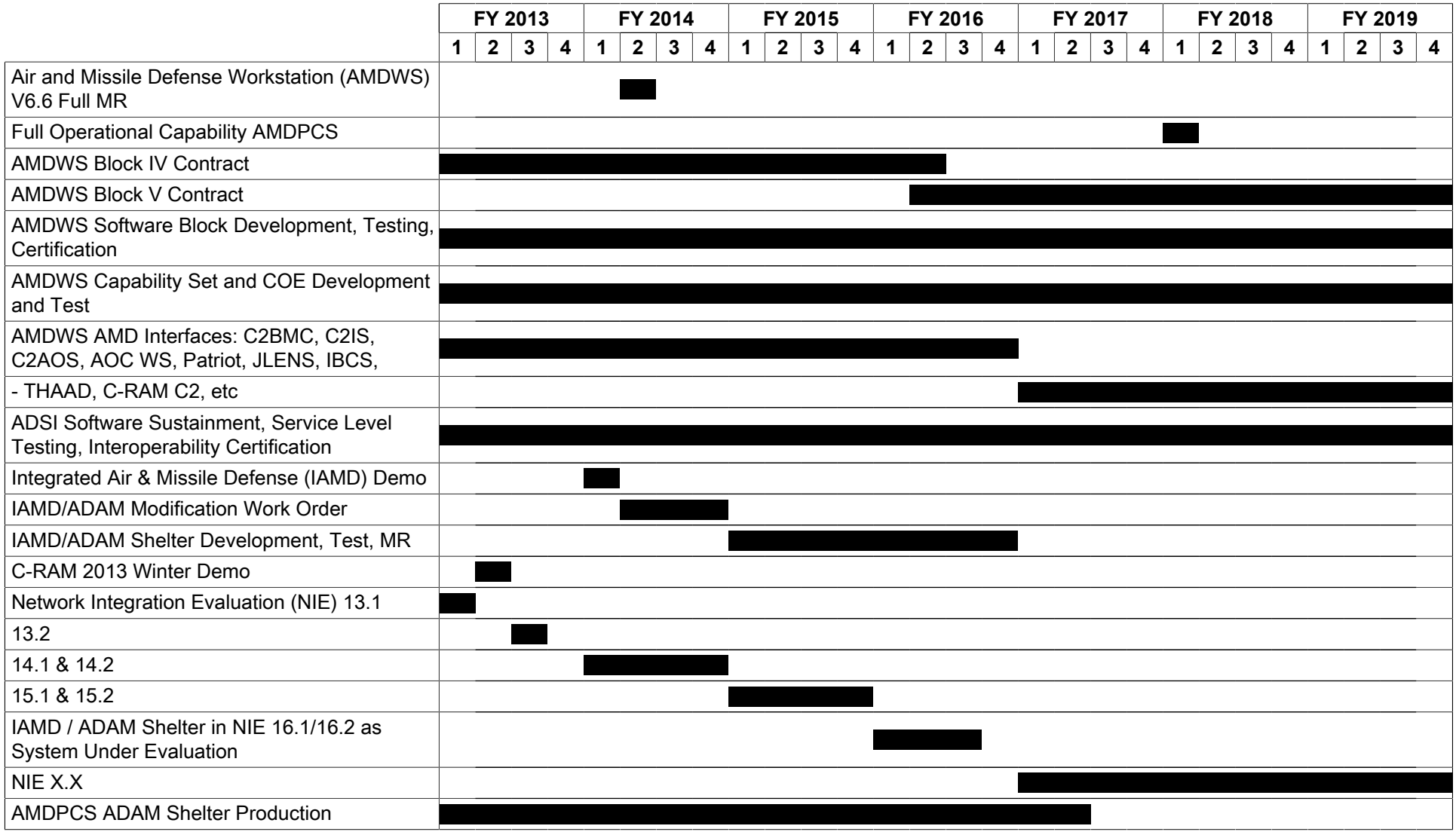

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*

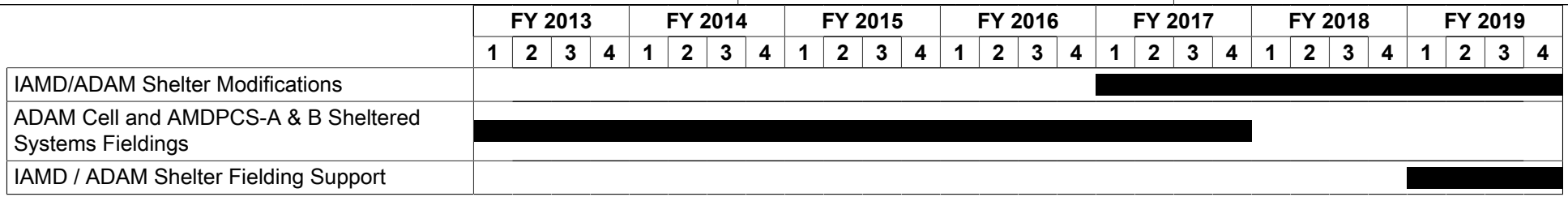

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Air and Missile Defense Workstation (AMDWS) V6.6 Full MR	2	2014	2	2014
Full Operational Capability AMDPCS	1	2018	1	2018
AMDWS Block IV Contract	2	2011	2	2016
AMDWS Block V Contract	2	2016	2	2021
AMDWS Software Block Development, Testing, Certification	3	2007	4	2021
AMDWS Capability Set and COE Development and Test	1	2013	1	2020
AMDWS AMD Interfaces: C2BMC, C2IS, C2AOS, AOC WS, Patriot, JLENS, IBCS,	4	2012	4	2016
- THAAD, C-RAM C2, etc	1	2017	4	2021
ADSI Software Sustainment, Service Level Testing, Interoperability Certification	1	2005	4	2021
Integrated Air & Missile Defense (IAMD) Demo	1	2014	1	2014
IAMD/ADAM Modification Work Order	2	2014	4	2014
IAMD/ADAM Shelter Development, Test, MR	1	2015	4	2016
C-RAM 2013 Winter Demo	2	2013	2	2013
Network Integration Evaluation (NIE) 13.1	1	2013	1	2013
13.2	3	2013	3	2013
14.1 & 14.2	1	2014	4	2014
15.1 & 15.2	1	2015	4	2015
IAMD / ADAM Shelter in NIE 16.1/16.2 as System Under Evaluation	1	2016	3	2016
NIE X.X	1	2017	4	2019
AMDPCS ADAM Shelter Production	2	2001	2	2017
IAMD/ADAM Shelter Modifications	1	2017	4	2019
ADAM Cell and AMDPCS-A & B Sheltered Systems Fieldings	2	2001	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 146 / *Air & Msl Defense Planning Control Sys*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IAMD / ADAM Shelter Fielding Support	1	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	Project (Number/Name) 149 / *Counter-Rockets, Artillery & Mortar*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
149: *Counter-Rockets, Artillery & Mortar*	-	25.588	1.575	2.367	-	2.367	4.377	3.550	3.651	3.757	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Counter-Rocket, Artillery, Mortar (C-RAM) is an evolutionary, non-developmental program initiated by the Army Chief of Staff in response to the indirect fire (IDF) threat and a validated Operational Needs Statement (ONS). The primary mission of the C-RAM program is to develop, procure, field, and maintain a system-of-systems (SoS) that can detect RAM launches; provide localized warning to the defended area, with sufficient time for personnel to take appropriate action; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM capability is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems, warning systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System (LPWS)), with a commercial off-the-shelf (COTS) wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in Afghanistan, providing correlated air and ground pictures, linking units to the Army Mission Command and the Joint Defense Network, and using various forms of communications to provide situational awareness and exchange of timely and accurate information in order to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond, and Protect decisions.

The deployment of the C-RAM SoS was accomplished through an incremental acquisition process driven by urgent operational needs, theater priorities, and emerging capability requirements to provide a counter-RAM capability to combat forces. The C-RAM SoS approach was initially validated by a Proof of Principle demonstration in December 2004 and has undergone more than 25 Army Test and Evaluation Command (ATEC)-supported operational assessments to incorporate multiple improvements in response to changes in threat tactics and lessons learned. The C-RAM Sense and Warn (S&W) and Intercept capabilities are currently deployed to locations in Afghanistan in support of Operation Enduring Freedom (OEF). In response to a theater requirement tasked to the Rapid Equipping Force (REF), C-RAM installed Mass Notification Systems (MNS) at multiple OEF sites to support base-wide alerts and announcements. Continuing C-RAM SoS improvement efforts, required to meet emerging theater requirements, include C2 software upgrades as well as integration and deployment of Ku band Multi-Function Radio Frequency System (MFRFS) radars for an enhanced detection capability against stressing threats. Base RDTE funding for FY 2015 and beyond supports maintenance of C2 basic Air Defense functionality. Support of the existing C-RAM SoS capability deployed in theater has been through the Overseas Contingency Operations (OCO) process.

Near-term directed enhancements to the C-RAM SoS capability include use of Army tactical communications rather than commercial systems; integration of Warn functionality into the C2 workstation to reduce complexity and footprint; integration with Unmanned Aircraft Systems (UAS) Universal Ground Control Station (UGCS) for enhanced situational awareness, combat identification, and response options; and dynamic clearance of unplanned fires (DCUF) in conjunction with the Advanced Field Artillery Tactical Data System (AFATDS) for rapid and enhanced response.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 149 / *Counter-Rockets, Artillery & Mortar*

Multiple acquisition efforts are associated with the C-RAM program. The C-RAM Program Directorate currently has only a single RDTE budget line for C-RAM (PE 654741/149); therefore, funding for all C-RAM efforts is applied to this budget line, but all expenditures are tracked by individual effort.

Existing C-RAM Intercept assets (i.e., LPWS) have undergone reset and are currently being fielded to the first of two Indirect Fire Protection Capability (IFPC)/Avenger composite Battalions (5-5 Air Defense Artillery). The LPWS has completed a Limited User Test (LUT). The C-RAM Intercept Capability Production Document (CPD) was approved on 22 Aug 2013, and the Army Acquisition Executive (AAE) approved an Acquisition Decision Memorandum (ADM) on 23 Aug 2013, authorizing C-RAM Intercept's entry into the acquisition management system as an Acquisition Category (ACAT) III program under the management of the Program Executive Officer, Missiles and Space. C-RAM Intercept is entering the acquisition management system at post-Milestone C. Materiel Release is projected for 1QFY15.

The C-RAM Program Directorate was the Materiel Developer for the Accelerated Improved Intercept Initiative (AI3), a rapid development effort to provide an Intercept capability to defeat stressing threats, which culminated in a sucessful Live Fire test in 4QFY13. Funding for AI3 development and test efforts was prior year OCO.

The Rocket, Artillery, Mortar (RAM) Warn program is a horizontal technology insertion, using current C-RAM warning equipment, to provide early, localized warning to all Maneuver Brigade Combat Teams (BCT). Prior year C-RAM RDTE funding was shared to conduct RAM Warn test activities in support of the Milestone C decision.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: C-RAM C2 Software Development and Enhancements	9.254	1.575	2.367
Articles:	-	-	-
Description: Software development effort based on changes in threat, integration of emerging requirements from external PMs (e.g., upgraded sensors), technology insertions (e.g., new missile technologies), and interoperability requirements (e.g., IAMD, comms, and HBSS requirements), to ensure that enhancements to C-RAM C2 software do not negatively impact the performance of the other C-RAM pillars (Shape, Sense, Warn, Intercept, Respond, Protect).			
FY 2013 Accomplishments: C-RAM C2 software development contract efforts.			
FY 2014 Plans: C-RAM C2 software development contract efforts.			
FY 2015 Plans: C-RAM C2 software development contract efforts.			
Title: C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation	9.384	-	-
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 149 / *Counter-Rockets, Artillery & Mortar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Description: Replaces commercial off-the-shelf (COTS) radios that link C-RAM C2 to sensors with Joint Tactical Radio System (JTRS) when available and replaces current Warn radios with military spectrum radios, providing enhanced reliability, sustainability, and supportability. Integrates/tests Warn function into current C-RAM C2, eliminating a COTS box. ***FY 2013 Accomplishments:*** C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation			
Title: UAS Universal Ground Control Station Integration ***Articles:*** ***Description:*** Integrates C-RAM C2 with the Army UAS Universal Ground Control Station, enabling direct tasking of Shadow, Hunter, and Warrior UAS to the indirect fire point of origin. ***FY 2013 Accomplishments:*** UAS Universal Ground Control Station Integration	3.475 -	- -	- -
Title: Dynamic Clearance of Fires ***Articles:*** ***Description:*** Provides an automated unplanned fires clearance capability, enabling the safe engagement of targets that would not be possible with current, manual procedures. Provides more rapid clearance of airspace and more effective engagements of unplanned targets. ***FY 2013 Accomplishments:*** Dynamic Clearance of Fires	3.475 -	- -	- -
Accomplishments/Planned Programs Subtotals	25.588	1.575	2.367

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• SSN H30503: *SSN H30503, Rocket, Artillery, Mortar (RAM) Warn (Parent is IFPC Family of Systems: BZ0501)*	27.345	11.929	27.652	-	27.652	43.061	29.061	-	-	-	139.048

Exhibit R-2A, RDT&E Project Justification: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 149 / *Counter-Rockets, Artillery & Mortar*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• SSN H30504: *SSN H30504, C-RAM Enhancements (Parent is IFPC Family of Systems: BZ0501)*	-	43.425	40.644	-	40.644	18.122	16.182	-	-	-	118.373
• PE 0604741A, Proj 146: *PE 0604741A, Proj 146, Air & Missile Defense Planning and Control System*	13.875	13.303	13.539	-	13.539	15.871	16.082	16.227	16.408	Continuing	Continuing
• SSN AD5070: *SSN 5070, Air & Missile Defense Planning and Control System*	53.059	13.090	27.374	-	27.374	28.410	32.727	32.980	33.325	Continuing	Continuing
• PE 0604319A, Proj DU3: *PE 0604319A, Proj DU3, IFPC2 (FY12 PE0603305A IFPC II - Intercept)*	25.710	79.190	96.177	-	96.177	156.523	90.980	58.214	27.663	Continuing	Continuing
• PE 0605457A, Proj S40: *PE 0605457A, Proj S40, Army Integrated Air and Missile Defense (AIAMD)*	233.892	369.452	142.584	-	142.584	215.659	228.791	170.828	154.565	Continuing	Continuing
• SSN BZ5075: *SSN BZ5075, IAMD Battle Command System*	-	-	-	-	-	21.091	206.300	298.990	379.981	Continuing	Continuing
• PE 060482A, Proj E10: *PE 060482A, Proj E10, Sentinel*	-	-	5.224	-	5.224	12.213	11.389	10.906	12.132	Continuing	Continuing

Remarks

The above listed programs are interrelated with C-RAM efforts, but they may or may not provide funding for the efforts covered in this report.

D. Acquisition Strategy

The C-RAM program is following an evolutionary acquisition strategy for rapid fielding of mature technology to the user. The objective of the strategy is to balance needs, available technology, and resources to quickly provide a robust capability to engage RAM threats. Like RAM Warn, the C-RAM Intercept (i.e., LPWS) capability has evolved from the C-RAM SoS efforts. Both of these programs are currently fielding equipment to units.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	Project (Number/Name) 149 / *Counter-Rockets, Artillery & Mortar*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	19.445	1.427		0.140		0.211		-		0.211	Continuing	Continuing	Continuing
		Subtotal	19.445	1.427		0.140		0.211		-		0.211	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman	C/CPIF	C-RAM C2 Development and Enhancements : Carson, CA	63.147	21.650	Aug 2013	1.435	Mar 2014	2.156		-		2.156	Continuing	Continuing	Continuing
Raytheon Company	C/CPIF	Improved Interceptor : Tucson, AZ	77.675	-		-		-		-		-	-	77.675	-
		Subtotal	140.822	21.650		1.435		2.156		-		2.156	-	-	-

Remarks

FY13 allocation to the Raytheon Company for the Improved Interceptor did not take place due to the Army's termination of the Interceptor Enhancements effort and the subsequent Congressional adjustment in the amount of -$24.925 million.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OGA	Various	TBD : TBD	17.640	2.511		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	17.640	2.511		-		-		-		-	-	-	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	177.907	25.588		1.575		2.367		-		2.367	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Army			Date: March 2014
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	Project (Number/Name) 149 / *Counter-Rockets, Artillery & Mortar*	

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 149 / *Counter-Rockets, Artillery & Mortar*

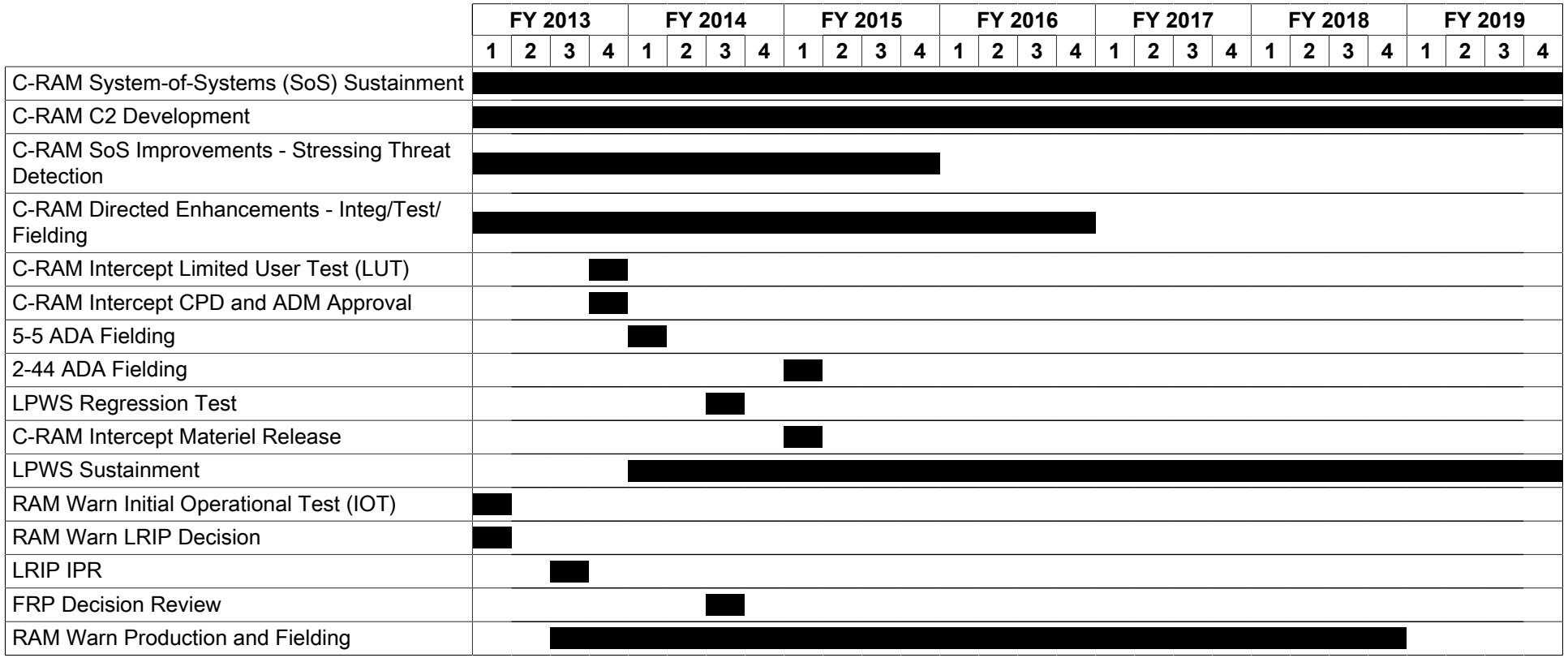

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604741A / *Air Defense Command, Control and Intelligence - Eng Dev*	**Project (Number/Name)** 149 / *Counter-Rockets, Artillery & Mortar*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
C-RAM System-of-Systems (SoS) Sustainment	1	2007	4	2019
C-RAM C2 Development	1	2013	4	2019
C-RAM SoS Improvements - Stressing Threat Detection	1	2012	4	2015
C-RAM Directed Enhancements - Integ/Test/Fielding	1	2012	4	2016
C-RAM Intercept Limited User Test (LUT)	4	2013	4	2013
C-RAM Intercept CPD and ADM Approval	4	2013	4	2013
5-5 ADA Fielding	1	2014	1	2014
2-44 ADA Fielding	1	2015	1	2015
LPWS Regression Test	3	2014	3	2014
C-RAM Intercept Materiel Release	1	2015	1	2015
LPWS Sustainment	1	2014	4	2019
RAM Warn Initial Operational Test (IOT)	1	2013	1	2013
RAM Warn LRIP Decision	1	2013	1	2013
LRIP IPR	3	2013	3	2013
FRP Decision Review	3	2014	3	2014
RAM Warn Production and Fielding	3	2013	4	2018