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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0305202F / <i>Dragon U-2</i>
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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	-	36.593	35.846	20.170	0.000	20.170	20.604	24.089	0.000	0.000	0.000	137.302
674820: <i>Sensor Development</i>	-	36.593	35.846	20.170	0.000	20.170	20.604	24.089	0.000	0.000	0.000	137.302
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The U-2S Dragon Lady platform is a high-demand/low-density aircraft equipped with state-of-the-art sensor and data link systems providing mission essential Intelligence, Surveillance, and Reconnaissance (ISR) to the Combatant Commands, Joint and Combined forces, and the IC community in peacetime and wartime. The program supports core missions such as Sensitive Reconnaissance Operations (outlined in CJCSI 3250.01) supporting the National Defense Strategy, in addition to other missions that include execution of CCMD OPLANs and CONPLANs, Humanitarian Assistance/Disaster Response (HADR), Counter-Insurgency (COIN) operations and third-party treaty verification/monitoring via the OLIVE HARVEST mission.

In the FY23 budget, the Air Force will maintain operational capability of the U-2 platform. FY23 development funds will be dedicated and required to sustain NDAA directed capability, capacity, and safe and effective operations through the remainder of U-2 scheduled service. Efforts planned as part of the FY23 budget are required to ensure continuous worldwide operations through the remainder of U-2 service. Furthermore, FY23 efforts largely continue existing contracted efforts, which address safety of flight issues, reliability, Diminishing Manufacturing Sources and Material Shortages (DMSMS), maintainability, supportability, flight test, and integration of capability development activities in support of the broader ISR portfolio.

During this time, RDT&E efforts will address sustainment, modification, and modernization of sensors and associated mission equipment that face near-term sustainability and DMSMS. Also, RDT&E efforts focus on integrating/expanding platform capabilities within the larger ISR portfolio, enabling improved collection against emerging threats and capabilities through the remainder of scheduled U-2 operations; these efforts include (but are not limited to) Advanced Synthetic Aperture Radar System (ASARS) 2B/C, avionics and navigation tech refresh, mission planning software and datalink infrastructure upgrades, modernization of aircraft data links, next generation SIGINT, and quick reaction capabilities (QRCs).

Additionally, the U-2 program will continue to support emergent and/or experimental RDT&E efforts in support of Joint All-Domain Command and Control (JADC2) and Advanced Battle Management System (ABMS) as a platform surrogate for risk reduction.

Currently, the U-2 program provides funding for an ASARS acquisition effort. This contracted effort will design, fabricate, integrate, and demonstrate system capability enhancements for a high-altitude deep look SAR system. This mitigates a DMSMS issue with the current U-2 SAR sensor and processor and implements an open-architecture radar environment, of which portions are common with or transferable to the common ISR enterprise.

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This program element may include necessary civilian pay expenses required to manage, execute, and deliver Dragon U2 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 FY21 0.0M of 3600 funding was expended and in FY22 0.0M of 3600 funding 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.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	36.593	17.146	0.000	0.000	0.000
Current President's Budget	36.593	35.846	20.170	0.000	20.170
Total Adjustments	0.000	18.700	20.170	0.000	20.170
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	18.700			
• 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	20.170	0.000	20.170

Change Summary Explanation

The FY22 President's Budget submittal did not reflect FY23 through FY26 funding. Therefore, an explanation of the change between the two budget positions for FY23 cannot be made in a relevant manner.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
Title: U-2 Aircraft Update Block 20.1	36.043	17.120	19.509
Description: Aircraft sustainment and/or enhancement development includes activities such as, but not limited to: trade studies, analysis, preliminary system engineering, system and subsystem testing or demonstrations, sensor specification development, avionics system upgrades, emergency egress system sustainability and suitability effort, airframe Loads and Environment Spectra Survey (L/ESS) Compliance and Flight Data Recorder Installation, mission planning system migration, navigation system and stellar tracker initiatives, Open Mission Systems and Unmanned Aerospace Systems Command and Control Standard Initiative (OMS/UCI) standards compliance, GPS technical refresh, helmet and Full Pressure Suit technical refresh, and tactical data-link (L-16, IBS, IFDL, MADL, etc.) design and integration.			
FY 2022 Plans:			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Aircraft sustainment and/or enhancement efforts includes activities such as, but not limited to: trade studies, analysis, preliminary system engineering, system and subsystem testing or demonstrations, sensor specification development, avionics system upgrades, emergency egress system sustainability and suitability effort, mission planning system software and infrastructure migration, navigation system sustainability, advanced and agile systems, Open Mission Systems and Unmanned Aerospace Systems Command and Control Standard Initiative (OMS/UCI) standards compliance and integration, navigational technical refresh, helmet and Full Pressure Suit technical refresh, quick reaction capability (QRC) development, enhanced communications/SIGINT system sustainability and modernization, and tactical data-link (L-16, IBS, IFDL, MADL, etc.) efforts to meet operational requirements.</p> <p>FY 2023 Plans: Aircraft sustainment and/or enhancement efforts includes activities such as, but not limited to: trade studies, analysis, preliminary system engineering, system and subsystem testing or demonstrations, sensor specification development, avionics system upgrades, emergency egress system sustainability and suitability effort, mission planning system software and infrastructure migration, navigation system sustainability, advanced and agile systems, Open Mission Systems and Unmanned Aerospace Systems Command and Control Standard Initiative (OMS/UCI) standards compliance and integration, navigational technical refresh, helmet and Full Pressure Suit technical refresh, quick reaction capability (QRC) development, enhanced communications/SIGINT system sustainability and modernization, and tactical data-link (L-16, IBS, IFDL, MADL, etc.) efforts to meet operational requirements.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: 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.</p>				
<p>Title: U-2 Payload Update Block 20.1</p> <p>Description: Aircraft payload development supports sustainment and/or enhancement development includes activities such as, but not limited to: trade studies, analysis, preliminary system engineering, system and subsystem testing or demonstrations, sensor specification development, Advanced Synthetic Aperture Radar System (ASARS) development and test, SIGINT and multi-spectral sensor technical refresh integration and test, defensive systems, sensor range improvements, strategic and tactical data link (L-16, IBS, IFDL, MADL, etc.) design and integration.</p> <p>FY 2022 Plans: The bulk of FY22 funding will occur under the Aircraft Update Block addressing sustainability and DMSMS. Payload mod funding will be used to transition the ASARS-2C radar program onto the platform.</p> <p>FY 2023 Plans: The bulk of FY23 funding will occur under the Aircraft Update Block addressing sustainability and DMSMS.</p>		0.550	18.726	0.661

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
Payload mod funding will be used to transition the ASARS-2C radar program onto the platform.				
FY 2022 to FY 2023 Increase/Decrease Statement: 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.				
Accomplishments/Planned Programs Subtotals		36.593	35.846	20.170
D. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
E. Acquisition Strategy Acquisition strategy for efforts to support aircraft modification and/or enhancement efforts will be assessed as required, based on current program activities.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force **Date:** April 2022

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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development	C/CPAF	Not specified. : TBD	-	0.000		-		-		-		-	0.000	0.000	-
ASARS Phase 1 Enhancements Design	SS/CPFF	Raytheon/Lockheed Martin : El Segundo, CA	-	9.500	Mar 2021	18.900	Nov 2021	-		-		-	0.000	28.400	0.000
ASARS Phase 2 Integration & Demonstration	SS/CPFF	Raytheon/Lockheed Martin Aeronautics : El Segundo, CA	-	0.000		0.146	Dec 2021	5.370	Dec 2022	-		5.370	0.000	5.516	0.000
Flight Test Support	SS/CPFF	Lockheed Martin Aeronautics : Palmdale, CA	-	0.000		-		-		-		-	0.000	0.000	0.000
Data Links Modernization	SS/CPFF	L3 Communications : Salt Lake City, UT	-	3.700	Mar 2021	-		3.400		-		3.400	0.000	7.100	0.000
Navigation System	SS/CPFF	Lockheed Martin Aeronautics : Palmdale, CA	-	0.000		-		-		-		-	0.000	0.000	0.000
Emergency Egress System Sustainability and Suitability Effort	SS/CPFF	Lockheed Martin Aeronautics : Palmdale, CA	-	0.000		-		-		-		-	0.000	0.000	0.000
Avionics Technical Refresh	SS/CPFF	LMA : Palmdale, CA	-	16.400	Dec 2020	16.500	Nov 2021	11.400	Nov 2022	-		11.400	0.000	44.300	0.000
Loads and Environment Spectra Survey (L/ESS) Compliance and Flight Data Recorder Installation	SS/CPFF	LMA : Palmdale, CA	-	0.000		-		-		-		-	0.000	0.000	0.000
Electro-Optical/Infrared Sensor Technical Refresh	SS/CPFF	Lockheed Martin Aeronautics : Palmdale, CA	-	1.900	Mar 2021	-		-		-		-	0.000	1.900	0.000
Mission Planning Software Technical Refresh	TBD	TBD : TBD	-	0.000		-		-		-		-	0.000	0.000	0.000
Electronic Warfare Suite (EWS) Advanced Threat	SS/CPFF	BAE : Nashua, NY	-	3.900	Mar 2021	0.300	Nov 2021	-		-		-	0.000	4.200	22.100
SIGINT Modernization	C/CPAF	SwRI : Dayton, OH	-	1.193	Aug 2021	-		-		-		-	Continuing	Continuing	-
Subtotal			-	36.593		35.846		20.170		-		20.170	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force **Date:** April 2022

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	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>U-2 Dragon Lady</i>	
Advanced Synthetic Aperture Radars System (ASARS)	
Data Links Modernization	
Navigation System	
Emergency Egress System Sustainability and Suitability Effort	
Avionics Tech Refresh	

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force **Date:** April 2022

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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>U-2 Dragon Lady</i>				
Advanced Synthetic Aperture Radars System (ASARS)	1	2021	4	2025
Data Links Modernization	1	2021	4	2024
Navigation System	1	2021	3	2023
Emergency Egress System Sustainability and Suitability Effort	1	2021	4	2023
Avionics Tech Refresh	1	2021	4	2024