Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force											Date: February 2018	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	-	13.465	4.450	175.334	0.000	175.334	184.401	136.743	66.459	67.979	Continuing	Continuing
674818: *Imaging and Targeting Support*	-	0.000	0.000	20.295	0.000	20.295	29.729	51.402	51.092	51.411	Continuing	Continuing
674820: *Sensor Development*	-	0.000	0.000	43.681	0.000	43.681	48.734	9.191	0.000	0.000	0.000	101.606
675092: *JTC/SIL MUSE*	-	3.841	3.429	3.454	0.000	3.454	3.521	3.580	3.653	3.720	Continuing	Continuing
675291: *Gorgon Stare*	-	9.624	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.624
676025: *Data Compression*	-	0.000	0.000	4.879	0.000	4.879	6.935	9.545	11.714	12.848	Continuing	Continuing
676031: *Dismount Detection RADAR*	-	0.000	1.021	103.025	0.000	103.025	95.482	63.025	0.000	0.000	Continuing	Continuing

Note

This program, BA 7, PE 0305206F, project 674820, Advanced Synthetic Aperture Radar System (ASARS) 2B, is a new start.

In FY 2019, Program 0305208F, Distributed Common Ground/Surface Systems, Project 674826, Automated Target Recognition (ATR) effort was transferred to Program 0305206F, Airborne Reconnaissance Systems (ARS), Project 674818 Imaging and Targeting Support, in order to align funding with like ATR development efforts.
In FY 2019 funding transferred from Program 0604257F Advanced Technology And Sensors (Project 646025 Data Compression and Project 644818 Imaging and Targeting Support) to Program 0305206F Airborne Reconnaissance Systems, to continue maturing existing projects (Advanced Synthetic Aperture Radar System (ASARS), Reduction of Data Using Compression Enhancement (RDUCE), Detection Removal and Characterization Operation (DRACO), Sensor Open System Architecture (SOSA) and Airborne Sensors for ISR (ASI) within that program.
In FY 2019 funding was added to Project 676031 to support Dismount Radar efforts.

A. Mission Description and Budget Item Justification

The purpose of Airborne Reconnaissance System (ARS)Program is to develop, mature, demonstrate, and rapidly transition next-generation, persistent, wide area surveillance and common imagery reconnaissance sensor capabilities (active and passive systems), including sensor data processing, for multiple airborne platforms, as well as sensor products to aid in rapid targeting (geolocation models, sensor based exploitation tools, sensor networking capabilities). It provides for modeling/ simulation, training and systems engineering. This program also coordinates the development of common collection, processing, and dissemination solutions for near real time Intelligence, Surveillance, and Reconnaissance (ISR). A portion of the funding in Project 674818 will be distributed in priority order, as supported by Airborne Sensors for ISR (ASI) efforts and set by the Geospatial Intelligence (GEOINT) Capabilities Working Group (GCWG), for the goal of building a comprehensive GEOINT capability for the USAF. On an annual basis, developmental technologies are reviewed against warfighter capabilities within the Challenging Targets Initial Capabilities Document and requirements based on strategic roadmaps and the results of the ASI efforts. Efforts advancing the technological maturity of promising sensors and

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force	Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*

processing capabilities are reviewed and prioritized into a recommended list for senior executive direction to implement in the coming year. ASARS 2B efforts include, but are not limited to, development, design, fabrication, integration, demonstration, test and transition of high altitude, deep look ISR radar.
Activities also include studies and analysis to support both current program planning and execution and future program planning. Additionally, funding covers GCWG Secretariat to manage GCWG planning, processes, and establish an Air Force GEOINT architecture.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	3.841	4.450	4.516	0.000	4.516
Current President's Budget	13.465	4.450	175.334	0.000	175.334
Total Adjustments	9.624	0.000	170.818	0.000	170.818
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	9.624	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	170.818	0.000	170.818

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2017	FY 2018
Project: 675291: *Gorgon Stare*		
Congressional Add: *Wide-Area Motion Imagery*	9.624	0.000
Congressional Add Subtotals for Project: 675291	9.624	0.000
Congressional Add Totals for all Projects	9.624	0.000

Change Summary Explanation

- In FY 2019, the $170.8 million increase accounts for the transfer of funds from other programs for the ATR, ASARS/High-Alt Synthetic Aperture Radar (SAR), DRACO, RDUCE and SOSA efforts, as well as the addition of funding for Dismount Radar (Project 676031).

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 674818 / *Imaging and Targeting Support*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
674818: *Imaging and Targeting Support*	-	0.000	0.000	20.295	0.000	20.295	29.729	51.402	51.092	51.411	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2019, Program 0305208F, Distributed Common Ground/Surface Systems, Project 674826, Automated Target Recognition (ATR) effort was transferred to Program 0305206F, Airborne Reconnaissance Systems (ARS), Project 674818 Imaging and Targeting Support, in order to align funding with like ATR development efforts.

A. Mission Description and Budget Item Justification

The purpose of the Imaging and Targeting Support (I&TS) / Agile ISR is to develop, mature, demonstrate, and rapidly transition next-generation, persistent, wide area surveillance and common imagery reconnaissance sensor capabilities (active and passive systems), including sensor data processing, for multiple airborne platforms, as well as sensor products to aid in rapid targeting (geolocation models, sensor-based exploitation tools, sensor networking capabilities).

Developmental efforts pursued include: improved sensor capabilities such as hyperspectral imagery (HSI), measurement and signature intelligence, polarimetric imaging, ground moving target indication (GMTI), maritime search/track, Inverse SAR, foliage penetration and additional radar, electro-optical, nuclear event detection, and other modalities; increased geolocation accuracy; increased dismount detection capability; advanced sensor data correlation; automated target detection; network centric warfare; and other ISR and associated planning and direction; collection; processing and exploitation; analysis and production; and dissemination capabilities. These efforts are intended to reduce both target search and kill chain timelines as well as supporting traditional intelligence activities. This project will also increase interoperability by developing common standards and interfaces.

The funds in this project are distributed in priority order, as supported by the Challenging Targets Initial Capabilities Document and set by the GCWG, for the goal of building a comprehensive GEOINT capability for the USAF. On an annual basis, developmental technologies are reviewed against warfighter capabilities and requirements based on strategic roadmaps and the results of the ASI AoA as prefaced in the Challenging Targets Initial Capabilities Document. Efforts advancing the technological maturity of promising sensors and processing capabilities are reviewed and prioritized into a recommended list for senior executive direction to implement in the coming year. ASARS 2B efforts include but are not limited to development, design, fabrication, integration, demonstration, test, and transition of high altitude, deep look ISR radar.

Inclusive in I&TS is the Distributed Common Ground/Surface Systems Automated Target Recognition (ATR) effort to further mature a robust capability to detect all classes of targets through camouflage.

Activities also include studies and analysis to support both current program planning and execution and future program planning. This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674818 / *Imaging and Targeting Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Agile ISR	0.000	0.000	6.372	-	6.372
Description: Mold current and future ISR into a platform agnostic, non-proprietary, autonomous Multi-INT fusion and cross cuing solution that is designed based on mission requirements. Sensors will have to penetrate up to highly contested domains and survive to operate. This project will also increase interoperability by developing common standards and interfaces for mission and sensor systems. Through the AoA execution, the solution set will improve requirements and the development path for High Altitude SAR (ASARS), Next Generation Sensors, DRACO, SOSA, as well as other GCWG approved projects. ***FY 2018 Plans:*** - FY 2018 activities are reported under PE 0604257F, Project 644818, Imaging and Targeting Support. ***FY 2019 Base Plans:*** -Will complete AoA, demonstrate a Tech Maturation and Risk Reduction (TMRR) contract, and begin M&S work to mold current and future ISR into a platform agnostic, non-proprietary, autonomous Multi-INT fusion and cross cuing solution that is designed based on mission requirements. This includes but not limited to Next Generation Sensors, Detection Removal and Characterization Operation (DRACO), Sensor Open System Architecture (SOSA), and other GCWG approved projects. -Will utilize ASI AoA and its prioritized list of current and future sensor combinations multiple CDD development will begin. -Will increase interoperability by developing common standards and interfaces. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** - In FY 2019 funding increase was due to effort transferred from Program 0604257F, Project 644818, Imaging and Targeting Support.					
Title: ASARS 2B	-	0.000	13.923	-	13.923
Description: Designed/fabricated/integrated/demonstrate/test/transition deep look high altitude synthetic aperture radar. Includes total government and contractor costs for this project. ***FY 2018 Plans:*** - FY 2018 activities are reported under Program 0604257F, Project 644818, Imaging and Targeting Support. ***FY 2019 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674818 / *Imaging and Targeting Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Will continue to develop/design/fabricate/integrate/demonstrate/test/rapidly transition deep look high altitude ISR radar capabilities ***FY 2018 to FY 2019 Increase/Decrease Statement:*** - In FY 2019 funding increase was due to effort transferred from Program 0604257F, Project 644818, Imaging and Targeting Support.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	20.295	-	20.295

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• RDTE 07 PE 0305202F: *Dragon U-2 (JMIP)*	37.217	14.714	0.520	-	0.520	0.550	1.840	3.920	0.000	0.000	58.761
• RDTE 04 PE 0604257F: *Advanced Technology and Sensors*	34.818	68.719	43.818	-	43.818	69.455	55.222	56.234	58.553	Continuing	Continuing

Remarks

A portion of the funding within the U-2 RDT&E line will be used to advance ASARS design, development, test and demonstration.

D. Acquisition Strategy

Imaging and Targeting Support and Agile ISR efforts are prioritized on an annual basis by the GCWG, in accordance with the validated gaps in the Challenging Targets Initial Capabilities Document. Resulting funded efforts are then contracted for and/or executed by either various program offices, laboratories, industry, and/or other government agencies.

ASARS / High Altitude SAR technology maturation is conducted by Air Force Life Cycle Management Center/Intelligence, Surveillance, and Reconnaissance and Special Operations Forces (AFLCMC/WIN), in conjunction and cooperation with AFLCMC/HBG (Robins AFB) for flight test support.

Acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods, including the use of engineering change proposals to modify existing contracts and new contracts that were awarded both competitively or on a sole source basis.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674818 / *Imaging and Targeting Support*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DRACO	SS/CPFF	Lockheed Martin : King of Prussisa, PA	-	-		-		2.883	Nov 2018	-		2.883	Continuing	Continuing	2.883
ASARS 2B	TBD	TBD : TBD	-	-		-		11.050	Aug 2019	-		11.050	Continuing	Continuing	14.800
Other Tech Efforts (prioritized by GCWG)	Various	Various : Various	-	-		-		1.081	Dec 2018	-		1.081	Continuing	Continuing	-
		Subtotal	-	-		-		15.014		-		15.014	Continuing	Continuing	N/A

Remarks

ASARS 2B and DRACO, FY 2017 and FY 2018 contract efforts reported under PE 0604257F, project 644818.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA: Other Govt Cost	SS/T&M	Various : Dayton, OH	-	-		-		5.281	Nov 2018	-		5.281	Continuing	Continuing	-
		Subtotal	-	-		-		5.281		-		5.281	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		20.295		-		20.295	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674818 / *Imaging and Targeting Support*

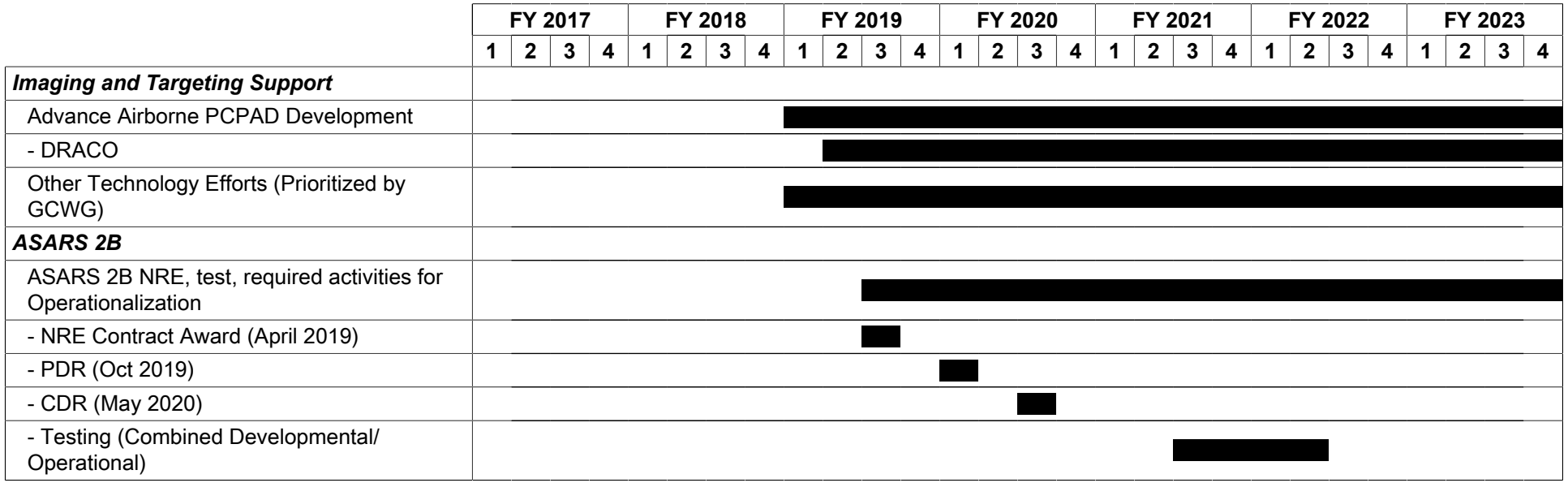

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674818 / *Imaging and Targeting Support*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Imaging and Targeting Support				
Advance Airborne PCPAD Development	1	2019	4	2023
- DRACO	2	2019	4	2023
Other Technology Efforts (Prioritized by GCWG)	1	2019	4	2023
ASARS 2B				
ASARS 2B NRE, test, required activities for Operationalization	3	2019	4	2023
- NRE Contract Award (April 2019)	3	2019	3	2019
- PDR (Oct 2019)	1	2020	1	2020
- CDR (May 2020)	3	2020	3	2020
- Testing (Combined Developmental/Operational)	3	2021	2	2022

Note

In FY 2017 and FY 2018, PE 0305206F, Advanced Reconnaissance Systems, Project 674818, Imaging and Targeting Support efforts were reported under PE 0604257F, Advanced Technology and Sensors, Project 644818, Imaging and Targeting Support.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 674820 / *Sensor Development*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
674820: *Sensor Development*	-	0.000	0.000	43.681	0.000	43.681	48.734	9.191	0.000	0.000	0.000	101.606
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 7, PE 0305206F, project 674820, Advanced Synthetic Aperture Radar System (ASARS) 2B, is a new start.

In FY2019 funding was added to Project 674820 to support ASARS2B efforts.

A. Mission Description and Budget Item Justification

The purpose of this effort is to complete ASARS-2B technology demonstration non-recurring engineering,and test activities in preparation for follow-on production/ fielding. These efforts will consist of non-recurring engineering, fabrication, integration, as well as testing of the ASARS-2B radar system based upon high altitude ISR radar system requirements in the U-2 Operational Requirements Document and approved AF Form 1067s.
Activities also include studies and analysis to support both current program planning and execution as well as future program planning.
This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Advanced Synthetic Aperture Radar System (ASARS) 2B	0.000	0.000	43.681	-	43.681
Description: Designed/fabricated/integrated/demonstrate/test/transition deep look high altitude synthetic aperture radar. Includes total government and contractor costs for this project.					
FY 2018 Plans: FY 2018 development activities are reported under Program 0604257F, Project 644818, Imaging and Targeting Support.					
FY 2019 Base Plans: Will continue to develop/design/fabricate/integrate/demonstrate/test/rapidly transition deep look high altitude ISR radar capabilities					
FY 2018 to FY 2019 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674820 / *Sensor Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Additional funding to support ASARS-2B efforts added by the AF in this new project 674820 Sensor Development.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	43.681	-	43.681

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• RDTE 07 0305202F: *Dragon U-2 (JMIP)*	37.217	14.714	0.520	-	0.520	0.550	1.840	3.920	0.000	Continuing	Continuing

Remarks

A portion of the funding within the U-2 RDT&E line and Airborne Reconnaissance systems RDT&E line will be used to advance ASARS design, development, test and demonstration.

D. Acquisition Strategy

ASARS / High Altitude SAR technology maturation is conducted by Air Force Life Cycle Management Center/Intelligence, Surveillance, and Reconnaissance and Special Operations Forces (AFLCMC/WIN), in conjunction and cooperation with AFLCMC/HBG (Robins AFB) for flight test support.
Acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods, including the use of engineering change proposals to modify existing contracts and new contracts that were awarded both competitively or on a sole source basis.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674820 / *Sensor Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASARS 2B	TBD	TBD : TBD	-	-		-		43.681	Apr 2019	-		43.681	Continuing	Continuing	-
		Subtotal	-	-		-		43.681		-		43.681	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		43.681		-		43.681	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674820 / *Sensor Development*

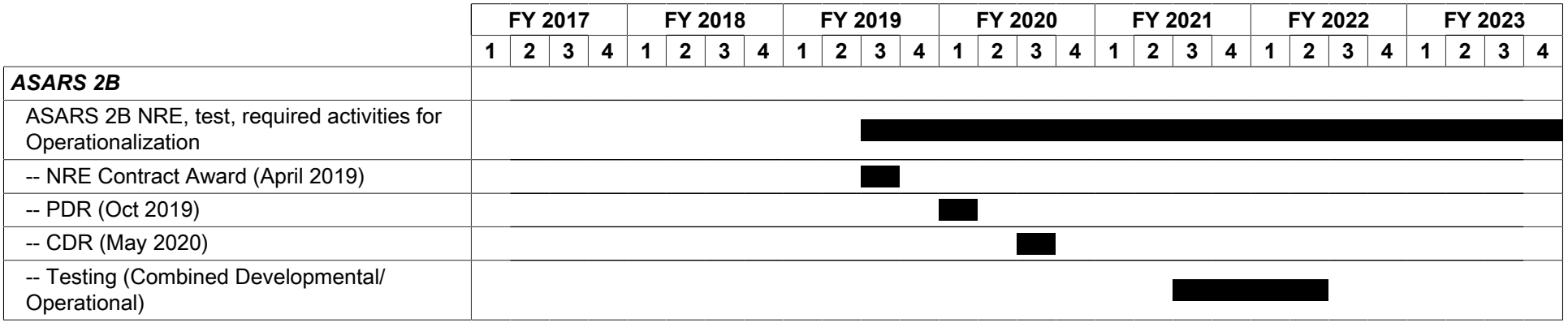

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674820 / *Sensor Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ASARS 2B				
ASARS 2B NRE, test, required activities for Operationalization	3	2019	4	2023
-- NRE Contract Award (April 2019)	3	2019	3	2019
-- PDR (Oct 2019)	1	2020	1	2020
-- CDR (May 2020)	3	2020	3	2020
-- Testing (Combined Developmental/Operational)	3	2021	2	2022

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 675092 / *JTC/SIL MUSE*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675092: *JTC/SIL MUSE*	-	3.841	3.429	3.454	0.000	3.454	3.521	3.580	3.653	3.720	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Multiple Unified Simulation Environment (MUSE) is the DoD simulation/training system of choice for many Unmanned Aircraft Systems (UAS), RPA, and ISR systems. MUSE is also know as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) in its Air Force Application. The MUSE/AFSERS is a software suite that simulates ISE & strike systems, tailored air vehicle & data links, and visualization systems used for payload product outputs-including Full Motion Video (FMV), Still Frame Imagery, or GMTO data. Air vehicles, sensors, datalinks, takeoff and landing systems, and to some degree, surrogate UAS and RPA ground stations, when actual ground stations are unavailable. FMV, still frame imagery, or GMTI data are provided. Outputs are compliant with applicable DoD standards and are continually tested against actual ground ISR processors to ensure interoperability with over 40 systems within DoD.

The Services and combatant commanders have a requirement for the capability to train with a system that provides a real-time simulation environment containing multiple intelligence systems that can be integrated with larger force-on-force simulations. The MUSE/AFSERS creates a realistic operational environment which supports the ability to assess military utility, architecture and concept of employment development, and Tactics, Techniques, and Procedures refinement, conduct emerging concepts experimentation, and optimize C4ISR within warfighting exercises and experiments. It is the preferred simulation system used by the combatant commanders and Joint Services to support command and battle staff C4ISR training.

The MUSE/AFSERS also creates a realistic operational environment that supports: an embedded training capability for multiple Program Managers; tools to minimize acquisition and life cycle cost and schedule impacts; ability to conduct emerging concepts experimentation, future systems exploration, systems integration, and technology insertion; applications for Joint and Service-specific warfighting exercises; and C4ISR optimization.

MUSE/AFSERS is currently in use within all Services and most unified commands simulating MQ-1, MQ-9, RQ-4, MQ-1C, M/RQ-5, RQ-7, national and commercial satellite collectors, P-3, E-8, and the U-2. During warfighting exercises, the AFSERS provides imagery simulations with associated C4ISR systems to support the execution of critical imagery processes. The MUSE/AFSERS is also used as a mission rehearsal tool for current, on-going military combat operations.

The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is the center of excellence that supports the UAS and RPA programs within the services by providing the system engineering, test and integration, interoperability, rapid technology insertion and training to address MUSE/AFSERS requirements. For those assets normally not available for training, the JTC/SIL provides surrogate systems and interfaces. The JTC/SIL contributes to the distributed training environments, virtually linking participants from various locations worldwide, and are routinely supported within the MUSE architecture.

Activities also include studies and analysis supporting current and future program planning and project execution.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675092 / *JTC/SIL MUSE*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) Development	3.841	3.429	3.454	-	3.454
Description: DoD's simulation/training system of choice for Intelligence Surveillance and Reconnaissance systems, sensors, and platforms. Includes AFSERS, Common Ground Station Interface, and infrastructure support. ***FY 2018 Plans:*** - Continue integration of NVIG into the Modeling & Simulation domain as it pertains to unmanned aircraft systems simulation. Terrain, and model development for NVIG and Virtual Reality Scene Generator to increase fidelity. - Continue support of theater level exercises: Ulchi Freedom Guardian, Key Resolve and Pacific Sentry-mods from exercises. - Continue to support improvement of mapping capability that facilitates 64 Bit, RMF accredited execution. - Continue redesign Windows Entity Server and NetLink to improve network routing, thus lessening bandwidth consumption. - Continue incorporate Common Image Generator Interface to provide an Image Generator (IG) agnostic solution to allow other IGs to be supported. - Continue to implement tactical protocols into the simulation domain to enhance interoperability. - Continue to refine the implementation of Hands on Throttle and Stick joystick. - Continue to analyze the redesign of VIPRS editor to fit current architecture. - Continue to address DoD standards and compliance to keep current with real world systems. - Continue to address ongoing modifications, test and integration for use in federation environment - Continue to address ongoing requirements from AFSERS User Working group based on available funding and time frame. ***FY 2019 Base Plans:*** - Will continue integration of NVIG into the Modeling & Simulation domain as it pertains to unmanned aircraft systems simulation. Terrain, and model development for NVIG and Virtual Reality Scene Generator to increase fidelity. - Will continue support of theater level exercises: Ulchi Freedom Guardian, Key Resolve and Pacific Sentry-mods from exercises. - Will continue to support improvement of mapping capability that facilitates 64 Bit, RMF accredited execution. - Will continue redesign Windows Entity Server and NetLink to improve network routing, thus lessening bandwidth consumption.					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675092 / *JTC/SIL MUSE*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Will continue incorporate Common Image Generator Interface to provide an Image Generator (IG) agnostic solution to allow other IGs to be supported. - Will continue to implement tactical protocols into the simulation domain to enhance interoperability. - Will continue to refine the implementation of Hands on Throttle and Stick joystick. - Will continue to analyze the redesign of VIPRS editor to fit current architecture. - Will continue to address DoD standards and compliance to keep current with real world systems. - Will continue to address ongoing modifications, test and integration for use in federation environment - Will continue to address ongoing requirements from AFSERS User Working group based on available funding and time frame. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $0.025M is due to inflation.					
Accomplishments/Planned Programs Subtotals	3.841	3.429	3.454	-	3.454

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• RDTE 07 PE 0305204A: *Tactical Unmanned Aerial Vehicles*	3.942	4.712	4.748	-	4.748	4.954	5.101	5.231	1.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

This is an enterprise services effort, jointly funded and centrally managed by the US Army. AFLCMC/WIN MIPRs funds in support of Unmanned Aircraft Systems modeling and simulation efforts.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 675092 / *JTC/SIL MUSE*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFSERS Development	MIPR	Redstone Arsenal : Huntsville, AL	-	3.841	Dec 2016	3.429	Jan 2018	3.454	Dec 2018	-		3.454	Continuing	Continuing	-
		Subtotal	-	3.841		3.429		3.454		-		3.454	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	3.841		3.429		3.454		-		3.454	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675092 / *JTC/SIL MUSE*

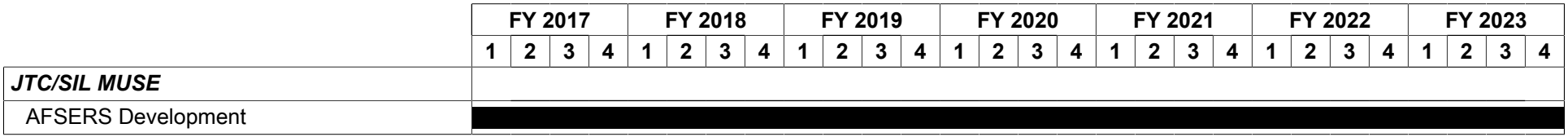

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675092 / *JTC/SIL MUSE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
JTC/SIL MUSE				
AFSERS Development	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 675291 / *Gorgon Stare*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675291: *Gorgon Stare*	-	9.624	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.624
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Gorgon Stare system is a podded airborne sensor suite that provides city-sized wide area airborne surveillance and is integrated on specially-modified MQ-9 Reaper RPA. The Air Force Requirements Oversight Council (AFROC) approved Air Combat Command's recommendation to transition Gorgon Stare from a Quick Reaction Capability (QRC) to an Air Force Enduring Capability in November 2014. Gorgon Stare's requirements are documented in the Gorgon Stare Wide Area Airborne Sensor Capabilities Production Document (draft). The acquisition strategy for this Air Force podded sensor suite solution is sustainment of the currently fielded capabilities with any upgrades implemented via validated -1067s or Urgent Operational Needs.

Development efforts conducted with FY 2015 Congressionally-added funds included efforts focused primarily on the development of a Beyond Line of Sight (BLOS) capability in support of an Urgent Operational Need. Development efforts conducted with FY 2016 Congressionally-added RDT&E funds included further development and system integration lab testing of Near Vertical Direction Finding (NVDF) with Gorgon Stare Increment 2 Wide Area Motion Imagery (WAMI) sensors. Funds spent on NVDF will provide a ramp for future airborne integration efforts as required. Development efforts conducted with FY 2017 Congressionally-added funds further development efforts associated with BLOS, to include first article testing for phase 1 delivery to the field, expected late FY 2018.

Activities also include studies and analysis to support both current program planning and execution as well as future program planning.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018
Congressional Add: Wide-Area Motion Imagery	9.624	0.000
FY 2017 Accomplishments: - Initiated integration of Processing, Exploitation, and Dissemination (PED) algorithms for analysts - Continued fielding of limited BLOS capability		
FY 2018 Plans: - First Article fielding of a limited BLOS capability and furthering integration of PED algorithms for analysts.		
Congressional Adds Subtotals	9.624	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675291 / *Gorgon Stare*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APAF 05 Line Item PRDTB3: *Airborne Reconnaissance Systems*	22.905	0.000	0.000	16.000	16.000	0.000	0.000	0.000	0.000	0.000	38.905
• APAF 06 Line Item PRDTB3: *Airborne Reconnaissance Systems*	0.000	0.216	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.216

Remarks

D. Acquisition Strategy

The wide area airborne surveillance requirement is being delivered via the Gorgon Stare podded wide area motion imagery sensor suite integrated on dedicated, specially-modified MQ-9 Reaper RPA. Gorgon Stare transitioned from a QRC to an Air Force Enduring Capability under AFROC authority in November 2014. The program is executed by the 645th Aeronautical Systems Group, Intelligence, Surveillance, and Reconnaissance and Special Operations Forces Directorate as a post-MS C program. The sensor suite will be sustained in its current configuration. Any future capability upgrades will be fielded as a result of validated -1067s or Urgent Operational Needs.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675291 / *Gorgon Stare*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Gorgon Stare Beyond Line of Sight -Further Development	SS/CPFF	Sierra Nevada Corporation : Sparks, NV	-	4.117	Sep 2017	-		-		-		-	Continuing	Continuing	4.117
Gorgon Stare Area of Interest (AOI) Tagging	SS/CPFF	Sierra Nevada Corporation : Sparks, NV	-	5.507	Dec 2017	-		-		-		-	Continuing	Continuing	6.818
		Subtotal	-	9.624		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	9.624		0.000		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675291 / *Gorgon Stare*

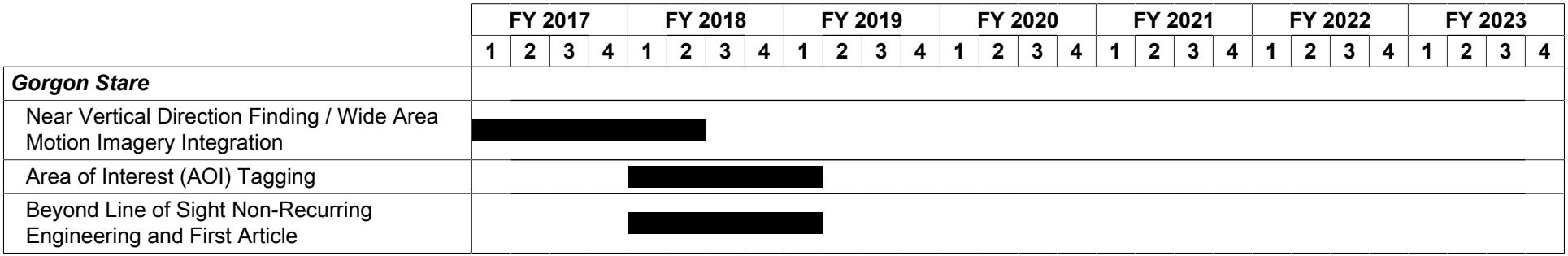

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675291 / *Gorgon Stare*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Gorgon Stare				
Near Vertical Direction Finding / Wide Area Motion Imagery Integration	1	2017	2	2018
Area of Interest (AOI) Tagging	1	2018	1	2019
Beyond Line of Sight Non-Recurring Engineering and First Article	1	2018	1	2019

Note

Gorgon Stare will continue operations as required using sustainment funding.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 676025 / *Data Compression*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
676025: *Data Compression*	-	0.000	0.000	4.879	0.000	4.879	6.935	9.545	11.714	12.848	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2019, Data Compression effort and funding was transferred from PE 0604257F, Advanced Technology and Sensors, Project 646025, to PE 0305206F, Airborne Reconnaissance Systems, Project 676025.

A. Mission Description and Budget Item Justification

The Data Compression effort provides the warfighter a capability to efficiently compress and decompress airborne Intelligence, Surveillance, and Reconnaissance ISR sensor data and transmit near real time to tactical users through current and future bandwidth limited commercial satellite communications (SATCOM) or military SATCOM. The effort is developing, testing and will implement new sensor data compression and decompression algorithms for current and emerging airborne ISR sensors. Additionally, the program develops compression and decompression capabilities for manned and unmanned airborne platforms, associated ground stations, and Distributed Common Ground System. Outputs will meet standard certification for use within the Department of Defense Geospatial Intelligence and Measurement and Signatures Intelligence architectures.

Activities also include studies and analysis to support both current and future program planning and execution.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Data Compression	0.000	0.000	4.879	-	4.879
Description: The Data Compression effort provides the warfighter a capability to efficiently compress and decompress airborne Intelligence, Surveillance and Reconnaissance (ISR) sensor data and transmit near real time to tactical users through current and future bandwidth limited commercial Satellite Communications (SATCOM) or military SATCOM. The effort will develop, test and implement new sensor data compression and decompression algorithms for current and emerging airborne ISR sensors. Additionally, the program develops compression and decompression capabilities for manned and unmanned airborne platforms, associated ground stations, and the Defense Common Ground System. Outputs will meet standard certification for use within the Department of Defense Geospatial Intelligence and Measurement and Signatures Intelligence architectures.					
FY 2018 Plans: - FY 2018 activities are reported under Program 0604257F, Project 646025,Data Compression.					
FY 2019 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676025 / *Data Compression*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Will continue to develop and test our existing data compression capabilities including SAR, Phase History SAR and HSI/MSI. - Will develop compression capabilities for other phenomenologies, including, but not limited to, SIGINT, LIDAR, and EO/IR. - Will support integration of compression capabilities into operational sensors including, but not limited to, the U2/ ASARS, Global Hawk MP-RTIP/EISS, and Reaper/LynxSAR. - Will continue to develop and test compression and decompression algorithms for Persistent SAR and Smart Data Discrimination. - Will continue to develop documentation for DoD and international standards acceptance of our compression capabilities. - Will continue to provide engineering services for algorithm familiarization, assessment, and improvement. - Will continue to participate in SOSA (and other open standards) planning and integration. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding increased due to Data Compression effort being transferred from PE 0604257F.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	4.879	-	4.879

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Data Compression acquisition approach is to design and develop compression and decompression technology hardware and software components, interfaces and standards for various airborne Intelligence, Surveillance and Reconnaissance platforms, ground stations, data storage facilities, and exploitation tools utilizing existing contracts with full and open competition where appropriate. Integration will be accomplished by the requisite program offices.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 676025 / *Data Compression*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RDUCE Development Efforts	Various	Not specified. : TBD	-	-		-		4.579		-		4.579	Continuing	Continuing	-
		Subtotal	-	-		-		4.579		-		4.579	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA: Other Govt Cost	C/Various	Govt/Contractors : Dayton, OH	-	-		-		0.300		-		0.300	Continuing	Continuing	-
		Subtotal	-	-		-		0.300		-		0.300	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		4.879		-		4.879	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676025 / *Data Compression*

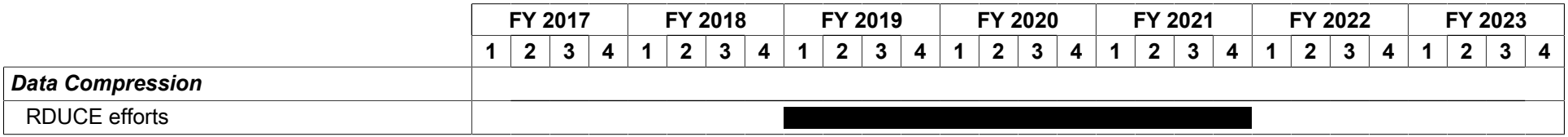

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676025 / *Data Compression*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Data Compression				
RDUCE efforts	1	2019	4	2021

Note

In FY 2015, RDUCE efforts were reported under PE 0305208F, Distributed Common Ground/Surface Systems, Project 676025, Data Compression. For FY 2017, RDUCE efforts will be reported under PE 0604257F, Advanced Technology and Sensors, Project 646025, Data Compression.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 676031 / *Dismount Detection RADAR*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
676031: *Dismount Detection RADAR*	-	0.000	1.021	103.025	0.000	103.025	95.482	63.025	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Detection Radar (DR) project designs, develops, integrates, tests, fields, and sustains Moving Target Indicator (MTI) capability for improved dismount and moving target detection, identification, tracking, and classification. This sensor will be employed on airborne platforms, such as the MQ-9 Reaper.

Activities also include studies, analysis, and technology development, maturation, and demonstration to support current and future program planning and execution.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production fielding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: DR ***Description:*** Design, develop, integrate, test, field, and sustain a persistent MTI capability in theater for employment on airborne platforms and various technical studies/analysis to support future advanced radar development. ***FY 2018 Plans:*** Initiate risk reduction on sensor for integration on airborne platforms to provide Moving Target Indication (MTI) capability, to include up to maturing architecture & design; developing subsystem prototypes; improving manufacturing readiness. ***FY 2019 Base Plans:*** Will award contract to begin design, development, integration, and testing of MTI capability on medium altitude airborne platforms. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding increased due to ramp up from initial risk reduction activities in FY 2018 to contract award in FY 2019.	0.000	1.021	103.025	-	103.025
Accomplishments/Planned Programs Subtotals	0.000	1.021	103.025	-	103.025

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676031 / *Dismount Detection RADAR*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The acquisition strategy for DR includes risk reduction studies and activities in FY 2018 to prepare for contract award in 1QFY19. This contract will design, develop, integrate, test, field, and sustain a more persistent MTI capability to be integrated on airborne platforms.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676031 / *Dismount Detection RADAR*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Technology Efforts (Prioritized by Geospatial Intelligence Capabilities Working Group)	Various	Various : Various	-	0.000		1.021	Jan 2018	0.000	Jan 2019	-		0.000	Continuing	Continuing	6.935
DR Development	TBD	TBD : TBD	-	-		-		86.312	Jan 2019	-		86.312	Continuing	Continuing	-
		Subtotal	-	0.000		1.021		86.312		-		86.312	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA: Other Govt Cost	Various	TBD : TBD	-	-		-		16.713	Jan 2019	-		16.713	Continuing	Continuing	-
		Subtotal	-	-		-		16.713		-		16.713	Continuing	Continuing	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.000		1.021		103.025		-		103.025	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676031 / *Dismount Detection RADAR*

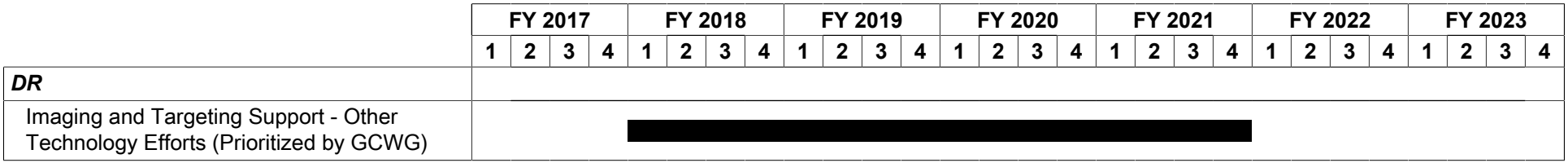

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676031 / *Dismount Detection RADAR*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DR				
Imaging and Targeting Support - Other Technology Efforts (Prioritized by GCWG)	1	2018	4	2021