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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 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604735F / <i>Combat Training Ranges</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	-	23.054	23.980	91.284	0.000	91.284	182.696	234.578	54.118	61.077	Continuing	Continuing
652286: <i>Combat Training Range Equipment</i>	-	23.054	23.980	91.284	0.000	91.284	182.696	234.578	54.118	61.077	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 5, PE 0604735F, project 652286, P6 Combat Training System (P6 CTS), is a new start.

A. Mission Description and Budget Item Justification

COMBAT TRAINING RANGES (CTR): Portfolio provides electronic warfare equipment and support to Air Force combat training ranges for training, testing, and evaluation of aircrews. Development and integration efforts include: aircraft pods, radar emitters, advanced radar emitters, communication jammers, command and control and debrief capability, and instrumentation equipment. All development efforts support USAF aircraft for Joint, Coalition, and Live Virtual Constructive (LVC) training events.

ADVANCED RADAR THREAT SYSTEM (ARTS): The ARTS program will design, develop, and test threat systems based on replicating advanced foreign fielded Surface-to-Air Missile (SAM) radar and Electronic Warfare (EW) threat systems. The ARTS variants will be used at Department of Defense (DoD) test and training ranges for 4th generation, 5th generation, and 5th generation plus aircrew training and tactics development. ARTS variants are also developed for (LVC) integration and full simulation training. Efforts include but are not limited to: research, studies, technology development, engineering, and manufacturing advanced radar emitters.

MODERNIZATION RANGE THREATS SYSTEMS (RTS): The RTS program supports upgrading and modifying legacy range threat systems to provide combat training relevancy and enhanced systems capabilities. Legacy systems include Multiple Threat Emitter System (MUTES), Miniature Multiple Threat Emitter System (Mini-MUTES), Modular Threat Emitter (MTE) system, Tactical Radar Threat Generator (TRTG) system, Band Simulator, Unmanned Modular Threat Emitter (UMTE) system, and Joint Threat Emitter (JTE) system.

LIVE MISSION OPERATIONS CAPABILITY (LMOC): LMOC is an effort to modernize range control centers with common hardware and software that can support live-synthetic training missions. LMOC will provide a node-based enterprise that integrates all range system capabilities, including pre/post mission coordination, in a multi-level secure environment to enable blended live-synthetic training for 4th/5th generation aircraft and aircrew.

P5 COMBAT TRAINING SYSTEM (P5 CTS): P5 CTS is a legacy aircraft instrumentation pod used by 4th generation platforms and F-35 for training exercises. Investments include upgrading pod capability to operate in a secure environment.

P6 COMBAT TRAINING SYSTEM (P6 CTS): P6 CTS is a new start effort to replace the existing P5 CTS pods. P6 CTS will resolve existing critical training capability gaps and will enable comprehensive, realistic training environments for 4th Gen - 5th Gen aircraft systems. Key upgrades include a trusted operating system, Multiple

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Level Security (MLS) architecture, Type 1 encryption of over-air data, and increased processing capability. P6 CTS investment will support a robust Air-to-Air and Air-to-Ground combat training environment and provide a growth path to LVC exercises.

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 FY21 \$0.076M was expended for civilian pay expenses in this program element, and in FY22 \$0.900M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	23.854	23.980	0.000	0.000	0.000
Current President's Budget	23.054	23.980	91.284	0.000	91.284
Total Adjustments	-0.800	0.000	91.284	0.000	91.284
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.800	0.000			
• Other Adjustments	0.000	0.000	91.284	0.000	91.284

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 652286: *Combat Training Range Equipment*

 Congressional Add: *Training Range Instrumentation*

Congressional Add Subtotals for Project: 652286

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	15.000	0.000
	15.000	0.000
	15.000	0.000

Change Summary Explanation

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.

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Title: P5 Combat Training System (CTS)</p> <p>Description: P5 CTS is an aircraft instrumentation pod used by 4th generation platforms and F-35. Funding supports upgrading the P5 CTS pod against GPS jamming during training events.</p> <p>FY 2022 Plans: N/A</p> <p>FY 2023 Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>		0.500	0.000	0.000
<p>Title: Modernization Range Threat Systems (RTS)</p> <p>Description: Modernization Systems efforts support upgrading and modifying legacy range threat systems to provide combat training relevancy and enhanced systems capabilities. Enhancements focus on modifying systems to accurately simulate foreign threat systems faced by combat aircrews.</p> <p>FY 2022 Plans: Funding supports upgrading the Miniature Multiple Threat Emitter System for threat relevancy during combat training missions and simulated surface to air missiles (SAM) warfare training. The upgrade includes a redesign of specific components eliminating hardware issues.</p> <p>FY 2023 Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding decreased due to the Miniature Multiple Threat Emitter System completing RDT&E efforts.</p>		0.000	0.100	0.000
<p>Title: Advanced Radar Threat System-Variant 1 (ARTS-V1)</p> <p>Description: ARTS-V1 program will design, develop, build, and test radar threat systems based on advanced strategic, long-range, re-locatable foreign fielded SAM radar threat systems. ARTS-V1 will leverage an existing DoD test resource development program to reduce non-recurring development cost, minimize schedule risk, and promote range interoperability between test and training. The focus of the program is to develop realistic radar threat systems meant to stress 5th Generation aircraft capabilities.</p> <p>FY 2022 Plans:</p>		6.429	0.314	0.100

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Funding supports spares used in the development of the Production Representative Article (PRA) and further development above threshold requirements. Efforts may include but not limited to furthering development associated with objective requirements radar cross section shells. Program transitioned from PRA development to low rate initial production in FY22.</p> <p>FY 2023 Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding decreased due to ARTS-V1 transitioning to production.</p>				
<p>Title: Advanced Radar Threat System-Variant 2 (ARTS-V2)</p> <p>Description: ARTS-V2 program will design, develop, build, and test radar emitter systems based on an advanced tactical, mobile, short/medium range foreign fielded SAM radar threat system. Development efforts include ARTS-V2 integration into LVC architecture, ongoing analyses, studies, developing high-fidelity surrogate targets, and risk reduction.</p> <p>FY 2022 Plans: Funding supports, but is not limited to, additional testing events.</p> <p>FY 2023 Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding decreased due to ARTS-V2 transitioning to production.</p>		0.925	0.100	0.000
<p>Title: Advanced Radar Threat System-Variant 3 (ARTS-V3)</p> <p>Description: ARTS-V3 program will design, develop, build, and test advanced Surface-to-Air Missile (SAM) radar threat systems. ARTS-V3 will replicate strategic/tactical threats at the fidelity necessary for 5th generation and 5th generation plus aircraft supporting multi-domain platform engagements. The ARTS-V3 requirement is to develop a modular radar threat system that has a growth path to replicate multiple advanced SAM threats and support Live Virtual Constructive (LVC) training. Efforts include but are not limited to: development of high-fidelity surrogate targets, development of threat systems, analyses, studies, and efforts focused on integrating ARTS-V3 into LVC architectures.</p> <p>FY 2022 Plans:</p>		0.100	23.366	73.693

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Funding supports further technology maturation leading to a full Production Representative Article (PRA) development. Activities include but are not limited to technical design reviews, digital engineering, subscale prototype efforts, integration, fabrication, and testing.</p> <p>FY 2023 Plans: Finalize developmental efforts for the initial ARTS-V3 production representative article (PRA) for developmental and operational testing. Efforts include but are not limited to the following: prototype development, engineering, manufacturing, training range integration, interfaces, software development, and developmental and operational tests.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased to finalize the development of the initial ARTS-V3 representative system for developmental and operational testing.</p>				
<p>Title: Advanced Radar Threat System-Variant 4 (ARTS-V4)</p> <p>Description: ARTS-V4 program will design, develop, build, and test modern surface-to-air radar systems replicating tactical highly mobile threats at the fidelity necessary to stress current EW systems, 5th Generation and beyond air platform engagements, and be integrated into a future CAF LVC system. The ARTS-V4 system will create a relevant combat training threat system that is dynamic and represents adversary forces. Additionally funding will support ongoing analyses and studies focused on integrating ARTS into regional range and LVC architectures.</p> <p>FY 2022 Plans: N/A</p> <p>FY 2023 Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>		0.100	0.000	0.000
<p>Title: Live Mission Operations Capability (LMOC)</p> <p>Description: LMOC is an effort to modernize training range control centers with common hardware and software that can support live-synthetic training missions. LMOC provides a node-based software enterprise that integrates all range system capabilities, including pre/post mission coordination, in a multi-level secure environment to enable blended live-synthetic training for 4th/5th generation aircraft and aircrew.</p> <p>FY 2022 Plans:</p>		0.000	0.100	4.864

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Funding supports development of a common hardware/software platform called "WarRoom" to each training location. Funding will also be used to fund a government Special Access Programs Security Officer dedicated to LMOC training systems.</p> <p>FY 2023 Plans: Funding supports continued development of "WarRoom" for all fielded locations, automated mission planning and Multi-Level Security development.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased to support major LMOC WarRoom upgrades providing enhanced capabilities. Increased funding also supports development of a multi-level security architecture to enable tagging/processing of data at multiple security classifications.</p>				
<p>Title: P6 Combat Training System (P6 CTS)</p> <p>Description: P6 CTS is aircraft instrumentation pod that will replace the existing P5 CTS pods used for training exercises between 4th and 5th generation platforms. P6 CTS will resolve existing critical training capability gaps and will enable comprehensive, realistic training environments for 4th Gen - 5th Gen aircraft systems. Key upgrades include the following: trusted operating system, Multiple Level Security (MLS) architecture, Type 1 encryption of over-air data, and increased processing capability.</p> <p>FY 2022 Plans: N/A</p> <p>FY 2023 Plans: Funds will support but is not limited to product development, test, and aircraft integration on the F-15 and F-16. Funds will also support integrating P6 ground stations with select training ranges.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased due to the increased level of test and evaluation activities.</p>		0.000	0.000	12.627
Accomplishments/Planned Programs Subtotals		8.054	23.980	91.284
		FY 2021	FY 2022	
Congressional Add: Training Range Instrumentation		15.000	0.000	
<p>FY 2021 Accomplishments: FY21 funding will be used for the following efforts: --ARTS-V3 funds will support live SAM-threat test and combat training missions to be delivered to the Gulf Coast Range Complex.</p>				

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	FY 2021	FY 2022
--P5 to P6 funds will focus on Time-Space-Position-Information (TSPI) infrastructure to support emitters, electronic warfare, and live training for 4th and 5th Gen participants. The main effort will be on USAF unique requirements for the P6 to fully replace P5 capability and meet USAF unique mission-sets. --LMOC funds will develop live and constructive training infrastructure within the region to support all aspects of live training for 4th and 5th Generation platforms. FY 2022 Plans: N/A		
Congressional Adds Subtotals	15.000	0.000

D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 Line Item 834190: <i>Combat Training Ranges</i>	193.185	343.088	148.943	-	148.943	113.954	95.202	215.659	221.377	Continuing	Continuing
• OPAF 05 Line Item 861900: <i>Spares and Repair Parts</i>	8.241	2.866	11.241	-	11.241	0.742	0.758	0.780	0.797	Continuing	Continuing
• APAF 07 Line Item 000075: <i>Other Production Charges</i>	3.495	14.784	21.973	-	21.973	55.093	102.800	97.000	57.010	Continuing	Continuing

Remarks

E. Acquisition Strategy

The acquisition strategy varies by effort. Overall strategy is competition focused, with the use of but not limited to other transaction authority, cost plus and fixed price contracts.

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

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604735F / <i>Combat Training Ranges</i>	Project (Number/Name) 652286 / <i>Combat Training Range Equipment</i>
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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			
Advanced Radar Threat System-Variant 1 (ARTS-V1) Development	Various	Georgia Tech Research : Pax River, MD	-	5.468	Oct 2020	0.251	Nov 2021	0.100	Nov 2022	-		0.100	Continuing	Continuing	-
Advanced Radar Threat System-Variant 2 (ARTS-V2)	C/FPIF	Lockheed Martin : Grand Prairie, TX	-	0.246	Sep 2021	0.080	Dec 2021	-		-		-	Continuing	Continuing	-
Advanced Radar Threat System-Variant 3 (ARTS-V3) Development	C/FFP	SAAB, LM, NG, DYNETICS : Various	-	11.620	Dec 2021	18.706	Jan 2022	64.484	Apr 2023	-		64.484	Continuing	Continuing	-
Advanced Radar Threat System-Variant 4 (ARTS-V4) Development	Various	Various : Hill AFB, UT	-	0.310	May 2021	0.081	Nov 2021	-		-		-	Continuing	Continuing	-
P6 Combat Training System	Various	Various : Various	-	-		-		2.000	Mar 2023	-		2.000	Continuing	Continuing	-
P5 Combat Training System GPS Contested	SS/FFP	Cubic Corporation : San Diego, CA	-	0.215	Jan 2021	-		-		-		-	Continuing	Continuing	-
Modernization Systems	Various	Various : Hill AFB, UT	-	-		0.080	Nov 2021	-		-		-	Continuing	Continuing	-
Live Mission Operation Capability (LMOC)	Various	Georgia Tech Research : Various	-	1.068	May 2021	-		4.700	Jan 2023	-		4.700	Continuing	Continuing	-
Subtotal			-	18.927		19.198		71.284		-		71.284	Continuing	Continuing	N/A

Support (\$ 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			
Advanced Radar Threat Systems (Direct Msn Spt)	Various	Various : Various	-	2.016	Dec 2020	0.250	Dec 2021	2.000	Dec 2022	-		2.000	Continuing	Continuing	-
Advanced Radar Threat Systems (Direct Cite Authority Civ Pay)	Various	Various : Various	-	0.076	Dec 2020	0.900	May 2022	1.000	Feb 2023	-		1.000	Continuing	Continuing	-
Subtotal			-	2.092		1.150		3.000		-		3.000	Continuing	Continuing	N/A

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

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604735F / <i>Combat Training Ranges</i>	Project (Number/Name) 652286 / <i>Combat Training Range Equipment</i>
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Test and Evaluation (\$ 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			
Advanced Radar Threat Systems (Direct Msn Spt)	C/Variou	Not specified. : TBD	-	0.770	Oct 2020	1.473	Oct 2021	3.500	Dec 2022	-		3.500	Continuing	Continuing	-
P6 Combat Training System	C/Variou	Not specified. : TBD	-	-		-		9.750	Jan 2023	-		9.750	Continuing	Continuing	-
Subtotal			-	0.770		1.473		13.250		-		13.250	Continuing	Continuing	N/A

Management Services (\$ 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			
Advanced Radar Threat Systems (Program Support Cost)	Various	Various : Hill AFB, UT	-	1.265	May 2021	2.050	May 2022	3.000	Dec 2022	-		3.000	Continuing	Continuing	-
Live Mission Operations Capability (Program Support Cost)	Various	AFLCMC/XA : Hill AFB, UT	-	-		0.100	Dec 2021	0.300	Nov 2022	-		0.300	Continuing	Continuing	-
P6 Combat Training System (Program Support Cost)	Various	Various : Hill AFB, UT	-	-		-		0.450	Feb 2023	-		0.450	Continuing	Continuing	-
Modernization Systems (Program Support Cost)	Various	AFLCMC/XA : Hill AFB, UT	-	-		0.009	Oct 2021	-		-		-	Continuing	Continuing	-
Subtotal			-	1.265		2.159		3.750		-		3.750	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		-	23.054	23.980	91.284	-	91.284	Continuing	Continuing

Remarks
 "FINANCIAL PERFORMANCE: "Advanced Radar Threat System - Variant Two (ARTS-V2) is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the ARTS-V2 EMD contract is a FPIF contract with progress payments. 20 percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health."

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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

Combat Training Range Equipment	
P5CTS Development	[REDACTED]
-- P5 CTS GPS-Contested Training Operation Capability	[REDACTED]
P6 CTS - Integration on USAF Aircraft	[REDACTED]
-- P6 CTS - F-15/16 Aircraft Test & Integration	[REDACTED]
Advanced Radar Threat System-Variant 1(ARTS-V1) EMD Phase	[REDACTED]
-- ARTS-V1 PRA Contract	[REDACTED]
-- ARTS-V1 DT-E and OT-E	[REDACTED]
-- ARTS-V1 Milestone C	[REDACTED]
Advanced Radar Threat System-Variant 2 (ARTS-V2) EMD Phase	[REDACTED]
-- ARTS-V2 PRA Contract	[REDACTED]
-- ARTS-V2 DT-E and OT-E	[REDACTED]
-- ARTS-V2 Milestone C	[REDACTED]
Advanced Radar Threat System-Variant 3 (ARTS-V3) System Spec Definition	[REDACTED]
-- ARTS-V3 Intelligence Assessment	[REDACTED]
-- ARTS-V3 Intelligence Model Development	[REDACTED]
Advance Radar Threat System (ARTS-V3) Development	[REDACTED]
-- Digital Modeling and Subscale Prototype Efforts	[REDACTED]

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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
Combat Training Range Equipment				
P5CTS Development	1	2021	4	2022
-- P5 CTS GPS-Contested Training Operation Capability	1	2021	4	2022
P6 CTS - Integration on USAF Aircraft	2	2023	2	2025
-- P6 CTS - F-15/16 Aircraft Test & Integration	2	2023	2	2025
Advanced Radar Threat System-Variant 1(ARTS-V1) EMD Phase	1	2021	2	2022
-- ARTS-V1 PRA Contract	1	2021	3	2022
-- ARTS-V1 DT-E and OT-E	3	2021	2	2022
-- ARTS-V1 Milestone C	2	2021	4	2021
Advanced Radar Threat System-Variant 2 (ARTS-V2) EMD Phase	1	2021	2	2022
-- ARTS-V2 PRA Contract	1	2021	2	2022
-- ARTS-V2 DT-E and OT-E	1	2021	2	2022
-- ARTS-V2 Milestone C	4	2021	4	2021
Advanced Radar Threat System-Variant 3 (ARTS-V3) System Spec Definition	1	2021	3	2022
-- ARTS-V3 Intelligence Assessment	1	2021	4	2021
-- ARTS-V3 Intelligence Model Development	1	2021	3	2022
Advance Radar Threat System (ARTS-V3) Development	4	2021	2	2025
-- Digital Modeling and Subscale Prototype Efforts	4	2021	3	2023
-- ARTS-V3 Request For Proposal (RFP) for Production Representative Article (PRA)	3	2022	3	2022
-- ARTS-V3 PRA Contract Award	2	2023	2	2023
-- ARTS-V3 PRA Development	2	2023	2	2025
Modernization Systems	1	2022	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force		Date: April 2022
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
-- Mini-MUTES Upgrade	1	2022	4	2022
Live Mission Operations Capability (LMOC)	1	2022	4	2024