Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Army											Date: March 2014	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605035A / *Aircraft Survivability Development*							
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	-	-	-	145.409	-	145.409	143.099	91.930	78.079	68.505	Continuing	Continuing
EB4: *COMMON INFRARED COUNTER MEASURE (CIRCM)*	-	-	-	128.252	-	128.252	116.166	68.601	50.500	62.681	Continuing	Continuing
EE3: *A/C SURV EQUIP DEV*	-	-	-	14.846	-	14.846	22.449	19.186	23.866	1.520	Continuing	Continuing
EE4: *COMMON MISSILE WARNING SYSTEM (CMWS)*	-	-	-	2.311	-	2.311	4.484	4.143	3.713	4.304	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

The Aircraft Survivability Development budget line includes Common Missile Warning System (EE4), Aircraft Survivability Equipment Development (EE3), and Common IR Counter Measure (EB4).

EE4:
The US Army operational requirements concept for Aviation Infrared (IR) countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). SIIRCM is an integrated warning and countermeasure system to enhance aircraft survivability against IR-guided threat missile systems. The Common Missile Warning System (CMWS) is a core element of the SIIRCM concept. CMWS is an integrated ultraviolet (UV) missile warning system, with an Improved Countermeasure Dispenser (ICMD) serving as a subsystem to a host aircraft.

The CMWS program is a UV missile warning system that cues both flare and laser-based countermeasures to defeat incoming IR-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS Electronic Control Unit (ECU) receives UV missile detection data from Electro-Optic Missile Sensors (EOMS) and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently ATIRCM-equipped CH-47 platform only). In addition, the CMWS ECU receives from the EOMS unguided munitions detection data which it also passes to the aircrew through aural and visual alerts. The aircrew then applies the appropriate Tactics, Techniques and Procedures (TTPs) to break contact or engage the enemy with own-ship ordnance. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding material release conditions to achieve a Full Material Release (FMR) for CMWS and ensure protection against emerging IR-guided missile threats.

The A-Kit for CMWS includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

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 0605035A *I Aircraft Survivability Development*

EE3:
The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve Radio Frequency (RF) ASE for Army aviation. The APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes Radio Frequency (RF) emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1 serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V) Radar Warning Receiver (RWR) implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3. Phase 2, RWR Modernization, adopts the ongoing United States Navy Class I RWR Engineering Change Proposal (ECP), commonly referred to as the APR-39D(V)2 system. APR-39D(V)2 will significantly improve the near-spherical RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Under Phase 2, the Army will develop enhancements to the APR-39D(V)2, including integrated suite control functionality, threat correlation and off-boarding capability, and hardware modifications required to maintain planned integrated jamming growth capability. Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft; Materiel Development Decision (MDD) for this ECM jamming capability phase is not expected until later in the Future Years Defense Program (FYDP).

EB4:
The Common Infrared Countermeasure (CIRCM) is an infrared (IR) countermeasure system that interfaces with a Missile Warning System (MWS) to provide near spherical coverage of the host platform in order to defeat IR threat missiles. The CIRCM will provide the sole acquisition of future laser-based IR countermeasure systems for all rotary-wing, tilt-rotor, and small fixed-wing aircraft across the Department of Defense. The US Army's concept of CIRCM is part of the Suite of Integrated Infrared Countermeasures (SIIRCM). The core components of the SIIRCM concept are: a Missile Warning System (MWS), IR expendables countermeasures (flares) and a laser-based IRCM. The SIIRCM detects, declares and initiates IRCM against IR-guided Surface-to-Air Missiles (SAM) or Air-to-Air Missiles (AAM). The CIRCM is the next generation of the laser-based IRCM component and will interface with both the Army's Common Missile Warning System (CMWS) and the Navy's Joint and Allied Threat Awareness System (JATAS). CIRCM was approved to be funded to the Director, Cost Assessment and Program Evaluation Independent Cost Estimate (CAPE ICE) through Milestone B (MS B) per Defense Acquisition Executive Acquisition Decision Memorandum (DAE) (ADM), December 28, 2011.

The A-Kit for CIRCM includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type. The CIRCM B-Kit is the mission kit (laser, pointer tracker, and controller) required to achieve near spherical coverage for an aircraft.

EE4 Justification:
Fiscal Year (FY) 2015 Base RDT&E dollars in the amount of $2.311 million supports development engineering of the Threat Analysis Database (TAD) and integration with other Aircraft Survivability Equipment systems.

EE3 Justification:

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 0605035A *I Aircraft Survivability Development*

Fiscal Year (FY) 2015 Base RDT&E funding of $14.846 million funds testing of Phase 2 APR-39D(V)2 RWR prototypes, Mission Data Set (MDS) development, continued platform integration on AH-64E, and integration with other ASE systems.

EB4 Jsutification:
Fiscal Year 2015 Base RDT&E in the amount of $128.252 million supports the Engineering and Manufacturing Development (EMD) phase to include platform integration as well as integration with other Aircraft Survivability Equipment (ASE) systems.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	145.409	-	145.409
Total Adjustments	-	-	145.409	-	145.409
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	145.409	-	145.409

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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EB4 / *COMMON INFRARED COUNTER MEASURE (CIRCM)*	

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
EB4: *COMMON INFRARED COUNTER MEASURE (CIRCM)*	-	-	-	128.252	-	128.252	116.166	68.601	50.500	62.681	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Previously funded in L20 and VU8, PE 0604270A (Electronic Warfare Development)

A. Mission Description and Budget Item Justification

The Common Infrared Countermeasure (CIRCM) is an infrared (IR) countermeasure system that interfaces with a Missile Warning System (MWS) to provide near spherical coverage of the host platform in order to defeat IR threat missiles. The CIRCM will provide the sole acquisition of future laser-based IR countermeasure systems for all rotary-wing, tilt-rotor, and small fixed-wing aircraft across the Department of Defense. The US Army's concept of CIRCM is part of the Suite of Integrated Infrared Countermeasures (SIIRCM). The core components of the SIIRCM concept are: a Missile Warning System (MWS), IR expendables countermeasures (flares) and a laser-based IRCM. The SIIRCM detects, declares and initiates IRCM against IR-guided Surface-to-Air Missiles (SAM) or Air-to-Air Missiles (AAM). The CIRCM is the next generation of the laser-based IRCM component and will interface with both the Army's Common Missile Warning System (CMWS) and the Navy's Joint and Allied Threat Awareness System (JATAS). CIRCM was approved to be funded to the Director, Cost Assessment and Program Evaluation Independent Cost Estimate (CAPE ICE) through Milestone B (MS B) per Defense Acquisition Executive Acquisition Decision Memorandum (DAE) (ADM), December 28, 2011.

The A-Kit for CIRCM includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type. The CIRCM B-Kit is the mission kit (laser, pointer tracker, and controller) required to achieve near spherical coverage for an aircraft.

Justification:
Fiscal Year 2015 Base RDT&E in the amount of $128.252 million supports the Engineering and Manufacturing Development (EMD) phase to include platform integration as well as integration with other Aircraft Survivability Equipment (ASE) systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Development Efforts	-	-	128.252
Description: RDT&E dollars begin the design and development of the CIRCM system.			
FY 2015 Plans:			

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 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EB4 / *COMMON INFRARED COUNTER MEASURE (CIRCM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
RDT&E dollars support the CIRCM EMD phase, prototype manufacturing for 14 prototypes, and platform integration. "Other Testing" includes funds to acquire test threat assets.			
Accomplishments/Planned Programs Subtotals	-	-	128.252

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
• .: *APA Funding:* *APA, BA 4, AZ3537*	-	-	-	-	-	-	51.417	100.409	157.627	Continuing	Continuing

Remarks

D. Acquisition Strategy

The December 28, 2011 DAE ADM authorized entry into the Technology Development (TD) phase, designated the program a pre-Major Defense Acquisition Program (MDAP), and approved the updated exit criteria. After a full and open competition beginning in the second quarter of Fiscal Year 2011 (FY11), two contractors were selected and awarded Technology Development contracts on January 31, 2012 for the CIRCM. The CIRCM contract awards were followed by a contractor protest which resulted in a work stoppage of 100 days. Government Accountability Office (GAO) ruled in favor of the Government on all counts and the effort was re-initiated on May 23, 2012. CIRCM will continue pre-MS B activities and initiate a competitive procurement for EMD in the third quarter of FY14. MS B approval is anticipated in first quarter of FY15, followed by award of the EMD contract in the second quarter of FY15 to one vendor. The EMD contract will include priced options for Low Rate Initial Production (LRIP) 1 and 2, Engineering Support, A-Kit development for other aircraft, a Technical Data Package (TDP) (which will enable competition for Full Rate Production (FRP)), and Defense Exportability Features (DEF). Upon CIRCM MS C approval in the second quarter of FY17, the LRIP and Engineering Support options may be exercised and the program may immediately enter the Production & Deployment phase. Currently, the Product Manager (PdM) Countermeasures intends to pursue competition for the award of a fixed price contract for CIRCM FRP if the option is exercised to procure the TDP.

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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EB4 / *COMMON INFRARED COUNTER MEASURE (CIRCM)*	

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
Data	Various	Various : -	0.000	-		-		0.111		-		0.111	Continuing	Continuing	Continuing
System Engineering Program Management	Various	Various : -	0.000	-		-		12.297		-		12.297	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		12.408		-		12.408	-	-	-

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
Non-Recurring Engineering (NRE)	C/CPFF	Various : -	0.000	-		-		41.253	Mar 2015	-		41.253	Continuing	Continuing	Continuing
TD Bridge Activity	C/CPFF	Various : -	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Prototype Manufacturing	C/FFP	Various : -	0.000	-		-		39.456	Mar 2015	-		39.456	Continuing	Continuing	Continuing
Development Facilities	Various	Various : -	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Other R&D	Various	Various : -	0.000	-		-		6.100		-		6.100	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		86.809		-		86.809	-	-	-

Support ($ 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
Support Equipment	Various	Various : -	0.000	-		-		1.806		-		1.806	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		1.806		-		1.806	-	-	-

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
Government System Test and Evaluation	Various	Various : -	0.000	-		-		-		-		-	Continuing	Continuing	Continuing

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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EB4 / *COMMON INFRARED COUNTER MEASURE (CIRCM)*	

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
Other Testing	Various	Various : -	0.000	-		-		27.229		-		27.229	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		27.229		-		27.229	-	-	-

	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
Project Cost Totals	0.000	-		-		128.252		-		128.252	-	-	-

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 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EB4 / *COMMON INFRARED COUNTER MEASURE (CIRCM)*

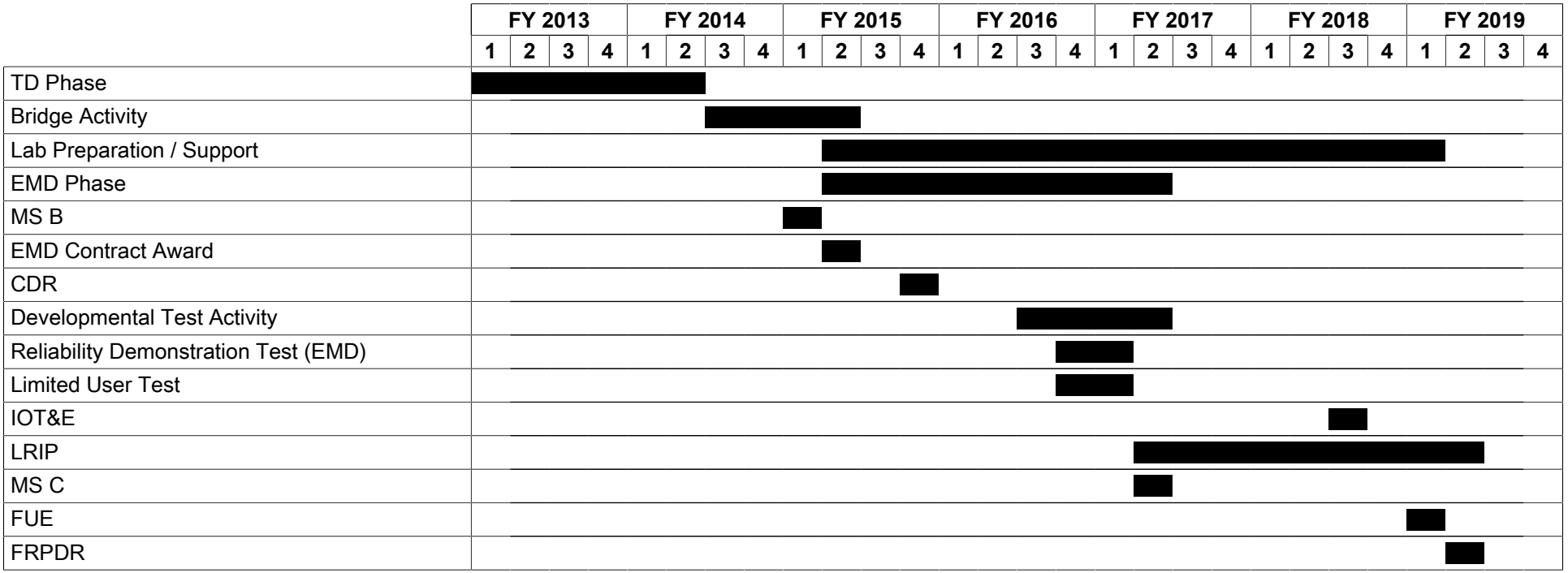

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EB4 / *COMMON INFRARED COUNTER MEASURE (CIRCM)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TD Phase	3	2012	2	2014
Bridge Activity	3	2014	2	2015
Lab Preparation / Support	2	2015	1	2019
EMD Phase	2	2015	2	2017
MS B	1	2015	1	2015
EMD Contract Award	2	2015	2	2015
CDR	4	2015	4	2015
Developmental Test Activity	3	2016	2	2017
Reliability Demonstration Test (EMD)	4	2016	1	2017
Limited User Test	4	2016	1	2017
IOT&E	3	2018	3	2018
LRIP	2	2017	2	2019
MS C	2	2017	2	2017
FUE	1	2019	1	2019
FRPDR	2	2019	2	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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EE3 / *A/C SURV EQUIP 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
EE3: *A/C SURV EQUIP DEV*	-	-	-	14.846	-	14.846	22.449	19.186	23.866	1.520	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Previously funded in 665, PE 0604270A Electronic Warfare Development

A. Mission Description and Budget Item Justification

The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve Radio Frequency (RF) ASE for Army aviation. The APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes Radio Frequency (RF) emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1 serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V) Radar Warning Receiver (RWR) implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3. Phase 2, RWR Modernization, adopts the ongoing United States Navy Class I RWR Engineering Change Proposal (ECP), commonly referred to as the APR-39D(V)2 system. APR-39D(V)2 will significantly improve the near-spherical RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Under Phase 2, the Army will develop enhancements to the APR-39D(V)2, including integrated suite control functionality, threat correlation and off-boarding capability, and hardware modifications required to maintain planned integrated jamming growth capability. Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft; Materiel Development Decision (MDD) for this ECM jamming capability phase is not expected until later in the Future Years Defense Program (FYDP).

Justification: Fiscal Year (FY) 2015 Base RDT&E funding of $14.846 million funds testing of Phase 2 APR-39D(V)2 RWR prototypes, Mission Data Set (MDS) development, continued platform integration on AH-64E, and integration with other ASE systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Phase 2 Radio Frequency CM	-	-	14.846
Description: Phase 2 Product Development (Digital RWR)			
FY 2015 Plans: Will fund testing of Phase 2 prototypes, Mission Data Set (MDS) development, platform integration on AH-64E, and integration with other ASE systems.			
Accomplishments/Planned Programs Subtotals	-	-	14.846

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 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EE3 / *A/C SURV EQUIP DEV*

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
• AZ3511: *Radio Frequency CM (AZ3511)*	-	-	33.554	-	33.554	103.916	147.039	23.752	41.228	Continuing	Continuing

Remarks

D. Acquisition Strategy

Army RF ASE is managed by Project Manager ASE (PM ASE) for development, testing, procurement, integration and installation on Army rotary wing and small fixed wing aviation platforms. PM ASE proposed a three-phased path forward commensurate with user priorities and affordability considerations. Phase 1, approved by the Milestone Decision Authority (MDA), addresses obsolescence/Diminishing Manufacturing Sources (DMS) issues associated with the currently fielded AN/APR-39A(V) Radar Warning Receiver (RWR) via sole source Engineering Change Proposal (ECP) awarded to the APR-39A manufacturer. Phase 2 adopts the on-going United States Navy (USN) RWR Class I Correction of Deficiencies ECP commonly referred to as the APR-39D(V)2 system, limiting service-unique design, test, and integration expenses. Full Army participation throughout the remaining development, testing, procurement, fielding, and sustainment of the APR-39D(V)2 Digital RWR will address the significant Army RF capability gap while avoiding as much as $1 billion in additional costs associated with a single-Service solution. This multi-Service approach also fields an effective and suitable Material Solution 3 years sooner to support the re-balance of the National Defense Strategy to the RF threat-heavy Asia-Pacific Region. Phase 3 will develop and integrate active Electronic Countermeasures jamming capability for select aircraft.

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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EE3 / *A/C SURV EQUIP DEV*	

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
Other Development	TBD	Various : -	7.985	-		-		-		-		-	Continuing	Continuing	Continuing
Project Management	Various	Various : -	0.182	-		-		0.202		-		0.202	Continuing	Continuing	Continuing
		Subtotal	8.167	-		-		0.202		-		0.202	-	-	-

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
Digital Radar Warning Receiver (RWR)	Various	Lab Demo / Study : Various	10.634	-		-		-		-		-	Continuing	Continuing	Continuing
S/W Development	MIPR	ARAT : Aberdeen Proving Ground, MD	0.000	-		-		1.000		-		1.000	Continuing	Continuing	Continuing
SIL Updates	MIPR	I2WD : Aberdeen Proving Ground, MD	0.000	-		-		1.000		-		1.000	Continuing	Continuing	Continuing
Depot Standup	MIPR	Tobyhanna : Tobyhanna, PA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Platform Integration	Various	TBD : -	0.000	-		-		6.042		-		6.042	Continuing	Continuing	Continuing
		Subtotal	10.634	-		-		8.042		-		8.042	-	-	-

Support ($ 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
Contractor Support	Various	Various : -	2.359	-		-		0.400		-		0.400	Continuing	Continuing	Continuing
Matrix Support	Various	Various : -	6.236	-		-		0.590		-		0.590	Continuing	Continuing	Continuing
		Subtotal	8.595	-		-		0.990		-		0.990	-	-	-

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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EE3 / *A/C SURV EQUIP DEV*	

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
Multi-Service DT/OT	TBD	Various : -	0.025	-		-		5.612		-		5.612	Continuing	Continuing	Continuing
		Subtotal	0.025	-		-		5.612		-		5.612	-	-	-

	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	27.421	-		-		14.846		-		14.846	-	-	-

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 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EE3 / *A/C SURV EQUIP DEV*

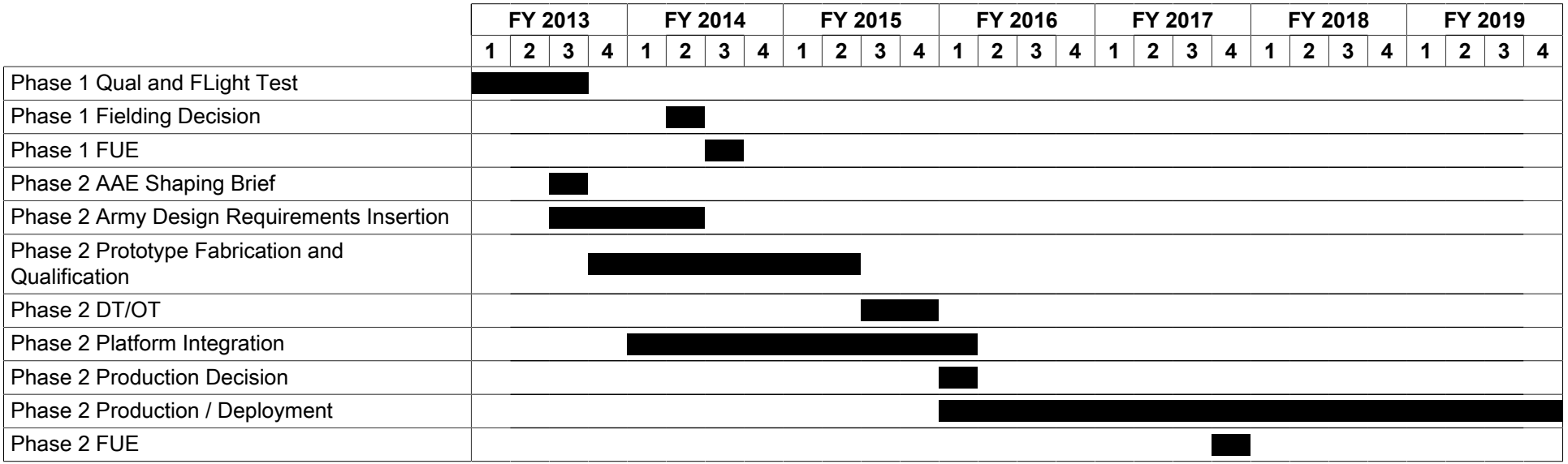

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EE3 / *A/C SURV EQUIP DEV*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Phase 1 Qual and FLight Test	3	2012	3	2013
Phase 1 Fielding Decision	2	2014	2	2014
Phase 1 FUE	3	2014	3	2014
Phase 2 AAE Shaping Brief	3	2013	3	2013
Phase 2 Army Design Requirements Insertion	3	2013	2	2014
Phase 2 Prototype Fabrication and Qualification	4	2013	2	2015
Phase 2 DT/OT	3	2015	4	2015
Phase 2 Platform Integration	1	2014	1	2016
Phase 2 Production Decision	1	2016	1	2016
Phase 2 Production / Deployment	1	2016	4	2019
Phase 2 FUE	4	2017	4	2017

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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EE4 / *COMMON MISSILE WARNING SYSTEM (CMWS)*	

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
EE4: *COMMON MISSILE WARNING SYSTEM (CMWS)*	-	-	-	2.311	-	2.311	4.484	4.143	3.713	4.304	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Previously funded in L20 and VU7, PE 0604270A Electronic Warfare Development

A. Mission Description and Budget Item Justification

The US Army operational requirements concept for Aviation Infrared (IR) countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). SIIRCM is an integrated warning and countermeasure system to enhance aircraft survivability against IR-guided threat missile systems. The Common Missile Warning System (CMWS) is a core element of the SIIRCM concept. CMWS is an integrated ultraviolet (UV) missile warning system, with an Improved Countermeasure Dispenser (ICMD) serving as a subsystem to a host aircraft.

The CMWS program is a UV missile warning system that cues both flare and laser-based countermeasures to defeat incoming IR-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS Electronic Control Unit (ECU) receives UV missile detection data from Electro-Optic Missile Sensors (EOMS) and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently ATIRCM-equipped CH-47 platform only). In addition, the CMWS ECU receives from the EOMS unguided munitions detection data which it also passes to the aircrew through aural and visual alerts. The aircrew then applies the appropriate Tactics, Techniques and Procedures (TTPs) to break contact or engage the enemy with own-ship ordnance. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding material release conditions to achieve a Full Material Release (FMR) for CMWS and ensure protection against emerging IR-guided missile threats.

The A-Kit for CMWS includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

Justification: Fiscal Year (FY) 2015 Base RDT&E dollars in the amount of $2.311 million supports development engineering of the Threat Analysis Database (TAD) and integration with other Aircraft Survivability Equipment systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Development Effort	-	-	2.311

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 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EE4 / *COMMON MISSILE WARNING SYSTEM (CMWS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: - ***FY 2015 Plans:*** RDT&E funding supports continuing development engineering of the Threat Analysis Database (TAD), salaries, and integration with other ASE systems.			
Accomplishments/Planned Programs Subtotals	-	-	2.311

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
• APA: *BA 4 AZ3517*	125.200	103.021	107.364	-	107.364	131.641	53.736	38.678	33.654	Continuing	Continuing

Remarks

D. Acquisition Strategy

The acquisition strategy includes buying CMWS B-Kits to support the Army Force Generation (ARFORGEN) model and installation of A-Kits on all modernized aircraft. The previous CMWS production contract was a firm fixed-priced (FFP), Indefinite Delivery, Indefinite Quantity (IDIQ) contract. A FFP bridge contract was awarded March 2013 for CMWS hardware. The follow-on CMWS production FFP/CPFF IDIQ contract will be a 3 year firm fixed price contract to procure the remaining Generation 3 Electronic Control Units (ECUs) and A-Kits and will be awarded in late FY2013 / early FY2014. The Gen 3 ECU, which provides increased processing capacity and enables unguided munitions detection, became a part of the system in FY 2010; First Unit Equipped (FUE) for the Gen 3 ECU was achieved in Operation Enduring Freedom (OEF) on 18 September 2013. All aircraft deployed to OEF have received the new processor with hostile fire detection capability. Gen 3 ECU's will gradually replace all Gen 2 ECU's across the Aviation fleet between now and 2017.

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 0605035A / *Aircraft Survivability Development*	Project (Number/Name) EE4 / *COMMON MISSILE WARNING SYSTEM (CMWS)*	

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
CMWS Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	2.670	-		-		0.208		-		0.208	Continuing	Continuing	Continuing
		Subtotal	2.670	-		-		0.208		-		0.208	-	-	-

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
CMWS Tier 2/3 Upgrades	Various	Various : -	2.000	-		-		-		-		-	Continuing	Continuing	Continuing
CMWS Threat Analysis Database Design	Various	BAE : Various	0.455	-		-		-		-		-	Continuing	Continuing	Continuing
Threat Analysis Database (TAD)	Various	BAE : TBD	0.000	-		-		2.103	Apr 2015	-		2.103	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	TBD	Various : -	11.466	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	13.921	-		-		2.103		-		2.103	-	-	-

	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
Project Cost Totals	16.591	-		-		2.311		-		2.311	-	-	-

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 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EE4 / *COMMON MISSILE WARNING SYSTEM (CMWS)*

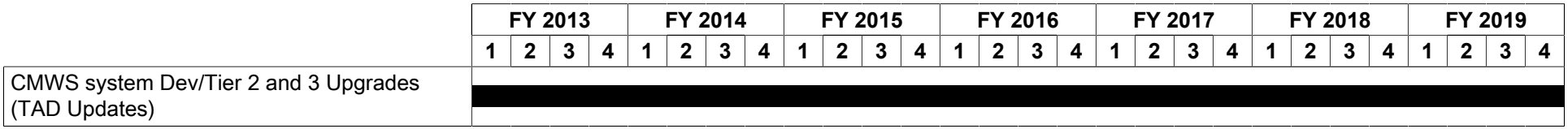

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Army		Date: March 2014
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Aircraft Survivability Development*	**Project (Number/Name)** EE4 / *COMMON MISSILE WARNING SYSTEM (CMWS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CMWS system Dev/Tier 2 and 3 Upgrades (TAD Updates)	2	2011	4	2019