Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army											Date: February 2020	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305206A *I Airborne Reconnaissance Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	-	26.416	13.177	13.283	15.575	28.858	21.386	16.444	21.830	29.224	0.000	157.335
EH2: *EMARSS ADV DEV (MIP)*	-	3.205	3.218	1.998	-	1.998	2.009	2.049	5.730	18.951	0.000	37.160
EH3: *EMARSS Payloads ADV DEV (MIP)*	-	6.531	5.959	6.290	-	6.290	6.486	6.616	6.936	7.006	0.000	45.824
EH5: *ARL Payloads ADV DEV (MIP)*	-	15.980	2.000	0.999	15.575	16.574	8.495	7.779	9.164	3.267	0.000	63.259
EH7: *Guardrail Common Sensor (GRCS) Payloads (MIP)*	-	0.700	2.000	3.996	-	3.996	4.396	0.000	0.000	0.000	0.000	11.092

A. Mission Description and Budget Item Justification

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's newest generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. It provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS is assigned to the United States (U.S.) Army Intelligence and Security Command (INSCOM) Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance support to combatant commanders. EMARSS is also assigned to the United States Army Training and Doctrine Command (TRADOC) in support of training at the US Army Intelligence Center of Excellence (USAICoE). The Army Acquisition Objective for EMARSS is 36 systems, with an Army Procurement Objective of 24, to include the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT). Budget Item Justification is addressed in each Project.

Airborne Reconnaissance Low - Enhanced (ARL-E) is a worldwide self-deployable airborne Intelligence Surveillance Reconnaissance (ISR) system designed for timely, accurate, assured support to tactical forces over the full spectrum of operations. This system is a De Havilland DHC-8 aircraft replacing the DHC-7 in accordance with the Aerial ISR (AISR) 2020 Strategy. ARL-E will enhance the ARL-M sensor capability sets through the procurement of new and refurbished sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. It provides a persistent capability to include: Broad-Area Surveillance and/or Focused Stare on Target Areas of Interest (Point or Objective Targets), Electro-Optical/Infrared (EO/IR)/Full-Motion Video (FMV) , Multi-Mode Radar, Robust Communications Intelligence (COMINT), on-Board Collection, Analysis, Sensor Cross Cue and dissemination through Distributed Common Ground System-Army (DCGS-A) Enabled workstations. ARL-E will be assigned to the U.S. Army Intelligence and Security Command's Aerial ISR Brigade providing AISR support to combatant commanders. For the overall system, the Army Acquisition Objective and the Army Procurement Objective, is nine (9). The Mission Equipment Package (MEP) objective is eight (8). Budget Item Justification is addressed in each Project.

The RC-12X Guardrail Common Sensor (GRCS) is a fixed-wing, airborne COMINT and Electronic Intelligence (ELINT) collection and precision targeting location system. GRCS provides a persistent capability to detect, locate and classify/identify high value targets with a relevant degree of timeliness and accuracy. GRCS is assigned to two (2) U.S. Army INSCOM Aerial Exploitation Battalions providing Aerial Intelligence, Surveillance and Reconnaissance (AISR) support to combatant commanders. The

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army	Date: February 2020
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305206A *I Airborne Reconnaissance Systems*

Army's Acquisition Objective/Army's Procurement Objective is 19 RC-12X; seven (7) fielded to 3rd MI; and seven (7) fielded to the 204th MI, and five (5) trainers within TRADOC and INSCOM. Budget Item Justification is addressed in each Project.

GRCS is the only Army AISR system that currently provides extended range COMINT and ELINT capabilities to support long range targeting of near-peer threats in an A2AD environment.

Research Development Technology & Evaluation (RDT&E) and procurement funding currently planned will address obsolescence issues for critical SIGINT and ELINT capabilities on the GRCS platform. These investments ensure GRCS AISR support in the A2AD environment is not impacted, which would prevent critical intelligence collection at large standoff which is needed to address long range targeting of near-peer threats and maintain system relevancy.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	26.416	25.177	13.296	-	13.296
Current President's Budget	26.416	13.177	13.283	15.575	28.858
Total Adjustments	0.000	-12.000	-0.013	15.575	15.562
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-12.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.013	15.575	15.562

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH2 / *EMARSS ADV DEV (MIP)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
EH2: *EMARSS ADV DEV (MIP)*	-	3.205	3.218	1.998	-	1.998	2.009	2.049	5.730	18.951	0.000	37.160
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's newest generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. It provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS is assigned to the United States (U.S.) Army INSCOM Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance support to combatant commanders. EMARSS is also assigned to the United States Army Training and Doctrine Command (TRADOC) in support of training at the US Army Intelligence Center of Excellence (USAICoE). The Army Acquisition Objective for EMARSS is 36 systems, with an Army Procurement Objective of 24, to include the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT).

This funding line supports non-recurring engineering (NRE), development of type certificates (TC), testing, integration of Modifications in Service of Army Aerial, Intelligence, Surveillance and Reconnaissance (AISR) systems and engineering analysis/studies/structural modifications to substantially increase EMARSS (King Air B300) payload capacity and time on station. Funding provides for the integration of Department of Defense (DoD) mandated safety equipment to meet current and evolving International Standards. It also enhances aircraft communications, navigations and surveillance (CNS); aircraft survivability equipment (ASE) and the integration of the AISR mission equipment package (MEP) as well as obsolescence issues and commonality with the EMARSS Program of Record (POR) aircraft.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Non-Recurring Engineering	3.205	3.218	1.998	-	1.998
Description: This funding line supports non-recurring engineering (NRE), development of type certificates (TC), testing, integration of Modifications in Service of Army Aerial, Intelligence, Surveillance and Reconnaissance (AISR) systems and engineering analysis/studies/structural modifications to substantially increase EMARSS (King Air B300) payload capacity and time on station. Funding provides for the integration of Department of Defense (DoD) mandated safety equipment to meet current and evolving International Standards. It also enhances aircraft communications, navigations and surveillance (CNS); aircraft survivability equipment (ASE) and the integration of the AISR mission equipment package (MEP) as well as obsolescence issues and commonality with the EMARSS Program of Record (POR) aircraft.					
FY 2020 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH2 / *EMARSS ADV DEV (MIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
This funding line supported non-recurring engineering (NRE), development of type certificates (TC), testing, integration of Modifications in Service of Army Aerial, Intelligence, Surveillance and Reconnaissance (AISR) systems and engineering analysis/studies/structural modifications to substantially increase EMARSS (King Air B300) payload capacity and time on station. Funding provided for the integration of Department of Defense (DoD) mandated safety equipment to meet current and evolving International Standards. It also enhanced aircraft communications, navigations and surveillance (CNS), aircraft survivability equipment (ASE), future development for modifications in service, and the integration of the AISR mission equipment package (MEP) as well as obsolescence issues and commonality with the EMARSS Program of Record (POR) aircraft. ***FY 2021 Base Plans:*** This funding line supports NRE, development of TC, testing and integration of Army AISR systems. Funding provides for the integration of DoD mandated safety equipment to meet current and evolving International Standards. It also enhances aircraft CNS, ASE performance and the integration of the AISR MEP as well as obsolescence issues involved with the transition from QRC to POR in regards to platform survivability equipment such as the Navy AAR-47 changing to Army AAR-57, BFT to BFT-2 and the APX-123 Transponder to APX-119 Transponder. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Successfully completed prior year NRE activities. The $1.998 million in FY 2021 allows for completion of additional NRE efforts as listed in the FY 2021 Base Plan above.					
Accomplishments/Planned Programs Subtotals	3.205	3.218	1.998	-	1.998

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• A02112: *EMARSS SEMA Mods (MIP)*	60.248	43.139	2.452	26.460	28.912	1.717	1.749	2.180	2.222	Continuing	Continuing
• AZ2054: *EMARSS Payloads (MIP)*	18.809	12.146	2.174	10.000	12.174	17.757	7.911	10.511	10.813	Continuing	Continuing
• EH3: *EMARSS Payloads ADV DEV (MIP)*	6.531	5.959	6.290	-	6.290	6.486	6.616	6.936	7.006	0.000	45.824

Remarks

The EMARSS Research Development Technology & Evaluation (RDT&E) efforts are found in the following two project lines; 0305206AEH2 EMARSS ADV DEV (MIP) (Fixed Wing Project Office) and 0305206AEH3 EMARSS Payloads ADV DEV (Project Manager Sensors - Aerial Intelligence). The supporting Aircraft Procurement Army

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH2 / *EMARSS ADV DEV (MIP)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost

(APA lines are A02112 (P-1 Line #25) for Fixed Wing and AZ2054 (P-1 Line #20) for Aerial Intelligence. 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; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

D. Acquisition Strategy

The acquisition strategy, supported by the EMARSS CPD, is to design, test and field 24 systems as well as provide enhancements to the following sensor capabilities in order to maintain relevancy to the Warfighter: Electro-optical/Infrared (EO/IR)/Full Motion Video (FMV); Communications Intelligence (COMINT); Wide Area Aerial Surveillance (WAAS); Light Imaging Detection and Ranging (LiDAR) and improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar; line-of-site (LOS) and beyond line-of-site (BLOS) communications; and Processing Exploitation and Dissemination (PED) supporting two Distributed Common Ground System - Army (DCGS-A) enabled operator workstations. The EMARSS fleet of 24 systems will consist of the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH2 / *EMARSS ADV DEV (MIP)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	RO	FW PO/ PM SAI : Huntsville, AL/ Aberdeen, MD	0.104	0.272	Jan 2019	0.273	Jan 2020	0.160	Jan 2021	-		0.160	0.000	0.809	-
		Subtotal	0.104	0.272		0.273		0.160		-		0.160	0.000	0.809	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Non-Recurring Engineeering (OEM Design)/FAA Testing and Certification	SS/CPFF	Textron : Wichita, KS	-	2.933	May 2019	2.945	May 2020	1.838	May 2021	-		1.838	0.000	7.716	-
		Subtotal	-	2.933		2.945		1.838		-		1.838	0.000	7.716	N/A

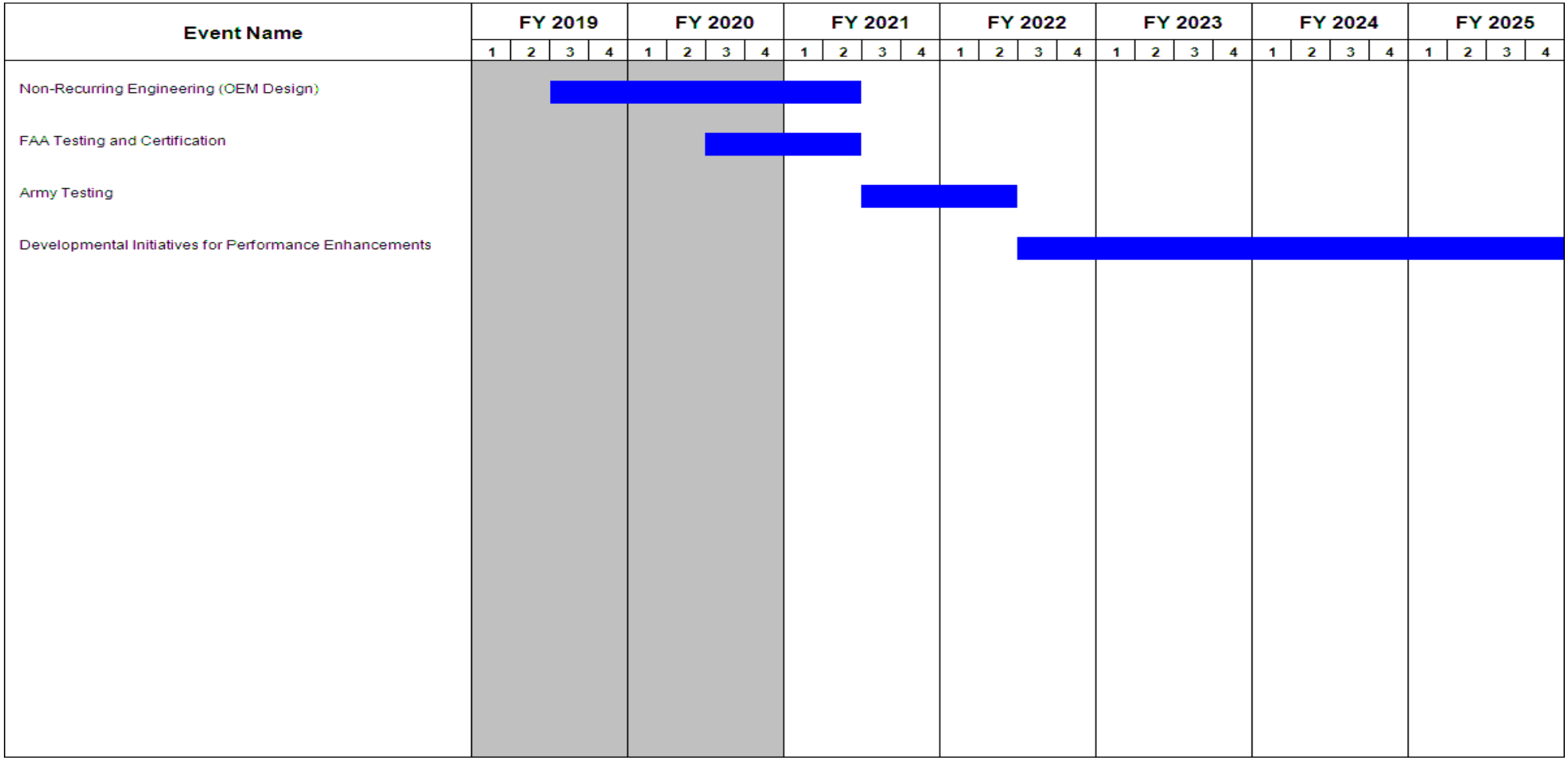
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	AFTD RTC : Eglin, AFB, FL	1.636	-		-		-		-		-	0.000	1.636	-
		Subtotal	1.636	-		-		-		-		-	0.000	1.636	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.740	3.205		3.218		1.998		-		1.998	0.000	10.161	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH2 / *EMARSS ADV DEV (MIP)*



Note

FY19 $3.205 FY20 $3.218 FY21 $1.998 FY22 $2.009 FY23 $2.049 FY24 $5.730 FY25 $18.951

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH2 / *EMARSS ADV DEV (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Non-Recurring Engineering (OEM Design)	3	2019	2	2021
FAA Testing and Certification	3	2020	2	2021
Army Testing	3	2021	2	2022
Developmental Initiatives for Performance Enhancements	3	2022	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH3 / *EMARSS Payloads ADV DEV (MIP)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
EH3: *EMARSS Payloads ADV DEV (MIP)*	-	6.531	5.959	6.290	-	6.290	6.486	6.616	6.936	7.006	0.000	45.824
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) is the Army's newest generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. It provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS is assigned to the United States (U.S.) Army Intelligence and Security Command's Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance support to combatant commanders. EMARSS is also assigned to the U.S. Army Training and Doctrine Command (TRADOC) in support of training at the US Army Intelligence Center of Excellence (USAICoE). The Army Acquisition Objective for EMARSS is 36 systems, with an Army Procurement Objective of 24, to include the following variants: eight (8) EMARSS-G (Geo-INT); four (4) EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight (8) EMARSS-M (Multi-INT); and four (4) EMARSS-S (SIGINT).

This funding line supports enhancements to the following sensor capabilities in order to maintain relevancy to the Warfighter: Communications Intelligence (COMINT); Signals Intelligence (SIGINT); Wide Area Aerial Surveillance (WAAS); Light Imaging Detection and Ranging (LiDAR) and improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) Radar; Line-Of-Site (LOS) and Beyond Line-Of-Sight (BLOS) communications; and Processing Exploitation and Dissemination (PED) supporting two Distributed Common Ground System - Army (DCGS-A) enabled operator workstations.

Fiscal Year (FY) 2021 funding in the amount of $6.290 million continues the development of sensor enhancements through SIGINT software porting and development of new SIGINT software focusing on new signal sets applicable in a near peer environment. This funding also initiates SIGINT architecture development to exploit additional signals of interest relative to MDO, and a SIGINT server leveraging development of other services and facilitating rapid and continuous integration of capabilities targeting emerging signal sets and threats. This SIGINT architecture development work continues through FY 2025.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: EMARSS - Sensor Enhancement	5.531	5.577	5.706	-	5.706
Description: Enhancement of EMARSS MDO SIGINT capabilities to decrease target identification time, increase probability of intercept, and increased signal simultaneity. Efforts include the initial development of Advanced LiDAR, software porting and analysis of design of modular open system architecture.					
FY 2020 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH3 / *EMARSS Payloads ADV DEV (MIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Completed preliminary design of Advanced LiDAR. Initiate sensor enhancements to upgrade existing EMARSS sensors. ***FY 2021 Base Plans:*** Continue sensor software updates to develop the next generation SIGINT capability and improve performance in a near peer environment to integrate capabilities developed by other programs. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Cost increase from FY 2020 to FY 2021 due to reprioritization towards MDO capabilities.					
Title: EMARSS - Sensor Engineering Support ***Description:*** Matrix engineering support for sensor enhancements. ***FY 2020 Plans:*** Continued matrix government engineering support for sensor enhancements. ***FY 2021 Base Plans:*** Continue matrix government engineering support for sensor enhancements. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Cost increased from FY 2020 to FY 2021 due to estimated increase to rates.	0.563	0.301	0.310	-	0.310
Title: Program Management Support ***Description:*** Program Management Office (PMO) support and travel, as well as Systems Engineering and Technical Assistance (SETA) support. ***FY 2020 Plans:*** Continued Program Management Office government support and travel as well as SETA support. ***FY 2021 Base Plans:*** Continue Program Management Office government support and SETA support. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Cost increased from FY 2020 to FY 2021 due to new contract award and increased support required for sensor enhancement efforts.	0.437	0.081	0.274	-	0.274
Accomplishments/Planned Programs Subtotals	6.531	5.959	6.290	-	6.290

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH3 / *EMARSS Payloads ADV DEV (MIP)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• A02112: *EMARSS SEMA Mods (MIP)*	60.248	43.139	2.452	26.460	28.912	1.717	1.749	2.180	2.222	Continuing	Continuing
• AZ2054: *EMARSS Payloads (MIP)*	18.809	12.146	2.174	10.000	12.174	17.757	7.911	10.511	10.813	Continuing	Continuing
• EH2: *EMARSS ADV DEV (MIP)*	3.205	3.218	1.998	-	1.998	2.009	2.049	5.730	18.951	0.000	37.160

Remarks

The EMARSS Research Development Technology & Evaluation (RDT&E) efforts are found in the following two (2) project lines; 0305206AEH2 EMARSS ADV DEV (MIP) (Fixed Wing Project Office) and 0305206AEH3 EMARSS Payloads ADV DEV (Project Manager Sensors - Aerial Intelligence). The supporting procurement lines are A02112 and AZ2054. 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 and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

D. Acquisition Strategy

The acquisition strategy, supported by the EMARSS CPD, is to provide enhancements to the following sensor capabilities in order to maintain relevancy to the Warfighter: EO/IR FMV; COMINT; WAAS; LiDAR and improved SAR/MTI radar; LOS and BLOS communications; and PED supporting two DCGS-A enabled operator workstations. The EMARSS fleet of 24 systems consists of the following variants: eight EMARSS-G (Geo-INT); four EMARSS-V (Vehicle and Dismount Exploitation Radar, VaDER); eight EMARSS-M (Multi-INT); and four EMARSS-S (SIGINT).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH3 / *EMARSS Payloads ADV DEV (MIP)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	C/CR	PEO IEW&S, PM SAI : APG, MD	0.390	0.437	Jan 2019	0.081	Nov 2019	0.274	Nov 2020	-		0.274	Continuing	Continuing	-
		Subtotal	0.390	0.437		0.081		0.274		-		0.274	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LiDAR sensor enhancement	SS/CPFF	JHU APL : Laurel, MD	1.500	-		-		-		-		-	0.000	1.500	-
AWAPSS sensor enhancement	C/CPIF	BAE : Nashua, CT	0.200	-		-		-		-		-	0.000	0.200	-
SIGINT sensor enhancement	C/CPFF	CACI/Boeing : APG, MD	0.114	-		-		-		-		-	0.000	0.114	-
SIGINT sensor enhancement	C/CPFF	Lockheed Martin Integrated Systems : Marlton, NJ	0.948	-		-		-		-		-	0.000	0.948	-
Advanced LiDAR Development	SS/CPFF	Johns Hopkins University Applied Physics Laboratory, LLC : Laurel, Md	1.893	5.531	Dec 2018	0.895	Dec 2019	-		-		-	0.000	8.319	-
SIGINT sensor enhancement	C/CPFF	AASKI : Tinton Falls, NJ	-	-		4.682	Feb 2020	5.706	Dec 2020	-		5.706	Continuing	Continuing	-
		Subtotal	4.655	5.531		5.577		5.706		-		5.706	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Government Engineering Support	MIPR	USACERDEC, I2WD : APG, MD	0.390	-		0.301	Nov 2019	0.310	Dec 2020	-		0.310	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH3 / *EMARSS Payloads ADV DEV (MIP)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	BAH : APG, MD	0.213	0.563	Jan 2019	-		-		-		-	0.000	0.776	-
		Subtotal	0.603	0.563		0.301		0.310		-		0.310	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Government Testing	MIPR	CFA : Lakehurst, NJ	0.125	-		-		-		-		-	0.000	0.125	-
		Subtotal	0.125	-		-		-		-		-	0.000	0.125	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.773	6.531		5.959		6.290		-		6.290	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH3 / *EMARSS Payloads ADV DEV (MIP)*

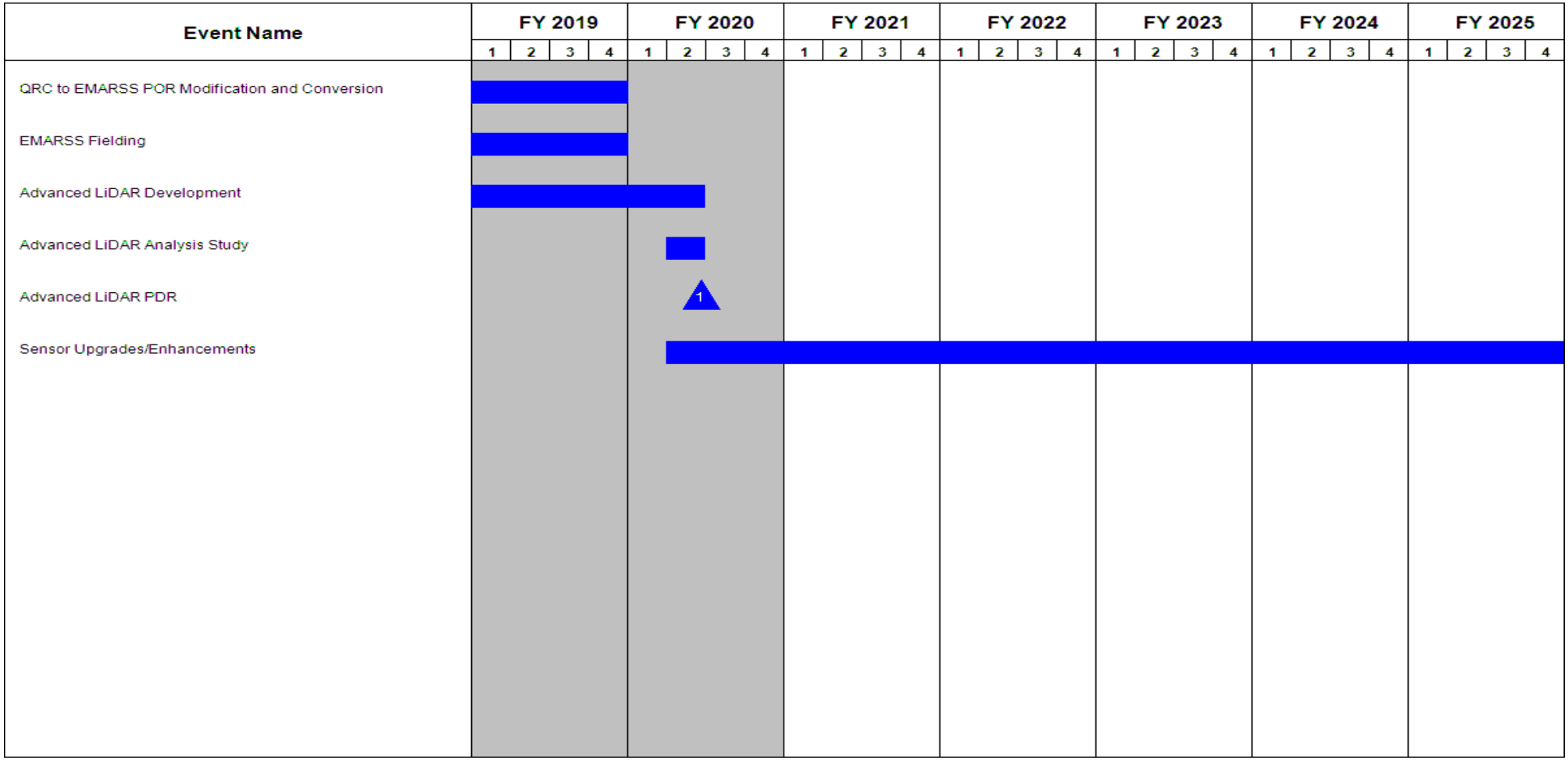


Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH3 / *EMARSS Payloads ADV DEV (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
QRC to EMARSS POR Modification and Conversion	2	2015	4	2019
EMARSS Fielding	3	2017	4	2019
Advanced LiDAR Development	2	2018	2	2020
Advanced LiDAR Analysis Study	2	2020	2	2020
Advanced LiDAR PDR	2	2020	2	2020
Sensor Upgrades/Enhancements	2	2020	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH5 / *ARL Payloads ADV DEV (MIP)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
EH5: *ARL Payloads ADV DEV (MIP)*	-	15.980	2.000	0.999	15.575	16.574	8.495	7.779	9.164	3.267	0.000	63.259
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Airborne Reconnaissance Low - Enhanced (ARL-E) is a worldwide self-deployable airborne Intelligence Surveillance Reconnaissance (ISR) system designed for timely, accurate, assured support to tactical forces over the full spectrum of operations. This system is a De Havilland DHC-8 aircraft replacing the DHC-7 IAW the Aerial ISR (AISR) 2020 Strategy. ARL-E will enhance the ARL-M sensor capability sets through the procurement of new and refurbished sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. It provides a persistent capability to include: Broad-Area Surveillance and/or Focused Stare on Target Areas of Interest (Point or Objective Targets), Electro-Optical/Infrared (EO/IR)/Full-Motion Video (FMV) , Multi-Mode Radar, Robust Communications Intelligence (COMINT), on-Board Collection, Analysis, Sensor Cross Cue and dissemination through Distributed Common Ground System-Army (DCGS-A) Enabled workstations. ARL-E will be assigned to the United States (U.S.) Army Intelligence and Security Command's Aerial ISR Brigade providing AISR support to combatant commanders. For the overall system, the Army Acquisition Objective and the Army Procurement Objective, is nine. The Mission Equipment Package (MEP) objective is eight.

Fiscal Year (FY) 2021 Base funding of $16.575 million will fund the development of the Long Range Radar Electronic Protection Measure software which will allow the Long Range Radar to support the warfighter in a contested electromagnetic spectrum. This funding line also continues the new signal enhancement development effort to complete Signal 3 and begins the development of software to enhance the COMINT collection capabilities with the lab and flight test for Signal 5 to meet the requirements in the ARL-E CPD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: New Signals (COMINT/Software Upgrades)	15.980	2.000	0.999	15.575	16.574
Description: To develop software for Signals 1, 2, 3, 4, 5, and 6.					
FY 2020 Plans: Fiscal Year (FY) 2020 OCO funding of $2.000 million continued the new signal enhancement development effort to develop software to enhance the COMINT collection capabilities to see if it meets the requirements in the ARL-E CPD. This funding line supported continued software development to enhance COMINT collection capabilities to effectively prosecute high priority and emerging modern signal emitters.					
FY 2021 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH5 / *ARL Payloads ADV DEV (MIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
FY 2021 Base funding of $0.999 million will continue to fund the new signal enhancement development effort to complete Signal 3. This funding line supports continued software development to enhance COMINT collection capabilities to effectively prosecute high priority and emerging modern signal emitters. ***FY 2021 OCO Plans:*** FY 2021 OCO funding of $15.575 million will fund the development of the Electronic Protection Measure software which will allow the sensors to support the warfighter in a contested electromagnetic spectrum. This funding line also continues the new signal enhancement development effort to complete Signal 3 and begins the development of software to enhance the COMINT collection capabilities with the lab and flight test for Signal 5 to meet the requirements in the ARL-E CPD. This funding line supports continued software development to enhance COMINT collection capabilities to effectively prosecute high priority and emerging modern signal emitters. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to FY 2021 Unfunded Requirements (UFRs) funded for New Signals and Radar Electronic Protection Measure efforts.					
Accomplishments/Planned Programs Subtotals	15.980	2.000	0.999	15.575	16.574

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• AZ2050: *ARL PAYLOADS (MIP)*	86.029	77.895	33.561	45.000	78.561	39.218	36.046	18.324	27.834	Continuing	Continuing
• DX9: *National Integration To Tactical Systems(MIP)*	9.060	4.490	4.219	-	4.219	5.178	4.421	4.533	6.709	0.000	38.610
• A02109: *A02109*	12.103	12.294	9.796	-	9.796	-	-	-	-	0.000	34.193
• A02110: *ARL SEMA Mods (MIP)*	7.522	6.566	9.598	-	9.598	10.338	5.577	6.211	6.422	Continuing	Continuing

Remarks

The ARL-E Research Development Technology & Evaluation (RDT&E) efforts are found in the following two (2) project lines; 0305206AEH4 ARL ADV DEV (MIP) (Fixed Wing Project Office) and 0305206AEH5 ARL Payloads ADV DEV (Project Manager Sensors - Aerial Intelligence). The supporting procurement lines are A02110 and 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; and overall sensor, processing, exploitation, and dissemination responsibilities to Program Executive Officer for Intelligence, Electronic Warfare, and Sensors.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH5 / *ARL Payloads ADV DEV (MIP)*

D. Acquisition Strategy

ARL-E will enhance the ARL-M sensor capability sets through the procurement of new and refurbished sensors to meet the ARL-E CPD requirements. It provides a persistent capability to include: Broad-Area Surveillance and/or Focused Stare on Target Areas of Interest (Point or Objective Targets), EO/IR FMV, COMINT, on-Board Collection, Analysis, Sensor Cross Cue and dissemination through DCGS-A Enabled workstations. This includes software development to enhance COMINT collection capabilities. The software will be added to existing COMINT systems to effectively prosecute high priority and emerging modern signal emitters.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH5 / *ARL Payloads ADV DEV (MIP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	TBD	PM SAI : Aberdeen Proving Ground, MD	-	0.260		-		-		-		-	0.000	0.260	-
		Subtotal	-	0.260		-		-		-		-	0.000	0.260	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
New Signals (COMINT/ Software Upgrades)	C/CPFF	Boeing Argon : Mountain View, CA	26.938	12.030		2.000	Jan 2020	0.999	Jan 2021	11.576	Jan 2021	12.575	0.000	53.543	-
Radar Electronic Protection Measures	SS/CPFF	Northrup Grumman : Baltimore, MD	-	-		-		0.000		1.799	Nov 2020	1.799	0.000	1.799	-
		Subtotal	26.938	12.030		2.000		0.999		13.375		14.374	0.000	55.342	N/A

Remarks

New Signals Contract: W56KGY-16-D-0001/ 0006. Fiscal Year (FY) 2021 Base funding of $0.999 million continues the new signal enhancement development effort for Signal 3. This funding line supports continued software development to enhance COMINT collection capabilities to effectively prosecute high priority and emerging modern signal emitters.

New Signals Contract: W56KGY-16-D-0001/ 0006. Fiscal Year (FY) 2021 OCO funding of $11.576 million continues the new signal enhancement development effort for Signal 3 and starts the Signal 5 software development to enhance the COMINT collection capabilities. This funding line supports continued software development to enhance COMINT collection capabilities to effectively prosecute high priority and emerging modern signal emitters.
spectrum.

Radar Development Contract: W56KGY-19-R-LRRV. Fiscal Year (FY) 2021 OCO funding of $1.799 million starts the development of Radar Electronic Protection Measure software in a contested electromagnetic spectrum.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH5 / *ARL Payloads ADV DEV (MIP)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support to LRR/New Signals (COMINT/Software Upgrades)	C/CPFF	Boeing Argon/ Northrup Grumman : Mountain View, CA/ Baltimore, MD	7.000	3.690		-		0.000		2.000	Jan 2021	2.000	0.000	12.690	-
Radar Electronic Protection Measures	SS/CPFF	Northrup Grumman : Batlimore, MD	-	-		-		0.000		0.200	Nov 2020	0.200	0.000	0.200	-
		Subtotal	7.000	3.690		-		0.000		2.200		2.200	0.000	12.890	N/A

Remarks

New Signals Contract: W56KGY-16-D-0001/ 0006. Fiscal Year (FY) 2021 OCO funding of $2.000 million completes the lab and flight test for Signal 3 to meet the requirements in the ARL-E CPD.
Radar Development Contract: W56KGY-19-R-LRRV. Fiscal Year (FY) 2021 OCO funding of $0.200 million starts the lab and flight test for Radar Electronic Protection Measure software in a contested electromagnetic spectrum.

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.938	15.980		2.000		0.999		15.575		16.574	0.000	68.492	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH5 / *ARL Payloads ADV DEV (MIP)*

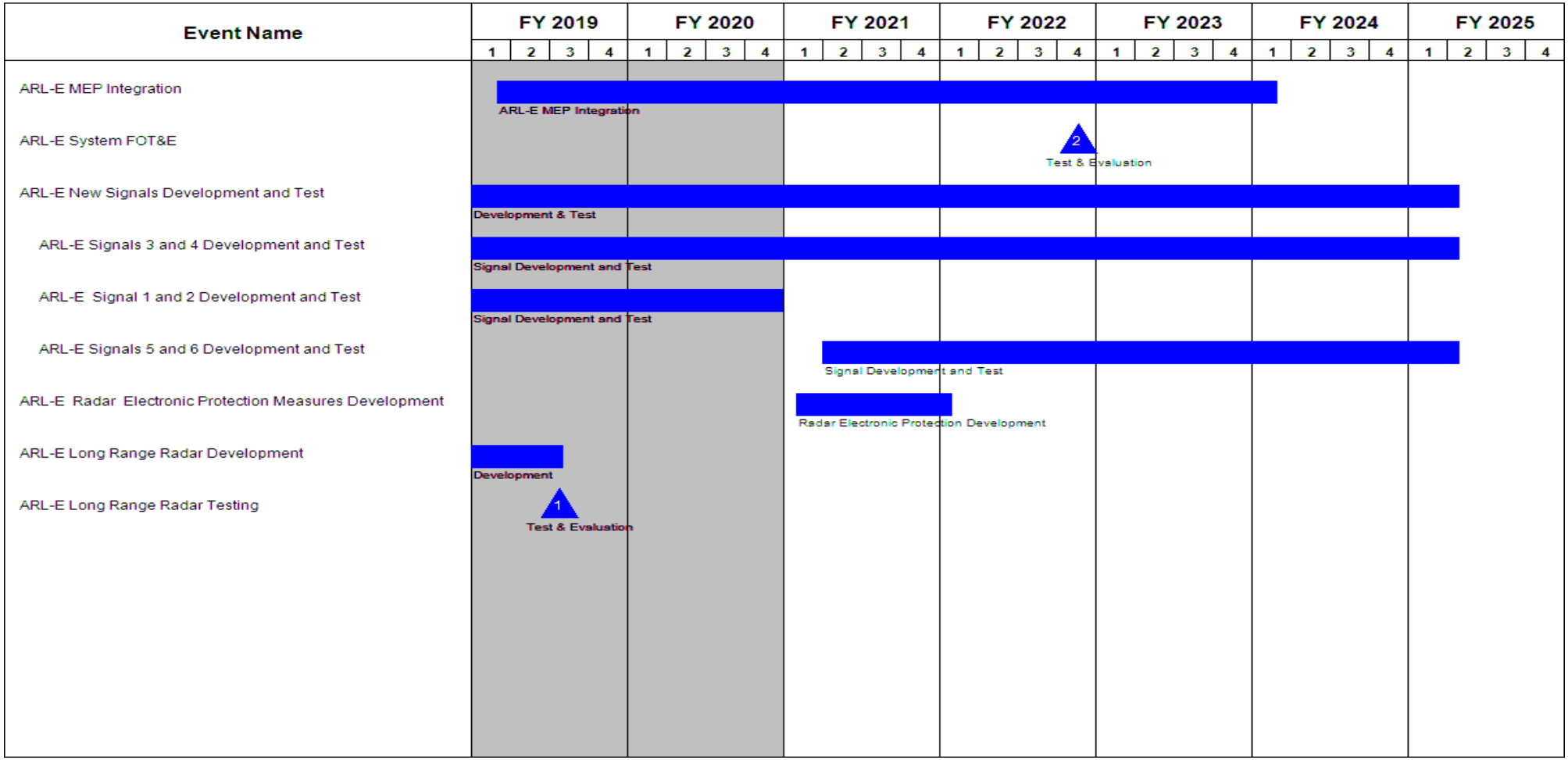


Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH5 / *ARL Payloads ADV DEV (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ARL-E MEP Contract Award	1	2016	1	2016
ARL-E MEP Integration	1	2016	1	2024
ARL-E System FOT&E	4	2022	4	2022
ARL-E New Signals Development and Test	2	2016	2	2025
ARL-E Signals 3 and 4 Development and Test	2	2016	2	2025
ARL-E Signal 1 and 2 Development and Test	4	2017	4	2020
ARL-E Signals 5 and 6 Development and Test	2	2021	2	2025
ARL-E Radar Electronic Protection Measures Development	1	2021	1	2022
ARL-E Long Range Radar Development	4	2017	3	2019
ARL-E Long Range Radar Testing	3	2019	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH7 / *Guardrail Common Sensor (GRCS) Payloads (MIP)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
EH7: *Guardrail Common Sensor (GRCS) Payloads (MIP)*	-	0.700	2.000	3.996	-	3.996	4.396	0.000	0.000	0.000	0.000	11.092
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Guardrail Common Sensor (GRCS) is an airborne Signals Intelligence (SIGINT) Collection and Location System capable of providing Tactical Commanders Near-Real Time intelligence. It provides a persistent capability to detect, locate and classify/identify critical targets with a relevant degree of timeliness and accuracy. GRCS is assigned to two (2) United States (U.S.) Army Intelligence and Security Command's Aerial Exploitation Battalions, providing Aerial Intelligence, Surveillance and Reconnaissance (AISR) support to combatant commanders. In accordance with the Army's AISR 2020 strategy, the Army's Acquisition Objective/Army's Procurement Objective (AAO/APO) is 19 RC-12X; seven (7) fielded to 3rd MI BN; seven (7) fielded to the 204th MI BN, and five (5) pilot trainers to support Force Generation. The five (5) trainers are not equipped with Primary Mission Equipment (PME).

GRCS Fiscal Year (FY) 2021 Research Development Technology & Evaluation (RDT&E) funding request in the amount of $3.996 million supports GRCS advanced signal enhancement efforts, development and testing of the signal enhancement infrastructure for GRCS updated SIGINT sensor capabilities. GRCS is the only Army AISR system that currently provides extended range COMINT and ELINT capabilities to support long range targeting of near-peer threats in an A2AD environment. RDTE and procurement funding currently planned will address obsolescence issues for critical SIGINT and ELINT capabilities on the GRCS platform. These investments ensure GRCS AISR support in the A2AD environment is not impacted, which would prevent critical intelligence collection at large standoff which is needed to address long range targeting of near-peer threats and maintain system relevancy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: USFK ONS Development/JICD 4.2 Compliance ***Description:*** Development and Testing for Signal Enhancement efforts.	0.700	-	-	-	-
Title: GRCS SIGINT Sensor Upgrades ***Description:*** Funding line supports GRCS advanced signal enhancement efforts and software development and testing of signal enhancement infrastructure for GRCS updated SIGINT sensor development. ***FY 2020 Plans:*** FY 2020 funding line supported GRCS advanced signal enhancement efforts and software development and testing of signal enhancement infrastructure for GRCS updated SIGINT sensor development. ***FY 2021 Base Plans:***	-	2.000	3.674	-	3.674

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH7 / *Guardrail Common Sensor (GRCS) Payloads (MIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
FY 2021 funding line supports GRCS advanced signal enhancement efforts and software development and testing of signal enhancement infrastructure for GRCS updated SIGINT sensor development. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The FY 2020 to FY 2021 increase of $2.0 million to $4.0 million is due to an increase in efforts for SIGINT upgrades.					
Title: Program Management Support ***Description:*** Funds support program management office (PMO) efforts including travel. ***FY 2021 Base Plans:*** This FY 2021 funding will support PMO efforts including travel. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The FY 2020 to FY 2021 increase of is due to an acceleration of SIGINT testing.	-	-	0.322	-	0.322
Accomplishments/Planned Programs Subtotals	0.700	2.000	3.996	-	3.996

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• AZ2052: *Guardrail Payloads (MIP)*	23.246	25.408	0.129	25.740	25.869	18.979	-	-	26.010	0.000	119.512

Remarks

D. Acquisition Strategy

The acquisition strategy is to address obsolescence by providing advanced signal enhancement efforts, software development and testing to the GRCS SIGINT Sensors to extend the useful life through FY 2028. Existing PM SAI contracts to be leveraged.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0305206A / *Airborne Reconnaissance Systems*	Project (Number/Name) EH7 / *Guardrail Common Sensor (GRCS) Payloads (MIP)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USFK ONS Development/ JICD 4.2 Compliance	C/CPFF	PEO IEW&S : Aberdeen Proving Ground, MD	-	0.700	Jan 2019	-		-		-		-	0.000	0.700	0.700
Program Management Support	C/Various	Various : Varous	-	-		-		0.322	Dec 2020	-		0.322	0.000	0.322	-
		Subtotal	-	0.700		-		0.322		-		0.322	0.000	1.022	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GRCS SIGINT Sensor Enhancements	C/Various	PEO IEW&S : Aberdeen Proving Ground, MD	-	-		2.000	Mar 2020	3.674	Dec 2020	-		3.674	0.000	5.674	2.000
		Subtotal	-	-		2.000		3.674		-		3.674	0.000	5.674	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.700		2.000		3.996		-		3.996	0.000	6.696	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH7 / *Guardrail Common Sensor (GRCS) Payloads (MIP)*

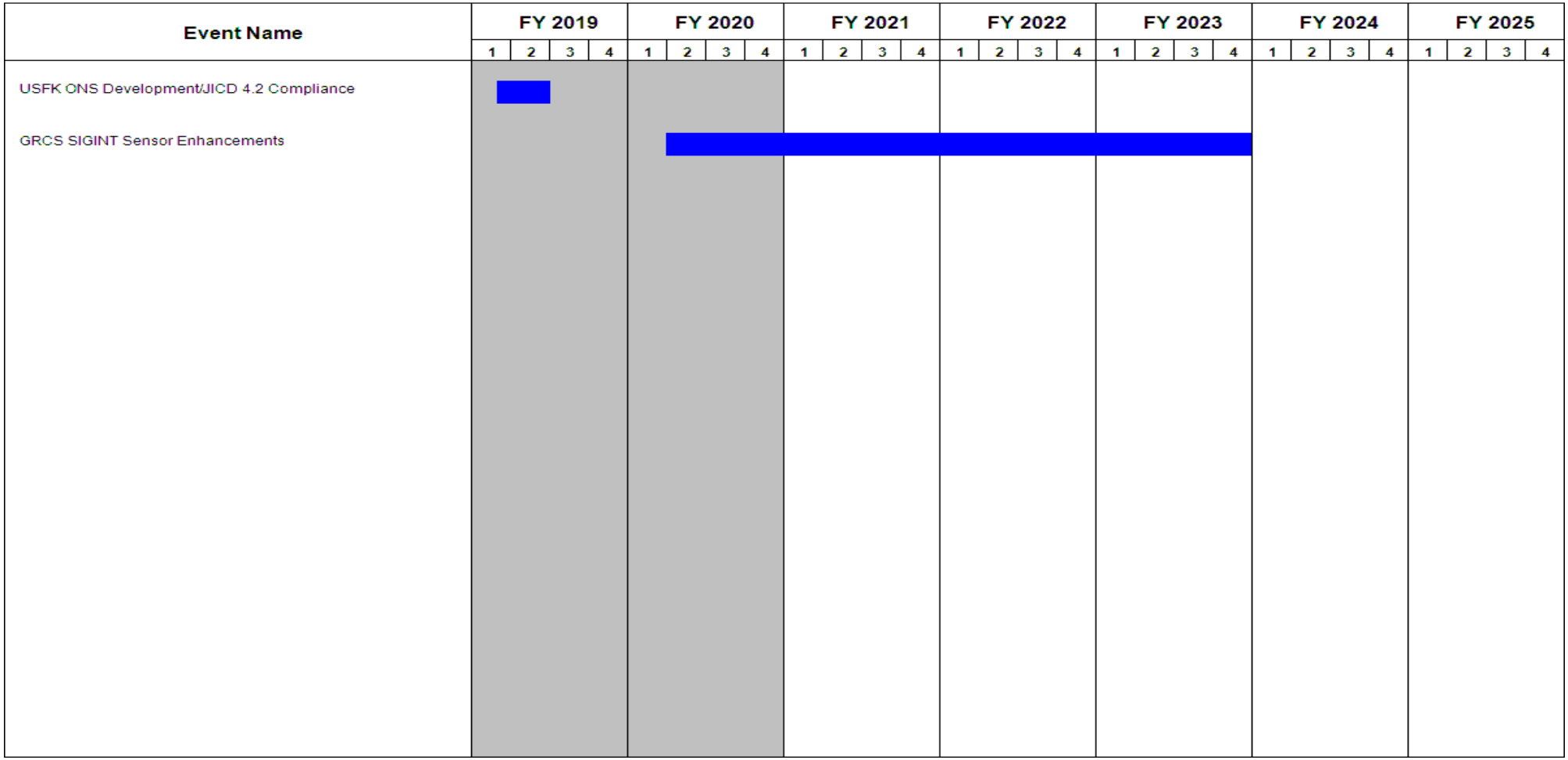


Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0305206A / *Airborne Reconnaissance Systems*	**Project (Number/Name)** EH7 / *Guardrail Common Sensor (GRCS) Payloads (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
USFK ONS Development/JICD 4.2 Compliance	1	2019	2	2019
GRCS SIGINT Sensor Enhancements	2	2020	4	2023

Note

JICD: Joint Interface Control Document
GRCS SIGINT: Guardrail Common Sensor Signals Intelligence