Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force											Date: April 2022	
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 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	133.247	108.291	55.048	0.000	55.048	56.694	37.116	65.242	66.693	Continuing	Continuing
672001: *Next-Generation Sensors*	-	18.038	20.184	0.000	0.000	0.000	24.433	20.774	24.169	24.707	Continuing	Continuing
672002: *Agile ISR*	-	5.342	5.413	1.690	0.000	1.690	6.890	5.959	0.000	0.000	Continuing	Continuing
672003: *Sensors Open System Architecture*	-	13.891	0.734	0.782	0.000	0.782	0.935	0.809	0.000	0.000	Continuing	Continuing
674818: *Imaging and Targeting Support**	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.648	29.285	Continuing	Continuing
674820: *Sensor Development*	-	72.874	54.344	48.692	0.000	48.692	15.085	0.000	0.000	0.000	0.000	190.995
675092: *JTC/SIL MUSE*	-	3.574	3.593	3.784	0.000	3.784	3.860	3.933	4.015	4.104	Continuing	Continuing
675291: *Gorgon Stare*	-	10.000	12.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
676025: *Data Compression*	-	9.528	11.523	0.100	0.000	0.100	5.491	5.641	8.410	8.597	Continuing	Continuing

*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2023

A. Mission Description and Budget Item Justification

The Airborne Reconnaissance System (ARS) Program develops and integrates next generation intelligence, surveillance, and reconnaissance (ISR) capabilities. ARS includes platform-agile sensor data processing; sensor products aiding assisted target recognition algorithms and other artificial intelligence activities (e.g. geolocation models, sensor-base exploitation tools, sensor networking capabilities); and implementation of Sensor open architecture standards. The ARS Program includes the following efforts: Next-Generation Sensors (672001), Agile ISR (672002), Sensors Open System Architecture (672003), Imaging and Targeting Support (674818), Sensor Development (674820), JTS/SIL MUSE (675092), Gorgon Stare (675291), and Data Compression (676025).

The ARS PE is integral to developing multi-domain, multi-Intelligence (multi-INT) research, development, test and evaluation (RDT&E) Program of Record (PoR) efforts in support of the National Defense Strategy (NDS) and 2018 DoD Artificial Intelligence Strategy, as applied by the Air Force in the Next Generation ISR Dominance Flight Plan. Specifically, Program 0305206F provides authorized and appropriated funding to multi-INT RDT&E efforts for utilization on airborne platforms. This program traditionally provides a multi-INT venue for integration of technologies matured in both the Advanced Technology Sensors (0604257F) and Airborne SIGINT Enterprise (0304260F) programs.

NGS is a platform-agile suite of sensor technologies defined for the best flexibility and capability for an ever-changing scale of ISR missions. Execution of the NGS activities are founded upon three pillars: Open Standards, Artificial Intelligence (AI)/Machine Learning(ML) algorithms, and Advanced Platform-Agile Sensors. The power behind the NGS program is an open architectural system design that enables rapid third-party software and LRU insertion/replacement allowing for DevSecOps execution, onboard multi-modal and multi-INT processing real-time, sensor cross-cueing, and AI/ML application. The AI/ML algorithms will be used to enable assisted

target detection and identification. NGS will anticipate and more quickly counter adversaries' future improvements in their abilities to hide from and defeat ISR sensors. NGS efforts include, but are not limited to: Multi-Intelligence Common Open Architecture Reconnaissance Programs Standard (MI-COARPS), Advanced Platform-Agile Sensors, Assisted Target Recognition for ISR (ATRI), and Digital Engineering (DE), to include Model-Based Systems Engineering (MBSE).

The Open Standards pillar of next generation capabilities is supported through MI-COARPS and Sensors Open Systems Architecture (SOSA) which coordinates advanced technologies and open architecture development for multi-INT sensor modalities. The AI/ML algorithm pillar of next generation capabilities will be supported by the Agile ISR and Data Compression efforts. Detection, Removal and Characterization Operations (DRACO) supports the development of a robust image quality improvement capability for airborne synthetic aperture radar (SAR) products. Additionally, the Reduction of Data Using Compression Enhancement (RDUCE) develops data compression algorithms, addressing current and future systems' bandwidth limitations. Consistent with NDS, algorithms are multi-INT sensor agile that are submitted for formal adoption by the DOD-Intelligence Community (IC) Joint Enterprise Standards Committee (JESC) GEOINT and SIGINT standards groups. Platform agile sensors pillar of next-generation capabilities will be supported by the Sensor Development effort, which includes the Advanced Synthetic Aperture Radar System (ASARS) front-end antenna array and receiver exciter advancements (ASARS-2B). ASARS-2B follow-on RDT&E extends range, enhances SAR performance and introduces maritime capability, while laying the framework for future use of open architectures. Additional efforts that support the next generation capabilities include continuation of Gorgon Stare Wide Area Motion Imagery (WAMI) RDT&E and the Multiple Unified Simulation Environment (MUSE) Joint Technology Center/Systems Integration Lab (JTC/SIL) by supporting ISR Training.

The total cost of the NGS Middle Tier of Acquisition effort is 131.7 million, including RDT&E and procurement of prototype units. NGS is not fully funded across the Future Years Defense Program. The Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trades based on technical maturity, or transition to alternative pathways.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY20 0.857M was expended for civilian pay expenses in this program element, and in FY21 1.742M is forecasted for civilian pay expenses in this program element.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force	Date: April 2022
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*

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	123.287	71.791	0.000	0.000	0.000
Current President's Budget	133.247	108.291	55.048	0.000	55.048
Total Adjustments	9.960	36.500	55.048	0.000	55.048
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	36.500			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	9.960	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	55.048	0.000	55.048

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 675291: *Gorgon Stare*		
Congressional Add: *Gorgon Stare*	10.000	12.500
Congressional Add Subtotals for Project: 675291	10.000	12.500
Congressional Add Totals for all Projects	10.000	12.500

Change Summary Explanation

FY21 increase due to an approved BTR supporting ASARS-2B.

The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

The decrease from FY22 to FY23 is due to higher priorities of the Air Force.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 672001 / *Next-Generation Sensors*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
672001: *Next-Generation Sensors*	-	18.038	20.184	0.000	0.000	0.000	24.433	20.774	24.169	24.707	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Next Generation Sensors (NGS) program seeks to change the paradigm of Intelligence, Surveillance, and Reconnaissance (ISR) sensor acquisitions to deliver mission critical technology more quickly and cost effectively. NGS is a platform-agile suite of sensor technologies defined for the best flexibility and capability for an ever-changing scale of ISR missions. The power behind the NGS program is an open architectural system design that enables individual sensor upgrades and enhancements and mission-specific mode and algorithm applications, establishing a path to on-board multimodal and multi-INT processing, sensor cross-cueing, and artificial intelligence applications. NGS efforts include, but are not limited to: Multi-INT Common Open Architecture Reconnaissance Programs Standard (MI-COARPS), Advanced Platform-Agile Sensors, Assisted Target Recognition for ISR (ATRI), and Digital Engineering (DE), to include Model Based Systems Engineering (MBSE).

NGS program efforts are set by capability gaps within the Challenging Targets Initial Capabilities Document and as approved by the Capabilities Decision Memorandum (Signed Jan 2019). These requirements have been further verified, modeled, and developed through the Airborne Sensors for ISR (ASI) Analysis of Alternatives (AoA). Program requirements were further defined in the NGS Draft Capability Development Document (DCDD) approved on 21 February 2021.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capabilities. The use of such program funds would be in addition to civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Next Generation Sensors	18.038	20.184	0.000
Description: Mold current and future ISR into a platform-agile, non-proprietary, autonomous multi-INT cross cueing 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. ***FY 2022 Plans:*** - Develop and mature sensor technology for electro-optical/infrared (EO/IR), radar and other sensor modalities - Develop, integrate, and test dual-band EO/IR and LiDAR prototype sensor - Develop edge artificial intelligence (AI)/machine learning (ML) algorithms to identify (ID) critical mobile targets (CMTs) - Develop multi-INT, open architecture (OA) processor and standards. Mature open architectures for ISR systems including cybersecurity analysis, industry standardization, and open architecture demonstrations			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672001 / *Next-Generation Sensors*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
- Integrate cross-cueing, fusion algorithms, and edge AI/ML algorithm suite with sensors and processing open architecture (OA) standards ***FY 2023 Plans:*** Due to higher AF priorities, the following activities have been strategically paused: - Development and maturation of sensor technology for electro-optical/infrared (EO/IR), radar and other sensor modalities - Development, integration, and testing of dual-band EO/IR and LiDAR prototype sensor - Development of edge artificial intelligence (AI)/machine learning (ML) algorithms to identify (ID) critical mobile targets (CMTs) - Further development of multi-INT, open architecture (OA) processor and standards. Mature open architectures for ISR systems including cybersecurity analysis, industry standardization, and open architecture demonstrations - Integration of cross-cueing, fusion algorithms, and edge AI/ML algorithm suite with sensors and processing open architecture (OA) standards - Integration of Next Generation Sensors into relevant platforms ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease in funding is due to realignment of funds to higher Air Force priorities.			
Accomplishments/Planned Programs Subtotals	18.038	20.184	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

NGS activities will leverage parallel development activities and integrate them with a risk-informed approach to develop and demonstrate NGS capabilities that meet military needs under operationally-relevant environments and conditions. This program has established a forum of stakeholders, consisting of multiple Other Government Agencies (OGAs), end-users, and MAJCOMs to ensure that the program deliverables are answering identified warfighter needs, to ensure a clear and concise technology transition path.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672001 / *Next-Generation Sensors*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Triple Raven ATD	Various	Various : TBD	-	6.998	Aug 2021	0.000	Feb 2022	0.000	Mar 2023	-		0.000	Continuing	Continuing	-
NGS Sensors	Various	Various : TBD	-	1.200	Jun 2021	3.645	Feb 2022	0.000	Mar 2023	-		0.000	Continuing	Continuing	-
NGS Algorithms (ATRI)	Various	Various : TBD	-	1.200	Jun 2021	5.846	Feb 2022	0.000	Mar 2023	-		0.000	Continuing	Continuing	-
NGS Standards (OA)	Various	Various : TBD	-	3.700	Jun 2021	5.141	Dec 2021	0.000	Mar 2023	-		0.000	Continuing	Continuing	-
Raging Parakeet JCTD	Various	Various : TBD	-	2.459	Feb 2021	0.000	Dec 2021	0.000	Mar 2023	-		0.000	Continuing	Continuing	-
Digital Engineering (DE), Model Based Systems Engineering (MBSE)	Various	Various : TBD	-	-		3.000	Oct 2021	0.000	Mar 2023	-		0.000	Continuing	Continuing	-
		Subtotal	-	15.557		17.632		0.000		-		0.000	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA: Other Gov't costs	Various	Not specified. : TBD	-	2.481	Feb 2021	2.552	Oct 2021	0.000	Feb 2023	-		0.000	Continuing	Continuing	-
		Subtotal	-	2.481		2.552		0.000		-		0.000	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	18.038		20.184		0.000		-		0.000	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672001 / *Next-Generation Sensors*

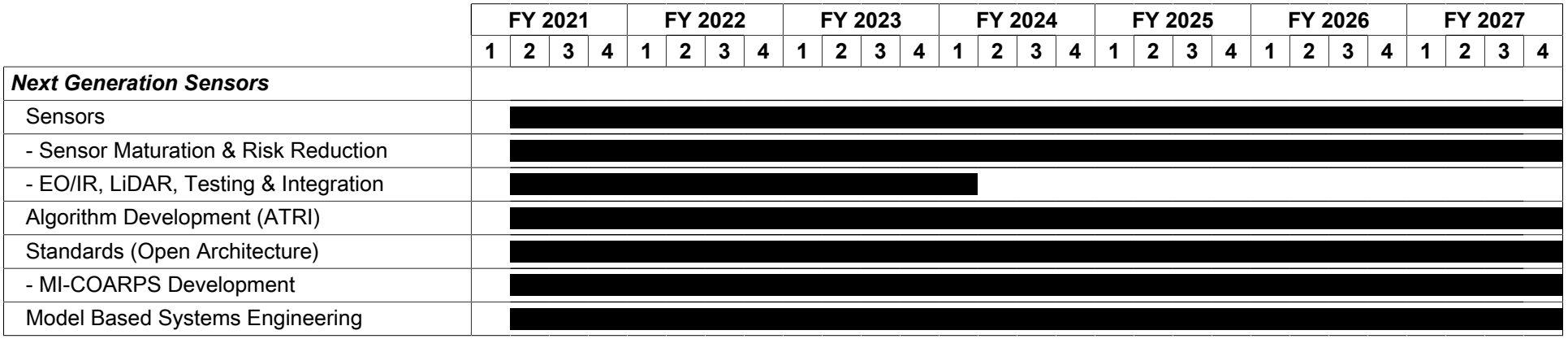

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672001 / *Next-Generation Sensors*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Next Generation Sensors				
Sensors	2	2021	4	2027
- Sensor Maturation & Risk Reduction	2	2021	4	2027
- EO/IR, LiDAR, Testing & Integration	2	2021	1	2024
Algorithm Development (ATRI)	2	2021	4	2027
Standards (Open Architecture)	2	2021	4	2027
- MI-COARPS Development	2	2021	4	2027
Model Based Systems Engineering	2	2021	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 672002 / *Agile ISR*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
672002: *Agile ISR*	-	5.342	5.413	1.690	0.000	1.690	6.890	5.959	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY2023, PE 0305206F, (Airborne Reconnaissance Systems), Project 674818, (Imaging and Targeting Support) efforts related to Agile Pod will transfer to Project 672002, (Agile ISR)in order to provide greater visibility and transparency. This project is not a new start.

A. Mission Description and Budget Item Justification

The Agile ISR BPAC matures, develops, and deploys projects started under the Imaging & Targeting Support (I&TS) program in support of current and future platform agnostic, non-proprietary, autonomous, multi-INT cross cueing ISR solutions based on Advanced Battle Management System (ABMS) and Joint All-domain Command and Control (JADC2) mission requirements. This includes, but is not limited to, Detection Removal and Characterization Operations (DRACO), support and development of AgilePod, and other projects. Portions of the developmental efforts under Agile ISR are classified.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capabilities. The use of such program funds would be in addition to civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: DRACO	5.342	5.413	1.590
Description: Detection Removal and Characterization Operations (DRACO) is a robust Image Quality improvement capability for Airborne Synthetic Aperture Radar (SAR) products. The software resides in multiple locations on the ground and future efforts will migrate algorithms to airborne platforms supporting the Air Force, Army, Navy and other customers. DRACO efforts include but are not limited to development, design, fabrication, integration, demonstration, test, and transition of image quality improvement capabilities. This project originated under the I&TS program. All other details are classified.			
FY 2022 Plans: - Continue to mature, develop and deploy DRACO capabilities in order to give the warfighter a more efficient and effective tool. - Continue DRACO 6.0 efforts - Continue to increase interoperability by developing common standards and interfaces. - Continue to increase access and expand user base. - Integrate DRACO, assisted target recognition, and SAR compression algorithm into a software suite referenced as SAR Clean-up AI/ML Reduction (SCAR) Package			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672002 / *Agile ISR*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
- Will continue to mature, develop and deploy DRACO capabilities in order to give the warfighter a more efficient and effective tool. - Will continue to complete DRACO 6.0 efforts in 1QFY24. - Will continue to increase interoperability by developing common standards and interfaces. - Will continue to increase access and expand user base. - Will integrate DRACO, assisted target recognition, and SAR compression algorithm into a software suite referenced as SAR Clean-up AI/ML Reduction (SCAR) Package. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY23 decreased due to higher Air Force priorities.			
Title: AgilePod ***Description:*** AgilePod is a government-owned, open standards pod capable of multiple payloads including but not limited to ISR, communications, and EW. It consists of multiple variants and provides a rapid fielding capability for payloads to any aircraft in the DOD inventory that can carry an external store. ***FY 2022 Plans:*** AgilePod funded in FY22 ATS PE 64257F, BPAC 644818 as a technology development project. Transitioning to ARS PE 35206F BPAC 672002 in FY23. Not a new start. ***FY 2023 Plans:*** - Will continue to develop AgilePod variants for multi-platform use. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** - Increase in FY23 as technology development project transfers from ATS PE 64257F BPAC 644818 to ARS PE 35206F BPAC 672002.	-	0.000	0.100
Accomplishments/Planned Programs Subtotals	5.342	5.413	1.690

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Capabilities will be developed and integrated onto various information systems and platforms using an agile acquisition approach. The projects will be executed and contracted with appropriate vendor(s) to deliver capability while driving competition where possible.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 672002 / *Agile ISR*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DRACO	SS/CPFF	Lockheed Martin : King of Prussisa, PA	-	4.796	Dec 2020	5.119	Mar 2022	1.280	Feb 2023	-		1.280	Continuing	Continuing	-
AgilePod	Various	Various : TBD	-	-		-		0.100	Jan 2023	-		0.100	Continuing	Continuing	-
		Subtotal	-	4.796		5.119		1.380		-		1.380	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support	C/CPAF	Not specified. : TBD	-	-		-		0.260		-		0.260	Continuing	Continuing	-
		Subtotal	-	-		-		0.260		-		0.260	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA: Other Govt Cost	Various	Leidos & Jacobs : TBD	-	0.546	Oct 2020	0.294	Nov 2021	0.050	Nov 2022	-		0.050	Continuing	Continuing	-
		Subtotal	-	0.546		0.294		0.050		-		0.050	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	5.342		5.413		1.690		-		1.690	Continuing	Continuing	N/A

Remarks

In FY2023, PE 0305206F, (Airborne Reconnaissance Systems), Project 674818, (Imaging and Targeting Support) efforts related to Agile Pod will transfer to Project 672002, (Agile ISR)in order to provide greater visibility and transparency. This project is not a new start.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672002 / *Agile ISR*

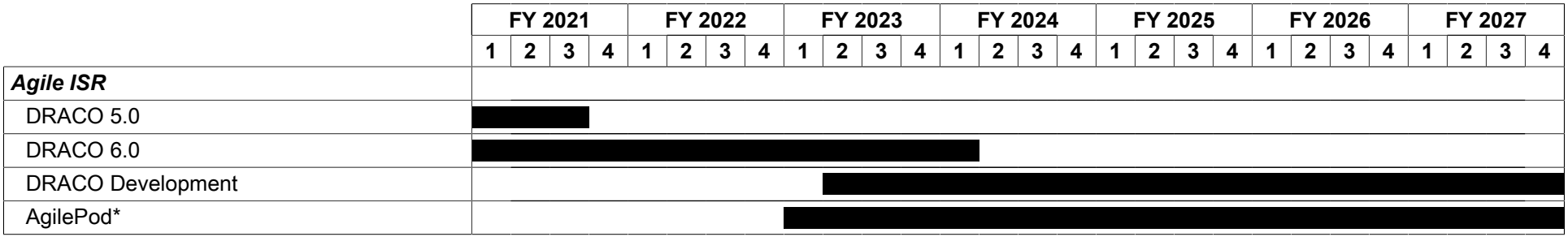

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672002 / *Agile ISR*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Agile ISR				
DRACO 5.0	1	2021	3	2021
DRACO 6.0	1	2021	1	2024
DRACO Development	2	2023	4	2027
AgilePod*	1	2023	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 672003 / *Sensors Open System Architecture*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
672003: *Sensors Open System Architecture*	-	13.891	0.734	0.782	0.000	0.782	0.935	0.809	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY2021, PE 0305206F, (Airborne Reconnaissance Systems), Project 674818, (Imaging and Targeting Support) efforts related to System Open System Architecture were transferred to Project 672003, (Sensor Open System Architecture) in order to provide greater visibility and transparency. This project is not a new start.

A. Mission Description and Budget Item Justification

The Sensors Open System Architecture (SOSA) project develops common hardware standards and associated software interfaces in support of the development for modalities of sensors, such as: RADAR, SIGINT, EW, Communications and EO/IR (development of standards and open architecture interfaces for Hardware and Electrical/Mechanical interfaces) in support of multiple airborne reconnaissance platforms, both manned and unmanned. Its objectives are to develop, demonstrate, and rapidly upgrade/iterate advanced, interoperable, multi-platform solutions to reduce the find, fix, target, and track kill chain timeline, and to provide safe separation and collision avoidance for remotely piloted aircraft through development of abstraction interfaces for sense (such as RADAR, ADS-B, TCAS, Next Generation Sensors, ASIP, and ASARS) and avoid logic.

This project is designed to support development of the Next Generation Sensors program, as well as other AFLCMC/WI emerging and program of record needs. As part of the development effort SOSA will be funding and supporting first article development of key common hardware solutions.

The SOSA SIL (System Integration Laboratory) will continue to support development of common hardware standards and associated software interfaces and provide a conformance/compliance program for industry partners and other DoD services.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Sensors Open System Architecture	13.891	0.734	0.782
Description: Description: The Sensors Open System Architecture (SOSA) project will execute activities to develop common hardware standards and associated software interfaces. ***FY 2022 Plans:*** - Continue to develop prototype of SOSA SAR/SIGINT capability - Continue to develop AgilePod internal electrical/mechanical interfaces			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672003 / *Sensors Open System Architecture*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
- Continue to implement and execute hardware demonstrations - Continue to support EO/IR article prototyping - Continue to prepare and host interoperability demonstrations ***FY 2023 Plans:*** - Will continue to support of RPA Sense and Avoid Technology (C-ABSAA Technology Maturation & Risk Reduction Phase) - Will continue to develop prototype of SOSA SAR/SIGINT capability - Will continue to develop AgilePod internal electrical/mechanical interfaces - Will continue to implement and execute hardware demonstrations - Will continue to support EO/IR article prototyping - Will continue to prepare and host interoperability demonstrations ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase in funding is due to inflation adjustments.			
Accomplishments/Planned Programs Subtotals	13.891	0.734	0.782

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Coalition of Industry, DoD, and OGA partnerships to develop common hardware standards and associated software interfaces to support ACC and AFLCMC requirements for next generation sensors. Acquisition initiatives consist of prototype activities, risk reduction and demonstrations. Contracting strategy for FY23 and beyond is to be determined.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672003 / *Sensors Open System Architecture*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SOSA Hardware Development	SS/FFP	Dynetics (JSIL) : Huntsville, AL	-	0.558	Dec 2020	-		-		-		-	Continuing	Continuing	-
SOSA Hardware Development (1)	SS/CPFF	Skayl : DC & Arizona, AZ	-	0.558	Dec 2020	-		-		-		-	Continuing	Continuing	-
SOSA Hardware Development (2)	SS/CPFF	DCS : Dayton, OH	-	0.500	Dec 2020	0.439	Dec 2021	0.487	Dec 2022	-		0.487	Continuing	Continuing	-
SOSA Hardware Development (3)	SS/CPFF	MIT/LL : Boston, MA	-	0.130	May 2021	-		-		-		-	Continuing	Continuing	-
SOSA Hardware Development (4)	SS/CPFF	GTRI Conformance : Atlanta, GA	-	0.300	Dec 2020	-		-		-		-	Continuing	Continuing	-
SOSA Hardware Development (5)	SS/CPFF	GTRI H/W Dev : Atlanta, GA	-	0.550	May 2021	-		-		-		-	Continuing	Continuing	-
SOSA Hardware Development (6)	SS/CPFF	BAH : Baltimore, MD	-	0.300	Dec 2020	-		-		-		-	Continuing	Continuing	-
SOSA Hardware Development (7)	SS/CPFF	GTRI Hardware Upgrade : Atlanta, GA	-	0.300	Dec 2020	-		-		-		-	Continuing	Continuing	-
SOSA Hardware Development (8)	SS/CPFF	Leitos : Dayton, OH	-	0.600	Dec 2020	0.200	Dec 2021	0.200	Dec 2022	-		0.200	Continuing	Continuing	-
SOSA Hardware Development (9)	SS/FFP	Spectranetix/Pacific Def : El Segundo, CA	-	10.000	Mar 2021	-		-		-		-	0.000	10.000	-
		Subtotal	-	13.796		0.639		0.687		-		0.687	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration (PMA)	Various	Not specified. : TBD	-	0.095	Jul 2021	0.095	Dec 2021	0.095	Dec 2022	-		0.095	Continuing	Continuing	-
		Subtotal	-	0.095		0.095		0.095		-		0.095	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 672003 / *Sensors Open System Architecture*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	13.891		0.734		0.782		-		0.782	Continuing	Continuing	N/A

Remarks

In FY2021, PE 0305206F, (Airborne Reconnaissance Systems), Project 674818, (Imaging and Targeting Support) efforts related to System Open System Architecture were transferred to Project 672003, (Sensor Open System Architecture)in order to provide greater visibility and transparency.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672003 / *Sensors Open System Architecture*

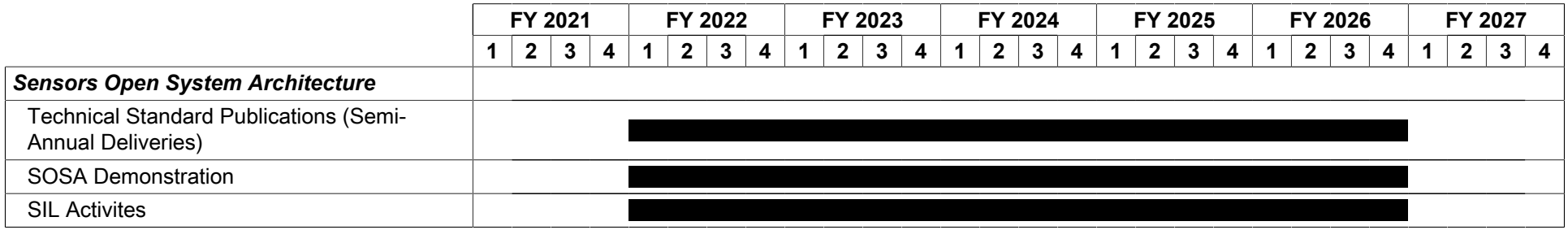

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 672003 / *Sensors Open System Architecture*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Sensors Open System Architecture				
Technical Standard Publications (Semi-Annual Deliveries)	1	2022	4	2026
SOSA Demonstration	1	2022	4	2026
SIL Activites	1	2022	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
674820: *Sensor Development*	-	72.874	54.344	48.692	0.000	48.692	15.085	0.000	0.000	0.000	0.000	190.995
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Sensors Development project increases the range and collection capability, interoperability and processing of the Advanced Synthetic Aperture Radar Systems (ASARS) through design, development, testing, and fielding efforts. The Sensors Development efforts advance the capability of ASARS for U-2 employment, and is a critical component for the multi-INT Next Generation Sensors, project 672001, efforts. ASARS-2B (front-end) & ASARS-2C (back-end) efforts provide critical advancements and risk reduction in SAR/Moving Target Indication capability to be implemented in the future multi-INT, platform agile capability that Next Generation Sensors will provide.

The ASARS effort is a fifth generation, deep-look, high-altitude, ISR radar that is the foundation for the radar component of the Next Generation Sensors (NGS) family of systems as outlined in the AFROC approved ASARS-2C draft Capabilities Development Document (CDD). ASARS-2B (front-end) is the antenna and receiver exciter replacement. The ASARS-2C (back end) data processing efforts extend the ASARS-2B (front-end) radar capability using open architecture data processing and multi-platform integration. Open architecture improves performance and lowers cost by facilitating and enabling qualified third party software vendors to incorporate future multi-ISR capability to advance interoperability across joint operations. ASARS increases current capability and addresses National Defense Strategy Key Operational Problems and ISR Dominance flight plan.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Advanced Synthetic Aperture Radar System (ASARS)-2B (front-end)	72.874	30.344	48.692
Description: Develop, design, fabricate, integrate, test and field deep look high altitude ISR radar capabilities.			
FY 2022 Plans: - Continue to develop, design, fabricate, integrate, test and field deep look high altitude ISR radar capabilities.			
FY 2023 Plans: - Finalize development, design, fabrication, integration and initial flight test for deep look high altitude ISR radar capabilities			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
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 2021	FY 2022	FY 2023
FY2023 slight decrease as program shifts to system design completion, system integration and complete flight testing necessary for system fielding			
Title: Advanced Synthetic Aperture Radar System (ASARS)-2C (back-end) ***Description:*** Integrate open radar processing architectures for enhanced RF capabilities and third party mode development. ***FY 2022 Plans:*** - Mature standards and technologies, and complete acquisition strategy for enhanced RF capabilities and third party mode development. ***FY 2023 Plans:*** - Integrate, test and field deep look high altitude ISR radar capabilities.	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	72.874	30.344	48.692

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• RDTE 07 PE 0305202F: *Dragon U-2*	18.660	18.319	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

Remarks

A portion of the funding within the U-2 RDT&E line will be used to advance ASARS development / design/fabrication/integration/demonstration/testing and fielding deep look high altitude ISR radar capabilities.

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/WIA (Robins AFB) for test support.
Acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods, including but not limited to the use of engineering change proposals to modify existing contracts and new contracts that were awarded both competitively or on a sole source basis.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASARS-2B (front-end)	SS/CPIF	Raytheon : El Segundo, CA	-	72.774	Nov 2020	54.194	Nov 2021	48.542	Nov 2022	-		48.542	Continuing	Continuing	-
ASARS-2C (back-end)	SS/CPFF	Raytheon : El Segundo, CA	-	0.000	Jul 2021	-		-		-		-	Continuing	Continuing	-
		Subtotal	-	72.774		54.194		48.542		-		48.542	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	Various	Not specified. : TBD	-	0.100	Jan 2021	0.150	Jan 2022	0.150	Jan 2023	-		0.150	Continuing	Continuing	-
		Subtotal	-	0.100		0.150		0.150		-		0.150	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	72.874		54.344		48.692		-		48.692	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674820 / *Sensor Development*

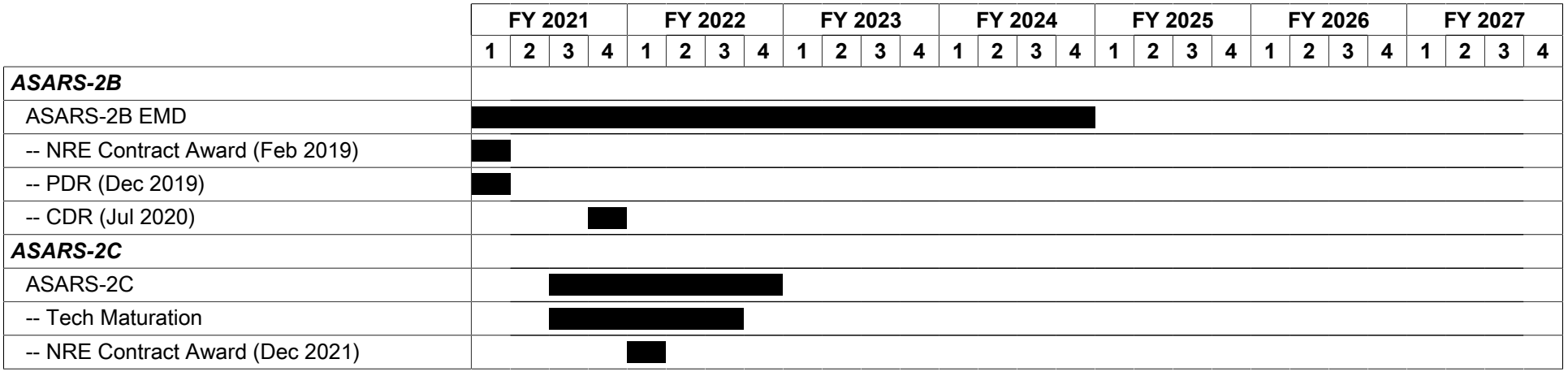

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 674820 / *Sensor Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ASARS-2B				
ASARS-2B EMD	1	2021	4	2024
-- NRE Contract Award (Feb 2019)	1	2021	1	2021
-- PDR (Dec 2019)	1	2021	1	2021
-- CDR (Jul 2020)	4	2021	4	2021
ASARS-2C				
ASARS-2C	3	2021	4	2022
-- Tech Maturation	3	2021	3	2022
-- NRE Contract Award (Dec 2021)	1	2022	1	2022

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
675092: *JTC/SIL MUSE*	-	3.574	3.593	3.784	0.000	3.784	3.860	3.933	4.015	4.104	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Multiple Unified Simulation Environment (MUSE) is the DoD flight simulation/training system of choice for many Unmanned Aircraft Systems (UAS), RPA, and airborne platforms. MUSE is also known as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) in its Air Force training application. The MUSE/AFSERS is a software suite that simulates UAS/RPA (e.g., MQ-9) systems, tailored air vehicle & data links, and visualization systems used for payload product outputs-including Full Motion Video (FMV), Fixed Frame Imagery (FFI), Ground Moving Target Indicator (GMTI) data, and Link 16 (J2.2 and J3.5) tracking messages. Outputs are compliant with applicable DoD standards and are continually tested against actual ground data processors to ensure DoD systems interoperability.

The Services and Combatant Commanders have a requirement for training with a system that provides a real-time simulation environment containing multiple domain systems that can be integrated with larger force-on-force simulations. The MUSE creates a realistic operational environment supporting military utility assessment, architecture, and employment concept development. Training, Tactics, Techniques and Procedures (TTP) refinement, practice Processing, Exploitation and Dissemination (PED) of multi-domain information. Conduct emerging concepts experimentation, optimizing Command, Control, Communications, and Computing (C4) with warfighting exercises and experiments. MUSE is the preferred UAS/RPA simulation system used by US Combatant Commanders and Joint Services to support command and battle staff C4 training.

The MUSE also creates a realistic operational environment that supports: an embedded training capability for new UAS/RPA system Program Managers; tools to minimize acquisition and life cycle cost and schedule impacts. MUSE conducts emerging concepts experimentation, future systems exploration, systems integration, and technology insertion; applications for Joint and Service-specific warfighting exercises; and C4 training optimization.

MUSE is currently used by all Services and most unified commands simulating MQ-1, MQ-9, RQ-4, MQ-1C, M/RQ-5, RQ-7, national and commercial satellite systems, P-3, E-8 and the U-2 during warfighting exercises. The AFSERS provides National Imagery Transmission Format (NITF) information for simulated data collection systems, supporting PED training. The MUSE is also used as a mission rehearsal tool for current, on-going military combat operations. Most of the MUSE/AFSERS software suite components are also used in multiple airborne platform system training devices. Including the MQ-9 [Medium Altitude Long Endurance Tactical (MALET) JSIL Aircrew Trainer (MJAT)] and RQ-4 [Global Hawk Sensor Operator Part Task Trainer (GHSOPTT), and Global Hawk Weapon System Trainer (WST)].

The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is the training center of excellence supporting UAS and RPA programs for the Services. JTC/SIL provides the system engineering, test and integration, interoperability, rapid technology insertion to address MUSE training requirements. The JTC/SIL combines the UAS/RPA knowledge of communications standards (such as STANAGs 4586, 4607, 4545 and 4609) with Hardware in the Loop (HIL) testing, MUSE, integrating with other DoD modeling and simulation (M&S) architectures. For those airborne 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

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675092 / *JTC/SIL MUSE*

within the MUSE architecture. The JTC/SIL continues to develop leading edge technologies supporting the rapidly evolving UAS/RPA training requirements required to support NDS future fighting force.

MUSE project funds may be utilized to cover the GCWG Secretariat, studies and analysis activities, supporting current program planning, execution, and future program planning.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) Development	3.574	16.093	3.784
Description: DoD's simulation/training system of choice for Intelligence Surveillance and Reconnaissance (ISR)systems, sensors, and platforms. Includes AFSERS, Common Ground Station Interface, and infrastructure support. ***FY 2022 Plans:*** JTC/SIL: - Continue support and release of MUSE/AFSERS RPA and ISR simulation capability supporting theater level exercises such as Dong Maeng (formerly Ulchi Freedom Guardian and Key Resolve), Yama Sakura, Talisman Saber, Pacific Sentry/Fury, Austere Challenge, and associated events. - Continue incorporation of mandated Cyber Security updates. - Continue support of CAFDMO SPRs - Continue architecture software optimization and modularization to facilitate extensibility and scalability. - Continue integrate the high fidelity SAR model into the MUSE/AFSERS baseline which provides realistic imagery based upon material encoded terrain. - Continue integration testing with designated federations (ASCCE,) ensuring joint interoperability with services and JS/J7 capabilities. - Perform DMON Integration: Support CAFDMO SPRs for AFSERS; Integration/Testing at Distributed Training Centers - Develop and integrate Electronic Warfare (EW) modeling and simulation capabilities to include GPS Denied - Enhance and integrate UAS Swarming modeling and simulation ***FY 2023 Plans:*** - Will continue to update sensor models and release new MUSE/AFSERS versions to reflect evolving RPA and ISR improvements to support theater level exercises such as CCPT (formerly Ulchi Freedom Guardian and Key Resolve), Yama Sakura, Talisman Saber, Pacific Sentry/Fury, Austere Challenge, and associated events. - Will continue to rapidly respond to Cyber Security threats as they are identified. - Will continue to modify the MUSE/AFSERS to further compliance with all CAFDMO requirements			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
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 2021	FY 2022	FY 2023
- Will continue to optimize software architecture and modularization to facilitate extensibility and scalability - Will continue to integrate a new high fidelity SAR model into the MUSE/AFSERS baseline which provides realistic imagery based upon material encoded terrain - Will continue to conduct integration testing with designated federations (such as ASCCE) to ensure joint interoperability with services - Will continue to perform DMON Integration: Support CAFDMO SPRs for AFSERS; Integration/Testing at Distributed Training Centers - Will continue to develop and integrate Electronic Warfare (EW) modeling and simulation capabilities to include GPS jamming effects. - Will continue to enhance and integrate UAS Swarming modeling and simulation - Will build new ISR platform simulations with multi-sensor capability to include P-3 ORION & P-8 POSEIDON. - Will integrate new high fidelity MTI capabilities ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increased due to inflation.			
Accomplishments/Planned Programs Subtotals	3.574	16.093	3.784

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• RDTE 07 PE 0305204A: *Tactical Unmanned Aerial Vehicles*	3.905	0.000	0.000	-	0.000	0.000	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

This is an enterprise services effort, jointly funded and centrally managed by the US Army. JTC/SIL falls under US Army Futures Command. US Army PE 0305204A funding ending after FY 2021. Additional continual Army funding expected from PEO STRI, JSJ7, exercise events, and other external Army users. AFLCMC/WIN MIPRs funds in support of Unmanned Aircraft Systems modeling and simulation efforts. The Air Force POC is Dr. Lillian-Campbell from AF Agency for Modeling & Simulation which falls under HAF/A3T.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFSERS Development	MIPR	Redstone Arsenal : Huntsville, AL	-	3.474	Dec 2020	3.393	Dec 2021	3.584	Dec 2022	-		3.584	Continuing	Continuing	-
		Subtotal	-	3.474		3.393		3.584		-		3.584	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	C/Various	Not specified. : TBD	-	0.100	May 2021	0.200	May 2022	0.200	May 2023	-		0.200	Continuing	Continuing	-
		Subtotal	-	0.100		0.200		0.200		-		0.200	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	3.574		3.593		3.784		-		3.784	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675092 / *JTC/SIL MUSE*

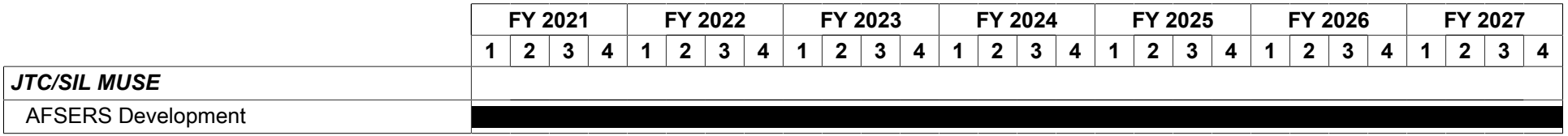

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675092 / *JTC/SIL MUSE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
JTC/SIL MUSE				
AFSERS Development	1	2021	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
675291: *Gorgon Stare*	-	10.000	12.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
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 was integrated on MQ-9 Reapers. 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 draft Capabilities Development Document (CDD). The acquisition strategy for this Air Force podded sensor suite solution is sustainment of the current capability with any upgrades implemented via validated -1067s, Urgent Operational Needs, or requirements as documented in the program CDD.

Development efforts conducted with FY2020 Congressionally added funds included the continuation of the following capabilities: Tagging and Tracking Full Field of View (FFoV), Electro-optical (EO)/Infrared (IR) Co-Collect, Airborne Tip and Cue, and Image Quality Enhancements Phase II. Development efforts in FY 2021 used Congressionally-added funds to include the continuation of, MQ-9 Blk 5 Integration, FFoV tagging and tracking, and Airborne Tip and Cue Phase II capabilities. FY 2021 activities also included studies and analysis to support both current program planning and execution as well as future program planning.

Development efforts in FY 2022 include completing fielding of the "Theia" BLOS capability, continuing the EO/IR Co-Collect Phase III, Airborne Tip and Cue, FFoV tagging and tracking, Image Quality Enhancements Phase III efforts, and MQ-9 Block 5 Integration.

The acquisition program manager has the authority to redirect funding as necessary to meet Gorgon Stare current and emerging Combatant Commander requirements to better meet the war fighting objectives.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Gorgon Stare for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: Gorgon Stare	10.000	12.500
FY 2021 Accomplishments: Development efforts in FY 2021 used Congressionally-added funds to include the continuation of, MQ-9 Blk 5 Integration, FFoV tagging and tracking, and Airborne Tip and Cue Phase II		

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675291 / *Gorgon Stare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
capabilities. FY 2021 activities also included studies and analysis to support both current program planning and execution as well as future program planning. ***FY 2022 Plans:*** Development efforts in FY 2022 include completing fielding of the "Theia" BLOS capability, continuing the EO/IR Co-Collect Phase III, Airborne Tip and Cue, FFoV tagging and tracking, Image Quality Enhancements Phase III efforts, and MQ-9 Block 5 Integration. FY 2022 will also see delivery of the remainder of the Theia pods, capable of providing BLOS capability to the Gorgon Stare system.		
Congressional Adds Subtotals	10.000	12.500

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• APAF 05 PRDTB3: *MQ-9 UAS Payloads*	63.500	55.200	0.000	-	0.000	0.000	0.000	-	-	0.000	118.700
• APAF 06 PRDTB3: *Gorgon Stare*	10.700	6.800	0.000	-	0.000	0.000	0.000	-	-	0.000	17.500

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 the 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-Milestone 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, or requirements as documented in the program CDD.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force		Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Gorgon Stare System Development	SS/CPFF	Sierra Nevada Corporation : Sparks, NV	-	10.000	Nov 2021	12.500	Jun 2022	-		-		-	Continuing	Continuing	10.000
		Subtotal	-	10.000		12.500		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	10.000		12.500		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675291 / *Gorgon Stare*

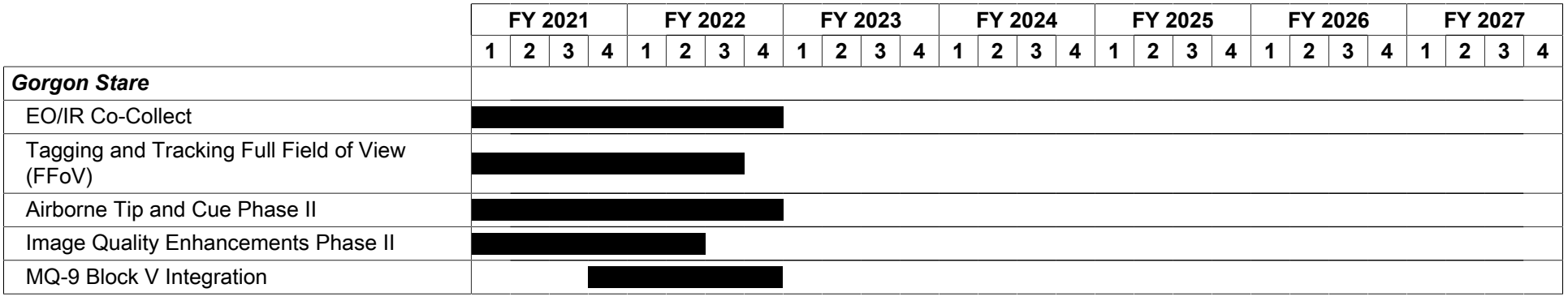

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 675291 / *Gorgon Stare*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Gorgon Stare				
EO/IR Co-Collect	1	2021	4	2022
Tagging and Tracking Full Field of View (FFoV)	1	2021	3	2022
Airborne Tip and Cue Phase II	1	2021	4	2022
Image Quality Enhancements Phase II	1	2021	2	2022
MQ-9 Block V Integration	4	2021	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
676025: *Data Compression*	-	9.528	11.523	0.100	0.000	0.100	5.491	5.641	8.410	8.597	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

RDUCE provides efficient and integrated compression of airborne Intelligence, Surveillance, and Reconnaissance (ISR) sensor data, maximizing the use of limited bandwidth and delivering more data, faster to the tactical user in the field. RDUCE develops, tests, and integrates new sensor data compression software and hardware for current and emerging airborne and space-based ISR sensors. The program develops compression capabilities for manned and unmanned platforms, associated ground stations, and the Distributed Common Ground System (DCGS). RDUCE data products meet standard certification for use within the Department of Defense and Intelligence Community (IC) Geospatial Intelligence (GEOINT), Signals Intelligence (SIGINT), and Measurement and Signatures Intelligence (MASINT) collection disciplines.

RDUCE activities include continuous studies, analysis, and updates to support program planning and execution. RDUCE also seeks to acquire certification of its data compression algorithms which includes acceptance into the DoD Information Technology Standards Registry (DISR). By ensuring compliance with appropriate standards governing bodies, RDUCE is always ready to satisfy new operational requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Data Compression	9.528	11.523	0.100
Description: The Data Compression effort provides the warfighter capabilities to efficiently compress ISR data and to enable dissemination in near-real time to tactical users through bandwidth-limited dissemination systems. The program focuses on current and emerging ISR sensors, including incorporation into open architectures like Common Open Architecture Radar Programs (COARPs), Future Airborne Capability Environment (FACE), and Sensor Open System Architecture (SOSA). The algorithms can be leveraged for any platform. For example, the HSI algorithm was selected by NASA to be included in an experimental system on the ISS. Outputs will meet standards certification for use within the DoD Geospatial, Signals and Measurement and Signatures Intelligence collection disciplines.			
FY 2022 Plans: - Prototype LIDAR and SIGINT modalities - Identify platform/sensor partners for initial test/integration across all sensor modes			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
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 2021	FY 2022	FY 2023
- Updates to address any issues or previously uncaptured use cases to ensure the compression algorithms are operationally relevant - Investigate EO/IR compression algorithms - Develop utilities to expedite intermediate file format generation for SAR Phase History Data integration - Complete LIDAR prototype - Transition into SIGINT Phase III and complete standards development for formal adoption ***FY 2023 Plans:*** - Will provide continued updates and integration support for the mature TRL modalities (SAR, HSI, SAR Phase History, SIGINT) - Will initiate development of beta version of production ready LIDAR algorithm - SIGINT algorithm flight testing - FPGA hardware development to support SAR and HSI sensors - Will identify platform/sensor partners for initial test/integration across all sensor modes - Will update to address any issues or previously uncaptured use cases to ensure the compression algorithms are operationally relevant ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY23 decreased due to higher Air Force priorities.			
Accomplishments/Planned Programs Subtotals	9.528	11.523	0.100

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Data Compression program is conducted by Air Force Life Cycle Management Center/ Intelligence, Surveillance, and Reconnaissance and Special Operations Forces (AFLCMC/WIN). Acquisition strategy is to develop data compression hardware/software, and data compression standards for various ISR applications to include airborne, ground stations, data storage facilities, and exploitation tools. RDUCE will utilize existing contracts with full and open competition where appropriate. Integration will be accomplished by the requisite program offices.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LIDAR	Various	Various : Various	-	1.000	Nov 2020	1.715	Mar 2022	0.010	Apr 2023	-		0.010	Continuing	Continuing	-
SIGzip	Various	Various : Various	-	1.000	Feb 2021	1.000	Mar 2022	0.010	Apr 2023	-		0.010	Continuing	Continuing	-
EO/IR	Various	Various : Various	-	0.500	Mar 2021	1.200	Apr 2022	-		-		-	Continuing	Continuing	-
zPHD	Various	Various : Various	-	-		-		0.010	Apr 2023	-		0.010	Continuing	Continuing	-
		Subtotal	-	2.500		3.915		0.030		-		0.030	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Standardization Development	C/CPAF	Various : Various	-	-		-		0.040		-		0.040	0.000	0.040	-
Standardization Development (FLEX)	C/CPAF	Various : Various	-	0.600	Apr 2021	0.500	Feb 2022	0.000		-		0.000	Continuing	Continuing	-
Standardization Development (SARzip)	C/CPAF	Various : Various	-	0.600	Apr 2021	0.500	Feb 2022	0.000		-		0.000	Continuing	Continuing	-
Standardization Development (zPHD)	C/CPAF	Various : Various	-	0.500	Apr 2021	0.500	Feb 2022	0.000		-		0.000	Continuing	Continuing	-
New Mode Phase I	C/CPAF	Various : Various	-	0.100	Jan 2021	-		-		-		-	Continuing	Continuing	-
Standardization Development (SIGzip)	C/CPAF	Various : Various	-	-		-		0.000		-		0.000	Continuing	Continuing	-
		Subtotal	-	1.800		1.500		0.040		-		0.040	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ADDA Lab	C/CPAF	Various : Various	-	0.795	Mar 2021	0.796	Feb 2022	0.005	Apr 2023	-		0.005	Continuing	Continuing	-
COMPASE Lab	C/CPAF	Various : Various	-	0.200	Feb 2021	0.250	Jan 2022	0.005	Apr 2023	-		0.005	Continuing	Continuing	-
Integration Activities	C/CPAF	Various : Various	-	3.251	Nov 2020	4.047	Jan 2022	0.000	Apr 2023	-		0.000	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force			Date: April 2022
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305206F / *Airborne Reconnaissance Systems*	Project (Number/Name) 676025 / *Data Compression*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	4.246		5.093		0.010		-		0.010	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA: Other Govt Cost	Various	Not specified. : TBD	-	0.982	Oct 2020	1.015	Oct 2021	0.020	Oct 2022	-		0.020	Continuing	Continuing	-
		Subtotal	-	0.982		1.015		0.020		-		0.020	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	9.528		11.523		0.100		-		0.100	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676025 / *Data Compression*

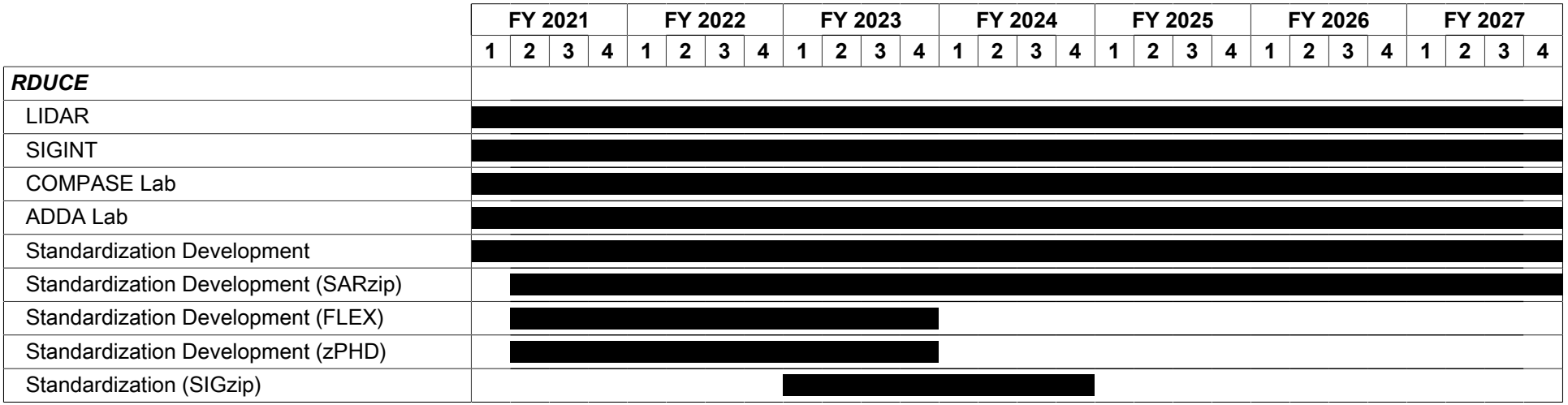

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0305206F / *Airborne Reconnaissance Systems*	**Project (Number/Name)** 676025 / *Data Compression*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RDUCE				
LIDAR	1	2021	4	2027
SIGINT	1	2021	4	2027
COMPASE Lab	1	2021	4	2027
ADDA Lab	1	2021	4	2027
Standardization Development	1	2021	4	2027
Standardization Development (SARzip)	2	2021	4	2027
Standardization Development (FLEX)	2	2021	4	2023
Standardization Development (zPHD)	2	2021	4	2023
Standardization (SIGzip)	1	2023	4	2024