Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army												Date: February 2015
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605626A / *Aerial Common Sensor*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	-	10.377	17.748	0.002	-	0.002	-	-	-	-	-	28.127
AC5: *Enhanced Medium Alt Recon Surv Sys*	-	10.377	17.748	0.002	-	0.002	-	-	-	-	-	28.127

Note

FY15 - This is EMARSS RDTE funding line which contains funding for Airborne Reconnaissance Low - Enhanced (ARL-E) in FY15 ($10.174 million).

A. Mission Description and Budget Item Justification

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's next generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. EMARSS provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS aircraft will be assigned to the U.S. Army Intelligence and Security Command's (INSCOM) Aerial Exploitation Battalions (AEB). EMARSS is an improvement over the existing Medium Altitude Reconnaissance and Surveillance System Quick Reaction Capability (MARSS QRC) in that it hosts an on board Distributed Common Ground System - Army (DCGS-A) capability, improved satellite communications, improved aircraft performance, and life cycle logistics sustainment capability.

EMARSS will consist of a commercial derivative aircraft equipped with an Electro-optical/Infrared (EO/IR) sensor with Full Motion Video (FMV), a Communications Intelligence (COMINT) collection system, an Aerial Precision Geolocation (APG) system, tactical line-of-site (LOS) and beyond line-of-site (BLOS) communications suite, two DCGS-A enabled operator workstations and a self-protection suite. EMARSS is built to allow future capabilities to be integrated on platform with the addition of a third carry-on workstation.

EMARSS will operate in direct support of tactical missions. EMARSS, integrating elements of the DCGS-A, will provide efficient response to Combat Forces with Intelligence, Surveillance and Reconnaissance (ISR) tasking.

The EMARSS funding line contains funding for the Airborne Reconnaissance Low - Enhanced (ARL-E) program. ARL-E supports the Aerial ISR 2020 Strategy which recommended replacement of the current Airborne Reconnaissance Low Multifunction (ARL-M) and migrates the current ARL sensors plus new niche sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. ARL-E procures the hardware, software, and infrastructure to rapidly install sensors which support a rapid plug and play, quick connect/disconnect, mounting system to allow the installation of various combinations of sensor-types in support of a wide-range of theater operations. The sensor suite will consist of a COMINT subsystem capable of supporting theater net centric geo-location efforts, High Definition FMV; Improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar capability and updated mission workstations, as well as radio and data/communications architecture. ARL-E will leverage existing sensors as well as integrating and installing niche sensors to augment current capabilities. Niche capabilities include Wide Area Aerial Surveillance (WAAS), Light Imaging Detection and Ranging (LIDAR) and Hyper Spectral Imaging (HSI) sensors.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army					Date: February 2015
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605626A / *Aerial Common Sensor*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	10.377	17.748	22.896	-	22.896
Current President's Budget	10.377	17.748	0.002	-	0.002
Total Adjustments	-	-	-22.894	-	-22.894
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-22.894	-	-22.894

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605626A / *Aerial Common Sensor*	Project (Number/Name) AC5 / *Enhanced Medium Alt Recon Surv Sys*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
AC5: *Enhanced Medium Alt Recon Surv Sys*	-	10.377	17.748	0.002	-	0.002	-	-	-	-	-	28.127
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This EMARSS RDTE funding line contains funding for Airborne Reconnaissance Low - Enhanced (ARL-E) in FY15 ($10.174 million). The remaining funds will be used for Interim Contractor Logistics Support (ICLS) to support testing of the EMARSS Variants: EMARSS-G (Constant Hawk & TACOP LiDAR); EMARSS-V (VaDER); EMARSS-M (Liberty Project Aircraft (LPA)); and EMARSS-S (Engineering and Manufacturing Development (EMD) systems.

For FY16 and beyond, the EMARSS RDTE funding line continues on 375206EH3.
For FY16 and beyond, the ARL-E RDTE funding line continues on 375206EH5.

A. Mission Description and Budget Item Justification

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's next generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. EMARSS provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS aircraft will be assigned to the U.S. Army Intelligence and Security Command's (INSCOM) Aerial Exploitation Battalions (AEB). EMARSS is an improvement over the existing Medium Altitude Reconnaissance and Surveillance System Quick Reaction Capability (MARSS QRC) in that it hosts an on board Distributed Common Ground System - Army (DCGS-A) capability, improved satellite communications, improved aircraft performance, and life cycle logistics sustainment capability.

EMARSS Payloads will consist of Mission Equipment Packages (MEP) and Processing Exploitation & Dissemination commercial derivative equipment such as, an Electro-optical/Infrared (EO/IR) sensor with Full Motion Video (FMV), a Communications Intelligence (COMINT) collection system, an Aerial Precision Geolocation (APG) system, tactical line-of-site (LOS) and beyond line-of-site (BLOS) communications suite, two Distributed Common Ground System - Army (DCGS-A) enabled operator workstations and a self-protection suite. Payloads integrated on platforms will include: niche capabilities such as Wide Area Aerial Surveillance (WAAS), Light Imaging Detection and Ranging (LiDAR) and improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar capability.

EMARSS will operate in direct support of tactical missions. EMARSS, integrating elements of the DCGS-A, will provide provide a near real-time response to Combat Forces with Intelligence, Surveillance and Reconnaissance (ISR) tasking.

The FY 2015 EMARSS funding line contains $10.174 million for the Airborne Reconnaissance Low - Enhanced (ARL-E) program. ARL-E supports the Aerial ISR 2020 Strategy which recommended replacement of the current Airborne Reconnaissance Low Multifunction (ARL-M) and migrates the current ARL sensors plus new niche sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. ARL-E procures the hardware, software, and infrastructure to rapidly install sensors which support a rapid plug and play, quick connect/disconnect, mounting system to allow the installation of various combinations of sensor-types in support of a wide-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605626A / *Aerial Common Sensor*	**Project (Number/Name)** AC5 / *Enhanced Medium Alt Recon Surv Sys*

range of theater operations. The sensor suite will consist of a COMINT subsystem capable of supporting theater net centric geo-location efforts, High Definition FMV; Improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar capability and updated mission workstations, as well as radio and data/communications architecture. ARL-E will leverage existing sensors as well as integrating and installing niche sensors to augment current capabilities. Niche capabilities include Wide Area Aerial Surveillance (WAAS), Light Imaging Detection and Ranging (LiDAR) and Hyper Spectral Imaging (HSI) sensors.

FY 2016 RDTE funding in the amount of $0.002 million provides Interim Contractor Logistics support.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: EMARSS - Product Development ***Description:*** Funding is provided for the following efforts: ***FY 2014 Accomplishments:*** Finalizes integration of prime mission equipment, software integration, and risk mitigation efforts. Partially funds an ICLS capability to support testing. ***FY 2015 Plans:*** EMARSS RDTE funds Sensor Engineering Change Proposals (ECPs) and contractor system support. Partially funds an ICLS capability to support testing. ***FY 2016 Base Plans:*** Partially funds an ICLS capability	7.177	5.474	0.002	-	0.002
Title: Support Costs ***Description:*** Support costs for matrix government, matrix contractor and PM Fixed Wing. ***FY 2014 Accomplishments:*** Support costs for matrix government, matrix contractor and PM Fixed Wing. ***FY 2015 Plans:*** Support costs for matrix government, matrix contractor and PM Fixed Wing.	0.400	0.800	-	-	-
Title: EMARSS - Test and Evaluation ***Description:*** Funding is provided for the following effort: ***FY 2014 Accomplishments:*** Delta testing and corrective actions resulting from LUT.	2.170	-	-	-	-
Title: Program Management Support	0.630	1.300	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605626A / *Aerial Common Sensor*	**Project (Number/Name)** AC5 / *Enhanced Medium Alt Recon Surv Sys*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Funding is provided for the following effort: ***FY 2014 Accomplishments:*** Continues Program Management Office (PMO) support and travel, Systems Engineering and Technical Assistance (SETA) and MITRE support. ***FY 2015 Plans:*** Continues Program Management Office (PMO) support and travel, Systems Engineering and Technical Assistance (SETA) and MITRE support.					
Title: ARL-E - Product Development ***Description:*** ARL-E RDTE in EMARSS funding line until new RDTE line can be established. ***FY 2015 Plans:*** ARL-E RDTE funds the development of a Long Range Radar prototype for ARL-E.	-	10.174	-	-	-
Accomplishments/Planned Programs Subtotals	10.377	17.748	0.002	-	0.002

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Aerial Common Sensor (ACS): *EMARSS - Aircraft Procurement (A02005)*	54.700	165.890	-	99.500	99.500	-	-	-	-	-	320.090
• EMARSS MEP/PED: *EMARSS Payloads (AZ2054)*	-	-	13.670	6.900	20.570	13.366	3.305	21.294	4.452	-	62.987
• ARL Mod: *ARL Mods (AZ2050)*	10.467	131.892	68.540	-	68.540	48.500	53.778	7.668	2.679	-	323.524
• TENCAP - TNG: *TENCAP - TNG (0605766A, Project DX9)*	4.172	2.660	0.588	-	0.588	0.769	0.543	-	-	-	8.732

Remarks

ACS - A02005 - FY 2015 Base procurement dollars in the amount of $165.890 million supports the modification and conversion of the balance of QRC systems redeploying out of Afghanistan to meet the EMARSS Capabilities Production Document (CPD).

FY 2014 A02005 OCO in the amount of $28 million procured one EMARSS-V.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605626A / *Aerial Common Sensor*	**Project (Number/Name)** AC5 / *Enhanced Medium Alt Recon Surv Sys*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

For FY 2016 and beyond, the EMARSS APA funding line continues from A02005 and splits between Project Manager Sensors - Aerial Intelligence (PM SAI) AZ2054 EMARSS Payloads and Project Manager Fixed Wing (PM FW) A02112 EMARSS SEMA. Also in FY 2016 the EMARSS Payloads AZ2054 line is established separated from ARL Mod AZ2050. Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne intelligence systems to Program Executive Officer for Aviation PEO-AVN); and overall sensor,processing, exploitation, and dissemination responsibilities to Program Executive Officer or Intelligence, Electronic Warfare, and Sensors (PEO-IEWS).

D. Acquisition Strategy

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is a Program of Record based on an Army G-3/5/7 Directed Requirement (DR) signed 11 December 2009. The program entered the acquisition process in the Engineering and Manufacturing Development (EMD) phase with a 1QFY11 contract award that was competitively awarded to a single contractor. Program completed System Design Review in 1QFY12 and began modification and integration of the aircraft in 2QFY12. Program currently has an Army validated Capabilities Production Document (CPD) and a successful Milestone C.

ARL-E portion, in the amount of $10.174 million, funds the engineering, manufacturing and development of a Long Range radar prototype to replace the current ARL Phoenix Eye to meet requirement for increased performance for ARL-E.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605626A / *Aerial Common Sensor*	Project (Number/Name) AC5 / *Enhanced Medium Alt Recon Surv Sys*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	Various	PM SAI : Aberdeen Proving Ground, MD	11.823	0.230		0.500		-		-		-	-	12.553	-
SETA Support	C/CPFF	PM SAI : Aberdeen Proving Ground, MD	5.860	0.200		0.400		-		-		-	-	6.460	-
MITRE - FFRDC Support	C/CPFF	PM SAI : Aberdeen Proving Ground, MD	3.733	0.200		0.400		-		-		-	-	4.333	-
		Subtotal	21.416	0.630		1.300		-		-		-	-	23.346	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMARSS EMD (#5 & #6 green ACFT purchase)	C/CPIF	Boeing Company : Ridley Park, PA	72.438	-		-		-		-		-	-	72.438	-
Request for Equitable Adjustment (REA)	C/FP	Boeing Company : Ridley Park, PA	7.085	-		-		-		-		-	-	7.085	-
Prime Contractor Systems Support	C/CPFF	Boeing Company : Ridley Park, PA	15.535	7.177		3.736		-		-		-	-	26.448	-
Engineering Change Proposals (ECP) for Sensors	C/CPIF	Boeing Company : Ridley Park, PA	12.966	-		1.738		-		-		-	-	14.704	-
Sensors acquisition	SS/FFP	BAE Systems : Nashua, NH	6.351	-		-		-		-		-	-	6.351	-
EMD Contract Cost Growth	Allot	Boeing Company : Ridley Park, PA	19.600	-		-		-		-		-	-	19.600	-
EMARSS - EMD 5 (currently held for potential REAs)	C/CPIF	Boeing Company : Ridley Park, PA	20.000	-		-		-		-		-	-	20.000	-
DCGS-A & Orion S/W processing on board	Various	Various : Various	6.740	-		-		-		-		-	-	6.740	-
ARL-E - Radar Development	C/TBD	TBD : TBD	0.000	-		10.174	Jun 2015	-		-		-	-	10.174	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	160.715	7.177		15.648		-		-		-	-	183.540	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Government	MIPR	Various : Various	15.187	0.200		0.400		-		-		-	-	15.787	-
Matrix Contractor Support	Various	Various : Various	3.113	0.200		0.400		-		-		-	-	3.713	-
		Subtotal	18.300	0.400		0.800		-		-		-	-	19.500	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government DT/OT, LUT	Various	Various : Various	9.590	2.170		-		0.002		-		0.002	-	11.762	-
Contractor Test (CT/DT)	C/CPIF	Various : Various	0.390	-		-		-		-		-	-	0.390	-
Test Flight Ranges	Various	Various : Various	7.517	-		-		-		-		-	-	7.517	-
Forward Operational Assessment (FOA)	MIPR	Various : Various	0.124	-		-		-		-		-	-	0.124	-
Initial Operational Test and Evaluation (IOT&E)	MIPR	Various : Various	1.000	-		-		-		-		-	-	1.000	-
Joint Test & Integration Facility (JTIF)	Various	Various : various	11.771	-		-		-		-		-	-	11.771	-
		Subtotal	30.392	2.170		-		0.002		-		0.002	-	32.564	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	230.823	10.377		17.748		0.002		-		0.002	-	258.950	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605626A / *Aerial Common Sensor*	**Project (Number/Name)** AC5 / *Enhanced Medium Alt Recon Surv Sys*

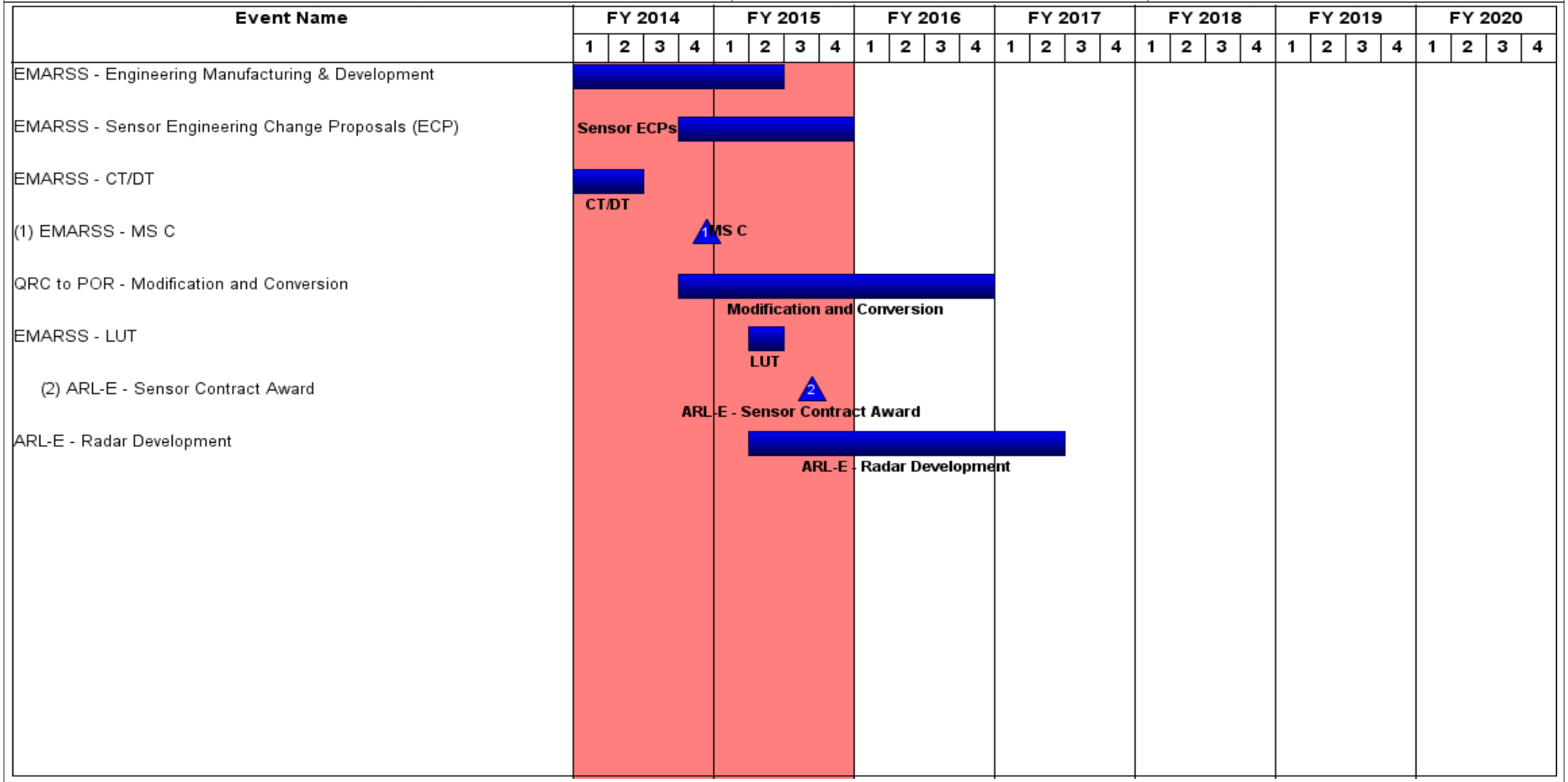

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605626A / *Aerial Common Sensor*	**Project (Number/Name)** AC5 / *Enhanced Medium Alt Recon Surv Sys*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMARSS - Engineering Manufacturing & Development	3	2011	2	2015
EMARSS - Sensor Engineering Change Proposals (ECP)	4	2014	4	2015
EMARSS - CT/DT	1	2014	2	2014
EMARSS - MS C	4	2014	4	2014
QRC to POR - Modification and Conversion	4	2014	4	2016
EMARSS - LUT	2	2015	2	2015
ARL-E - Sensor Contract Award	3	2015	3	2015
ARL-E - Radar Development	2	2015	2	2017