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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	620.115	723.107	950.815	0.000	950.815	1,010.212	624.664	400.669	463.007	Continuing	Continuing
670132: B-52 Mission Employment Trainer	-	0.000	0.000	15.335	0.000	15.335	0.000	0.000	0.000	0.000	Continuing	Continuing
671803: B-52 AFMC Test Assets	-	3.262	4.369	1.503	0.000	1.503	1.549	1.511	1.471	2.986	Continuing	Continuing
671805: B-52 VLF/LF Modernization	-	9.520	4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.520
671810: B-52 AEHF Integration	-	32.657	63.190	102.924	0.000	102.924	142.430	13.297	0.907	0.000	0.000	355.405
675039: B-52 System Improvements	-	32.767	23.150	15.024	0.000	15.024	4.023	0.000	0.000	0.000	0.000	74.964
675055: GPS-IU	-	3.193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.193
675056: B-52 Radar Modernization Program (RMP)	-	136.862	240.176	204.349	0.000	204.349	128.688	37.977	0.000	0.000	0.000	748.052
675057: B-52 Low Cost Improvement (LCI)	-	0.058	0.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.760
675129: B-52 CERP	-	385.640	379.401	576.016	0.000	576.016	650.523	539.080	364.894	425.370	Continuing	Continuing
675160: B-52 Crypto Modernization	-	16.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.153
675165: B-52 Quad Crew	-	0.003	8.119	30.652	0.000	30.652	41.964	0.000	0.000	0.000	0.000	80.738
676039: B-52 Airspace Compliance	-	0.000	0.000	5.012	0.000	5.012	41.035	32.799	33.397	34.651	Continuing	Continuing

Note
 This program, BA 7, PE 0101113F, project , Mission Employment Trainer, is a new start.
 This program, BA 7, PE 0101113F, project , Airspace Compliance (M-Code), is a new start.

A. Mission Description and Budget Item Justification

The B-52H is a long-range bomber capable of delivering the widest variety of nuclear and conventional standoff and direct attack munitions in the Air Force. The Air Force plans to fly the B-52H to 2050.

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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 0101113F / <i>B-52 Squadrons</i>
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The B-52H modernization efforts are needed to perform current and future wartime missions and to ensure relevance, lethality and survivability. Additionally, modernization projects alleviate aircraft obsolescence issues due to Diminishing Manufacturing Sources and Material Shortages (DMSMS) while at the same time providing improved capabilities to the B-52H weapon system that require significant hardware and software development and testing.

B-52 funding also supports innovation activities including, but not limited to tech demonstrations, studies, analyses, requirements definition, and quick-reaction capability prototypes/demonstrations to accelerate planning for technology transition, technology insertion, and future acquisition programs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 20.576M was expended for civilian pay expenses in this program element, and in FY23 25.415M is forecasted for civilian pay expenses in this program element.

This FY 2024 funding request was reduced by 15.300 million to account for the availability of prior year execution balances.

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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	646.811	770.313	732.254	0.000	732.254
Current President's Budget	620.115	723.107	950.815	0.000	950.815
Total Adjustments	-26.696	-47.206	218.561	0.000	218.561
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-47.206			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-7.756	0.000			
• SBIR/STTR Transfer	-18.940	0.000			
• Other Adjustments	0.000	0.000	218.561	0.000	218.561

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

Project: 675039: *B-52 System Improvements*

 Congressional Add: *AFGSC Innovation Hub*

 Congressional Add: *B-52 Training Automation*

	FY 2022	FY 2023
Congressional Add: <i>AFGSC Innovation Hub</i>	10.000	10.000
Congressional Add: <i>B-52 Training Automation</i>	2.000	0.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add Subtotals for Project: 675039	12.000	10.000
Congressional Add Totals for all Projects	12.000	10.000

Change Summary Explanation

FY22 -\$26.696M adjustment is for reprogrammings and Small Business Innovation Research (SBIR)

FY23 -\$47.206M adjustment is congressional marks for program delays

FY24 +\$218.561M adjustment is to support CERP-related activities that include procuring test engines, acquiring long-lead material, sub-system testing, additional manpower resources, and supporting sub-system critical design efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 670132 / B-52 Mission Employment Trainer
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
670132: B-52 Mission Employment Trainer	-	0.000	0.000	15.335	0.000	15.335	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
This program, BA 7, PE 0101113F, project , Mission Employment Trainer, is a new start.

A. Mission Description and Budget Item Justification

The B-52 Mission Employment Trainer (MET) program is for the development of the B-52 Family of Systems (FoS) Trainers. The FoS Trainers includes, but is not limited to, new training devices and Systems Integration Labs (SIL) that will augment and eventually replace the existing B-52 legacy training systems and SIL that are antiquated, not concurrent with the B-52 aircraft, and cost-prohibitive for modernization or sustainment. The current B-52 trainers do not completely satisfy the training tasks specified in various course syllabus. In conjunction with the AFGSC A3/6 signed Future Training Concept, this new FoS approach will train Air Force personnel utilizing low, medium, and high-fidelity training devices. These training devices will leverage a common software architecture, include modularity and open mission systems, be rapidly reprogrammable and network capable, enable accelerated future upgrades, and support affordable sustainment. This FoS concept fulfills the future training needs of the formal training unit (FTU), combat units, and weapons school students spanning the continuum of learning. These new devices/trainers are of paramount importance because of their critical role to future B-52 combat capabilities that must advance through 2050.

Initial funds will be used to develop a B-52 medium fidelity training device that will provide an interactive and immersive environment to provide proficiency-based training for full-crew mission training and coordination, and related programmatic support. The current direction with the medium fidelity device will reuse a virtualized version of the aircraft's Operational Flight Programs (OFP) and will execute on commercial-grade, off-the-shelf computational hardware to offer a standalone, integrated, and appropriate simulated training environment. The virtualized OFP software will be developed to run on multiple training devices of varying physical fidelity. The medium fidelity device, and subsequent higher fidelity devices, will be rapidly reconfigurable to different aircraft configurations, be mobile, and capable of worldwide deployment. It lays the groundwork for an open system architecture that allows a continual roadmap to aircraft concurrency, upgradability, and feature sets that can be added in a cost-effective manner, keeping pace with the speed of technology and future B-52 aircraft upgrades.

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness. Funds may be used to purchase long-lead parts following completion of Preliminary Design Review (PDR).

As MET Integration provides future communication growth to the B-52, emerging security/certification requirements (nuclear certification, cyber security, program protection, crypto modernization, etc.) as well as other aircraft upgrades may require studies and/or support for potential impact to MET. Funds may be used to conduct development and test activities.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 670132 / B-52 Mission Employment Trainer
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0M was expended for civilian pay expenses in this program element, and in FY23 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Title: Mission Employment Trainer</p> <p>Description: Mission Employment Trainer (MET) is a virtual flight simulator that provides necessary pilot training for various environments and conditions. The MET will include a modern, advanced Operational Flight Program that is rapidly reprogrammable and support simulated mission tasking.</p> <p>FY 2024 Plans: The Mission Employment Trainer project will start software and hardware development activities required to build a prototype training simulator.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding increased due to supporting the initial phase of software/hardware development required for building a prototype training simulator.</p>	-	-	15.335
Accomplishments/Planned Programs Subtotals	-	-	15.335

C. Other Program Funding Summary (\$ in Millions)
N/A

Remarks

D. Acquisition Strategy
The Mission Employment Trainer program intends to use a Small Business Innovative Research (SBIR) contract to develop the required software and hardware required for a modern B-52 virtual training system. The SBIR effort will support hardware/software development and incorporating Operational Flight Programs into the training simulator.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force			Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 670132 / B-52 Mission Employment Trainer	

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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>Mission Employment Trainer Integration</i>	
Software Development	██████████
Hardware Development	████████████████████

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 670132 / <i>B-52 Mission Employment Trainer</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Mission Employment Trainer Integration</i>				
Software Development	2	2024	4	2024
Hardware Development	2	2024	3	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons				Project (Number/Name) 671803 / B-52 AFMC Test Assets			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
671803: B-52 AFMC Test Assets	-	3.262	4.369	1.503	0.000	1.503	1.549	1.511	1.471	2.986	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The B-52 AFMC Test Assets project will provide funding for the test aircraft, manpower, and facilities at the Air Force Test Center located at Edwards AFB, California. The project will support the development testing and Bomber Modular Data Acquisition System (BMDAS) integration on B-52 test aircraft. In addition, the project will include Programmed Depot Maintenance (PDM) costs supporting test aircraft modifications occurring at Tinker AFB, OK.

Costs include, but are not limited to, any analysis, documentation, and related expenses necessary to establish a program of record and support the B-52 weapon system. Additionally, other costs include Program Management Administration (PMA) and centralized support and initiatives for anticipated weapon system enhancements (to include efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total cost of ownership).

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT), and safety of flight issues. Additionally, funds may accommodate PMA and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0M was expended for civilian pay expenses in this program element, and in FY23 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: B-52 AFMC Test Aircraft Asset Support	3.262	4.369	1.503
Description: B-52 Test Support provides funding for the test aircraft, manpower, Bomber Modular Data Acquisition System (BMDAS), and facilities at the Air Force Test Center, Edwards AFB. This will support the developmental testing and sustainment needs of the B-52.			
FY 2023 Plans: Continue to provide funding for the test aircraft, manpower, BMDAS, and facilities at the Air Force Test Center, Edwards AFB. This supports the developmental testing, facility, and sustainment needs of the B-52.			
FY 2024 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 671803 / <i>B-52 AFMC Test Assets</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Will continue to provide funding for the test aircraft, manpower, BMDAS, and facilities at the Air Force Test Center, Edwards AFB. This will support the developmental testing, facility, and sustainment needs of the B-52.			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Funding decreased due to workload demand and required test support.			
Accomplishments/Planned Programs Subtotals	3.262	4.369	1.503

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

N/A

Remarks

D. Acquisition Strategy

Funding sent to Edwards AFB via MIPR and Project Orders for the test aircraft, manpower, BMDAS and facilities at the Air Force Test Center located at Edwards AFB, California.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 671803 / <i>B-52 AFMC Test Assets</i>
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	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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>AFMC Test Aircraft Support - 0036</i>	
Test Support	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 671803 / <i>B-52 AFMC Test Assets</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>AFMC Test Aircraft Support - 0036</i>				
Test Support	1	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 671805 / B-52 VLF/LF Modernization
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
671805: B-52 VLF/LF Modernization	-	9.520	4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.520
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The B-52 Very Low Frequency/Low Frequency (VLF/LF) Modernization program integrates a receive-only, low frequency receiver and antenna subsystem to provide a secure, survivable strategic nuclear communication capability for the B-52. This project will consist of integrating an existing VLF/LF terminal into the B-52. Integration includes Group A wiring, rack and antenna, and the Group B terminal Line Replaceable Unit (LRU).

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

As the VLF/LF provides future communication growth to the B-52, emerging security/certification requirements (nuclear certification, cyber security, program protection, crypto modernization, etc.) as well as other aircraft upgrades may require studies and/or support for potential impact to VLF/LF.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0M was expended for civilian pay expenses in this program element, and in FY23 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: B-52 Very Low Frequency/Low Frequency (VLF/LF)	9.520	4.000	-
Description: Provides secure, survivable, receive-only strategic nuclear communication for the B-52			
FY 2023 Plans: Continue Engineering and Manufacturing Development phase to support fielding decision. Accomplish aircraft modification and testing.			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to the program transitioning from development efforts to production.			
Accomplishments/Planned Programs Subtotals	9.520	4.000	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 671805 / B-52 VLF/LF Modernization
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 B05200: BP11 Production	20.137	11.489	26.513	-	26.513	13.052	6.437	3.331	0.370	Continuing	Continuing
• APAF 06 000999: Initial Spares/Repair Parts	-	2.652	2.724	-	2.724	3.381	-	-	-	0.000	8.757

Remarks

D. Acquisition Strategy

The Milestone Decision Authority (MDA) approved the 25 January 2019 decision of the B-52 VLF/LF Acquisition Strategy Panel (ASP), which authorized the program to enter into the EMD phase with the Original Equipment Manufacturer (OEM). The program office received a proposal from the OEM on 16 August 2019. The EMD Contract was awarded 22 January 2020. The Acquisition Program Baseline (APB) was signed April 2020.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 671805 / B-52 VLF/LF Modernization
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Collins Environmental Study	SS/FFP	Environmental Study : Richardson, TX	-	0.290	Mar 2022	-		-		-		-	0.000	0.290	-
VLF/LF EMD	SS/CPFF	Various : Oklahoma, OK	-	6.373	Jan 2022	1.826	Mar 2023	-		-		-	0.000	8.199	-
Subtotal			-	6.663		1.826		-		-		-	0.000	8.489	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
VLF/LF Program Office Support	Various	Various : TBD	-	1.285	Jul 2022	1.200	Mar 2023	-		-		-	0.000	2.485	-
Subtotal			-	1.285		1.200		-		-		-	0.000	2.485	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
VLF/LF Test	PO	Not specified. : TBD	-	0.372	Feb 2022	0.974	Oct 2022	-		-		-	0.000	1.346	-
VLF/LF Certifications	TBD	Not specified. : TBD	-	1.200	May 2022	-		-		-		-	0.000	1.200	-
Subtotal			-	1.572		0.974		-		-		-	0.000	2.546	N/A

			Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	9.520	4.000	-	-	-	0.000	13.520	N/A

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>B-52 VLF/LF Modernization</i>				
EMD	1	2022	4	2023
MS C	4	2023	4	2023
IOC	2	2025	2	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons				Project (Number/Name) 671810 / B-52 AEHF Integration			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
671810: B-52 AEHF Integration	-	32.657	63.190	102.924	0.000	102.924	142.430	13.297	0.907	0.000	0.000	355.405
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The B-52 Advanced Extremely High Frequency (AEHF) Integration satellite communications (SATCOM) system provides a survivable, low probability of intercept/detection, high bandwidth system that ensures secure intra/inter-flight and two-way command and control communications in the modern anti-access/aerial denial battle space. This communications upgrade replaces the Military Strategic and Tactical Relay (MILSTAR) Ultra High Frequency (UHF) SATCOM capability (MILSTAR is nearing system end of life) on the B-52. The AEHF Integration effort will integrate the radio, antenna and system components required to provide two-way EHF communication for the B-52.

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

As AEHF Integration provides future communication growth to the B-52, emerging security/certification requirements (nuclear certification, cyber security, program protection, crypto modernization, etc.) as well as other aircraft upgrades may require studies and/or support for potential impact to AEHF. Funds will be used to conduct development and test activities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 1.133M was expended for civilian pay expenses in this program element, and in FY23 2.40M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: B-52 AEHF Integration	32.657	63.190	102.924
Description: The B-52 Advance Extremely High Frequency (AEHF) Integration SATCOM system provides a survivable, low probability of intercept/detection, high bandwidth system that ensures secure intra/inter-flight and two-way command and control communications in the modern anti-access/aerial denial battle space. This communications upgrade replaces the Military Strategic Tactical Relay (MILSTAR) and its Ultra High Frequency (UHF) SATCOM capability (MILSTAR is nearing system end of life) on the B-52. The AEHF Integration effort will integrate the radio, antenna and system components required to provide two-way EHF communication for the B-52.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 671810 / B-52 AEHF Integration
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>FY 2023 Plans: Finish Technology Maturation and Risk Reduction (TMRR) in FY23, which includes preliminary designs for environment control systems needed in two aircraft locations and AEHF component locations in preparation for Preliminary Design Review (PDR). Evaluate Engineering and Manufacturing Development (EMD) proposal, complete Milestone B, and negotiate and award Engineering and Manufacturing Development (EMD) contract in preparation for Critical Design Review (CDR).</p> <p>FY 2024 Plans: Continue Engineering, Manufacturing and Development (EMD) efforts, which includes final designs supporting the critical design review and purchasing long-lead material for development efforts.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding increased due to program initiating EMD activities, purchasing long-lead material, and manpower requirements.</p>			
Accomplishments/Planned Programs Subtotals	32.657	63.190	102.924

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF 05 B05200: B-52	0.000	0.000	0.000	-	0.000	15.501	93.914	52.694	68.834	Continuing	Continuing

Remarks

D. Acquisition Strategy
The Milestone Decision Authority (MDA) for B-52 AEHF Integration is the Air Force Program Executive Officer (AFPEO) for Nuclear Command, Control, and Communications (NC3). The program will utilize the B-1/B-52 Flexible Acquisition and Sustainment Contract to award Risk Reduction studies, Program Planning activities, and the EMD effort to the Original Equipment Manufacturer (OEM). The OEM will be responsible for the integration of the AEHF terminal, which will be provided as Government Furnished Equipment (GFE).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 671810 / B-52 AEHF Integration
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Risk Reduction	SS/CPFF	The Boeing Company : Oklahoma City, OK	-	24.568	Dec 2021	19.398	Oct 2022	-		-		-	Continuing	Continuing	-
EMD Contract	SS/CPIF	The Boeing Company : Oklahoma City, OK	-	-		27.313	Jul 2023	83.274	Dec 2023	-		83.274	Continuing	Continuing	-
Subtotal			-	24.568		46.711		83.274		-		83.274	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Crypto Overrun	SS/CPAF	Not specified. : TBD	-	-		3.170	May 2023	0.830	Dec 2023	-		0.830	Continuing	Continuing	-
Direct Cite Civilian Pay	Various	Not specified. : TBD	-	3.390	Oct 2021	3.552	Oct 2022	2.790	Oct 2023	-		2.790	Continuing	Continuing	-
Subtotal			-	3.390		6.722		3.620		-		3.620	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Government Test	Various	Various : TBD	-	-		0.257	Oct 2022	1.052	Oct 2023	-		1.052	Continuing	Continuing	-
Subtotal			-	-		0.257		1.052		-		1.052	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Program Office Support (A&AS, Travel)	C/CPAF	Not specified. : TBD	-	4.699	Sep 2022	9.500	Dec 2022	14.978	Dec 2023	-		14.978	Continuing	Continuing	-
Subtotal			-	4.699		9.500		14.978		-		14.978	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 671810 / <i>B-52 AEHF Integration</i>
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	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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>B-52 AEHF Integration</i>	
TMRR Activities	
Milestone B	
EMD	
Flight Test	
Milestone C	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 671810 / <i>B-52 AEHF Integration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>B-52 AEHF Integration</i>				
TMRR Activities	1	2022	4	2023
Milestone B	4	2023	4	2023
EMD	4	2023	1	2027
Flight Test	2	2026	2	2027
Milestone C	2	2025	2	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675039 / B-52 System Improvements
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675039: B-52 System Improvements	-	32.767	23.150	15.024	0.000	15.024	4.023	0.000	0.000	0.000	0.000	74.964
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

B-52 System Improvements is a comprehensive project to facilitate future capabilities and ensure the B-52's viability in performing current and future wartime missions. The scope of work may include, but not limited to, the development of an Analysis of Alternative (AoA), studies and analyses, a Capability Development Document (CDD), and/or any other analyses or documentation necessary to establish a Program of Record (POR). Additionally, this project may include airborne integration experiments or demonstrations of emerging technologies. Support of the platform integration efforts are necessary to identify and resolve challenges associated with integrating multiple programs and activities planned for the B-52 fleet.

Costs include any analysis, documentation, and related expenses necessary to establish a POR and support the B-52 weapon system. Additionally, other costs include, but are not limited to Program Management Administration (PMA), civilian pay expenses, rapid technology insertion, centralized support and initiatives for anticipated weapon system enhancements (to include efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total cost of ownership), emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), safety of flight issues and to fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness. Systems Improvement is permitted to fund software modernization efforts that merge into the operational flight program.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0M was expended for civilian pay expenses in this program element, and in FY23 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: B-52 Systems Improvements	20.767	0.150	0.150
Description: Initiate Analysis of Alternatives, modeling, simulation, testing, and demonstration, including but not limited to: Studies of existing and planned avionics, communications/navigation, electrical, weapons, flight, and nuclear-related aircraft systems and subsystems to support the future viability of the B-52 fleet.			
FY 2023 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023		
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675039 / B-52 System Improvements		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Continue Analysis of Alternatives, modeling, simulation, testing, and demonstration, including but not limited to: Studies of existing and planned avionics, communications/navigation, electrical, weapons, flight, and nuclear-related aircraft systems and subsystems to support the future viability of the B-52 fleet.</p> <p>FY 2024 Plans: Will continue Analysis of Alternatives, modeling, simulation, testing, and demonstration, including but not limited to: Studies of existing and planned avionics, communications/navigation, electrical, weapons, flight, and nuclear-related aircraft systems and subsystems to support the future viability of the B-52 fleet.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>				
<p>Title: Quad Crew</p> <p>Description: The B-52 Quad Crew effort transitions Electronic Warfare display and functionality to the existing B-52 navigator station reducing the aircrew from five to four crew members.</p> <p>FY 2023 Plans: Pursue Quad Crew Engineering and Manufacturing Design (EMD) and testing activities, procure hardware, and prepare for Developmental and Operational Test. \$8.119M FY23 Quad Crew funding is in BPAC 675165. \$8M FY23 Quad Crew funding is in BPAC 675039 due to a database error.</p> <p>FY 2024 Plans: FY24 funding is reflected in Project 675165 Quad Crew. This FY23 \$8M was incorrectly mapped to this project. Quad Crew efforts increase in Project 675165 due to supporting design and integration activities, procuring long-lead test material, and updating technical documentation.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>		0.000	8.000	0.000
<p>Title: Advanced Concept Demonstration</p> <p>Description: Effort supports a classified Proof of Concept demonstration on the B-52.</p> <p>FY 2023 Plans: Support a proof of concept demonstration on the B-52 for a new classified initiative.</p> <p>FY 2024 Plans: Continued support a proof of concept demonstration on the B-52 for a new classified initiative.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>		-	5.000	14.874

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675039 / B-52 System Improvements
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Funding increased due to supporting advanced concept demonstration.			
Accomplishments/Planned Programs Subtotals	20.767	13.150	15.024

	FY 2022	FY 2023
Congressional Add: AFGSC Innovation Hub	10.000	10.000
FY 2022 Accomplishments: Continue to support future investments such as Agile Pods, Future Comm Data Links, and Hypersonic Kill Chain Research and Development.		
FY 2023 Plans: Continue to support development initiatives and efforts that include Agile Pods, Beyond Line of Sight Communications, 3D Fuel System Model, and Fuel Additive Studies.		
Congressional Add: B-52 Training Automation	2.000	0.000
FY 2022 Accomplishments: Support updates to B-52 trainers, including automation activities.		
FY 2023 Plans: N/A		
Congressional Adds Subtotals	12.000	10.000

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

N/A

Remarks

\$8.119M FY23 Quad Crew funding is in BPAC 675165. 8M FY23 Quad Crew funding is in BPAC 675039 by error

D. Acquisition Strategy

The Acquisition Strategy for Quad Crew is addressed under BPAC 675165. The Quad Crew program will modify the existing the B-52 Electronic Warfare system to support situational awareness, self-protection, and survivability in a contested environment. The program will award an Engineering and Manufacturing Development (EMD) contract 4QFY23. The EMD effort will support transitioning Electronic Warfare capability to the Navigator Station. At Milestone C, the Quad Crew program will purchase aircraft kits that install upgraded Electronic Warfare technology.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675039 / B-52 System Improvements
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
System Improvements Studies and Analysis	SS/ Various	The Boeing Company, 559 SMXS/MXDPBA : Oklahoma City, OK	-	20.717	Jan 2022	0.100	Jan 2023	0.100	Jan 2024	-		0.100	Continuing	Continuing	-
AFGSC Innovation Hub	C/CPAF	Radiance, SBCC, Outerlink : Barksdale, LA	-	10.000	Apr 2022	10.000	Jul 2023	-		-		-	Continuing	Continuing	-
B-52 Training Automation	TBD	TBD : Oklahoma City, OK	-	2.000	Jun 2022	-		-		-		-	Continuing	Continuing	-
Quad Crew	TBD	Not Specified : Oklahoma City, OK	-	-		8.000	Jul 2023	-		-		-	Continuing	Continuing	-
Proof of Concept Demonstration	TBD	Not Specified: TBD : Tinker, OK	-	-		5.000	Jul 2023	14.874	Jul 2024	-		14.874	Continuing	Continuing	-
Subtotal			-	32.717		23.100		14.974		-		14.974	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
B-52 Centralized Support, Program Management Administration, TDY, A&AS Contractor Support - 675039	Various	TBD : OK	-	0.050	Jan 2022	0.040	Jan 2023	0.040	Jan 2024	-		0.040	Continuing	Continuing	-
B-52 Centralized Support, Travel - 675039	Various	Various : TBD	-	-		0.010	Jan 2023	0.010	Jan 2024	-		0.010	Continuing	Continuing	-
Subtotal			-	0.050		0.050		0.050		-		0.050	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		-	32.767	23.150	15.024	-	15.024	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675039 / <i>B-52 System Improvements</i>
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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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>Systems Improvements</i>	
System Improvements Studies and Analysis, etc.	
<i>AFGSC Innovation Hub</i>	
Industry Collaboration Efforts	
<i>B-52 Training Automation</i>	
Training System Automation	
<i>Proof of Concept Demonstration</i>	
Proof of Concept	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675039 / <i>B-52 System Improvements</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Systems Improvements</i>				
System Improvements Studies and Analysis, etc.	1	2022	4	2026
<i>AFGSC Innovation Hub</i>				
Industry Collaboration Efforts	1	2022	4	2023
<i>B-52 Training Automation</i>				
Training System Automation	3	2022	2	2023
<i>Proof of Concept Demonstration</i>				
Proof of Concept	1	2023	4	2024

Note

Quad Crew schedule shown in BPAC 675165.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons				Project (Number/Name) 675055 / GPS-IU			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675055: GPS-IU	-	3.193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.193
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Global Positioning System Interface Unit (GPS-IU) integrates GPS Position, Navigation and Timing (PNT) data into navigation, communications, and weapons systems on board the B-52. GPS-IU requires upgrading to incorporate any other GPS dependent capabilities on the B-52 platform. The upgrade will improve system reliability and address Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues on subcomponents of the GPS-IU. The modified GPS-IU will retain the existing functions and interfaces of the legacy GPS-IU, and provide additional interfaces to allow for future growth requirements. The B-52 fleet will also have the capability to carry additional GPS dependent weapons and targeting pods and increase processor throughput and memory capacity.

Funds may be used to address requirements including, but not limited to, emerging and short-notice DMSMS for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0M was expended for civilian pay expenses in this program element, and in FY23 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Global Positioning System Interface Unit (GPS-IU)	3.193	0.000	0.000
Description: The Global Positioning System Interface Unit (GPS-IU) integrates GPS Position, Navigation and Timing (PNT) data into navigation, communications, and weapons systems on board the B-52. Program is intended to increase the memory and throughput capacity of the GPS-IU. In December 2022, the GPS-IU program stopped pursuing Engineering and Manufacturing Development (EMD) efforts due to technical difficulties and schedule delays.			
FY 2023 Plans: N/A			
FY 2024 Plans: N/A			
FY 2023 to FY 2024 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675055 / <i>GPS-IU</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
N/A			
Accomplishments/Planned Programs Subtotals	3.193	0.000	0.000

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 06 Line Item B05200: <i>BP11 Production</i>	7.863	23.040	0.000	-	0.000	0.000	-	-	-	0.000	30.903
• APAF 06 000999: <i>Initial Spares</i>	0.000	1.578	0.462	-	0.462	-	-	-	-	0.000	2.040

Remarks

D. Acquisition Strategy

The GPS-IU Modernization program began development in the Technology Maturation and Risk Reduction (TMRR) phase via a sole source contract to Boeing Defense, Space & Security (DSS) in Oklahoma City, OK. Program was in the Engineering and Manufacturing Development (EMD) phase via a sole source contract to Boeing DSS, awarded 4QFY18.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675055 / <i>GPS-IU</i>
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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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>GPS-IU</i>	
EMD	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675055 / <i>GPS-IU</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
GPS-IU				
EMD	1	2022	1	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons				Project (Number/Name) 675056 / B-52 Radar Modernization Program (RMP)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675056: B-52 Radar Modernization Program (RMP)	-	136.862	240.176	204.349	0.000	204.349	128.688	37.977	0.000	0.000	0.000	748.052
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The B-52 Radar Modernization Program (RMP) supports nuclear and conventional operations by replacing the current APQ-166 radar on the B-52H aircraft. The APQ-166 system is increasingly difficult to sustain due to diminished manufacturing sources and obsolescent technologies; the current failure rate of the APQ-166 places long-duration missions at risk. This modernization program will encompass the radar antenna array, 12 individual Line Replaceable Units (LRU), radar control panel, radome, and Group A allocation that comprise the entire radar system. RMP will take advantage of advances in technology and on-going development efforts to acquire, to the maximum extent possible, previously developed Radar systems and integrate them into the B-52. The use of new technology will increase both the overall reliability of the radar system and the capabilities for new missions. RMP will allow the operational command (AF Global Strike Command) to fully utilize the capabilities of the B-52H aircraft to employ an array of nuclear and conventional weapons and to perform mission-essential navigation and weather avoidance functions. In addition, applicable training devices for the new radar subsystem must also be developed, modified and/or upgraded in conjunction with the aircraft modifications. This modification includes the installation of Engineering and Manufacturing Development (EMD) kits on two B-52H test aircraft to support Developmental/Operational Test and Evaluation.

This upgrade will affect B-52 training devices and will provide the ability to connect / operate in a common environment that provides realistic high-end combat training to meet future standards. Funds may be used to address the Bombing-Navigation System Maintenance Trainers (BNSMTs), a desktop trainer, as well as the Mission Employment Trainer (MET), and a Family of Systems (FoS) concept that includes Handheld/Wearable and Point-of-Use Devices, Medium-Fidelity Deployable Devices and High-Fidelity Devices covering the entire training spectrum. This program also upgrades one B-52 Software Integration Lab (SIL) with radar functionality, and builds a new Radar Development Lab and a new Radar SIL. As the RMP upgrade brings additional capability to the B-52, funds may be used to address emerging security/certification requirements (nuclear certification, cyber security, program protection, simulator common standards, etc.) in addition to increased radar integration (advanced targeting pod, Combat Network Communication Technology (CONNECT), Tactical Data Link (TDL), offensive avionics system, GPS Integration Unit (GPS-IU), Crypto modernization, mission planning, modular open system architecture (MOSA) considerations, crew vehicle interfaces, Electronic Warfare System, and B-52 Software Block (BSB), etc).

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), safety of flight issues, and associated components in the RMP configuration baseline. DMSMS efforts may include removal of end-of-life/obsolete software/hardware within the weapons system, simulators systems, and MOSA implementation. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675056 / B-52 Radar Modernization Program (RMP)

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 \$6.430M was expended for civilian pay expenses in this program element, and in FY23 \$6.593M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Radar Modernization Program	136.862	240.176	204.349
Description: Support nuclear and conventional operations by replacing the current APQ-166 radar on the B-52H aircraft. Development and production of new systems to replace the legacy equipment and to be installed on all 76 B-52H aircraft.			
FY 2023 Plans: Continue fabrication, qualification, and delivery of EMD subsystem units; complete System Integration Labs (SIL) fabrication, installation/checkout; continue software code development; initiate hardware/software integration SIL tests; develop training course material and tech pubs; begin test aircraft modification; prepare for first test aircraft post-mod/checkout and ground test and second test aircraft modification.			
FY 2024 Plans: Will continue fabrication and delivery of EMD subsystem units; complete Radar System Integration Labs (SIL) security certification; continue Agile and incremental software code development; continue hardware/software integration SIL tests; complete training course material and tech pubs development; complete first test aircraft modification and functional checkouts; complete ground test and initiate flight test with first test aircraft; initiate and complete second test aircraft modification and prepare for post-mod checkout and ground test.			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to requiring a lower level of resources to complete aircraft modifications, software development, and supporting ground/flight test events.			
Accomplishments/Planned Programs Subtotals	136.862	240.176	204.349

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 Lineltem B05200: BP11 Production	0.000	0.000	0.000	-	0.000	155.668	203.059	271.950	215.169	Continuing	Continuing
• APAF 07 Line Item B05200: Post Production Support	0.000	0.001	0.000	-	0.000	0.110	0.111	0.113	0.115	Continuing	Continuing
• APAF 06 000999: Initial Spares	0.000	0.002	0.000	-	0.000	0.219	0.222	0.227	0.232	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675056 / B-52 Radar Modernization Program (RMP)

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
Remarks											

D. Acquisition Strategy

The Milestone Decision Authority approved the B-52 RMP Acquisition Strategy (AS) on 13 March 2018. Per the Acquisition Strategy, the Original Equipment Manufacturer completed radar and other supplier selections in June 2019. The team completed System Preliminary Design Review in October 2020, Milestone B in June 2021, awarded the Engineering Manufacturing and Development contract in June 2021, and conducted System Critical Design Review in February 2022.

The Milestone B Acquisition Decision Memo updated the Acquisition Strategy to split the Milestone C into two decision points. Milestone C Decision Point #1 authorizes Low-Rate Initial Production (LRIP) Lot 1 and purchase of long-lead items needed to meet Initial Operational Capability. Milestone C Decision Point #2 will authorize LRIP Lot 2.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675056 / B-52 Radar Modernization Program (RMP)
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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/CPFF	The Boeing Company : Oklahoma City, OK	-	15.108	Dec 2021	25.414	Dec 2022	0.000		-		0.000	Continuing	Continuing	-
Engineering & Manufacturing Development (EMD) Phase	SS/CPIF	The Boeing Company : Oklahoma City, OK	-	104.262	Nov 2021	182.398	Nov 2022	177.088	Nov 2023	-		177.088	Continuing	Continuing	-
Subtotal			-	119.370		207.812		177.088		-		177.088	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Weapon Trainer Support	C/CPAF	AFLCMC/WNS : WPAFB, OH	-	0.000		5.852	Mar 2023	0.000		-		0.000	Continuing	Continuing	-
557th Software Development	PO	557th SWES : Tinker AFB, OK	-	3.686	Dec 2021	3.730	Dec 2022	2.000	Dec 2023	-		2.000	Continuing	Continuing	-
CAPRE AESA Adapter Support	PO	516th SWES : Hill AFB, UT	-	0.000		0.231	Dec 2022	0.000		-		0.000	Continuing	Continuing	-
Direct Cite Civilian Pay	Various	AFLCMC/FZA : WPAFB, OH	-	4.725	Oct 2021	6.430	Oct 2022	6.593	Oct 2023	-		6.593	Continuing	Continuing	-
Subtotal			-	8.411		16.243		8.593		-		8.593	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Edwards AFTC	PO	Edwards AFB : Edwards AFB, CA	-	4.900	Dec 2021	9.805	Dec 2022	11.750	Dec 2023	-		11.750	Continuing	Continuing	-
AFOTEC Support	PO	AFOTEC : Kirtland AFB, NM	-	0.000		0.950	Mar 2023	1.000	Mar 2024	-		1.000	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0101113F / B-52 Squadrons				675056 / B-52 Radar Modernization Program (RMP)							
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
47th CTS Cyber Test	PO	47th CTS : Eglin AFB, FL	-	0.081	Dec 2021	0.164	Dec 2022	0.168	Dec 2023	-		0.168	Continuing	Continuing	-
Subtotal			-	4.981		10.919		12.918		-		12.918	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration, A&AS Support, Centralized Support, TDY, OGC	Various	Various : Various	-	4.100	Dec 2021	5.202	Dec 2022	5.750	Dec 2023	-		5.750	Continuing	Continuing	-
Subtotal			-	4.100		5.202		5.750		-		5.750	Continuing	Continuing	N/A
Project Cost Totals			-	136.862		240.176		204.349		-		204.349	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675056 / B-52 Radar Modernization Program (RMP)

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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>Radar Modernization Program</i>	
EMD	
Developmental Testing	
MS C DP#1	
MS-C DP#2	
IOC	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675056 / <i>B-52 Radar Modernization Program (RMP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Radar Modernization Program</i>				
EMD	1	2022	2	2027
Developmental Testing	4	2023	4	2026
MS C DP#1	1	2025	1	2025
MS-C DP#2	3	2025	3	2025
IOC	3	2027	3	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675057 / B-52 Low Cost Improvement (LCI)
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675057: B-52 Low Cost Improvement (LCI)	-	0.058	0.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.760
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This program will include projects to facilitate future B-52 capabilities. Scope of work may involve, but is not limited to, Avionics, Navigation, Situational Awareness (SA) and Defensive Systems. Develop and integrate emerging technologies for specialized B-52 missions to include Intelligence Surveillance and Reconnaissance (ISR), Targeting and Weapons, future prototyping efforts, Diminishing Manufacturing Sources and Material Shortages (DMSMS) efforts to include removal of end-of-life software/hardware within simulators systems, and common open system architecture that is sustainable and cyber-resilient. Funds may be used to address requirements including, but not limited to, emerging and short-notice DMSMS for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0M was expended for civilian pay expenses in this program element, and in FY23 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: B-52 Low Cost Improvements	0.058	0.702	0.000
Description: Develop and integrate emerging technologies for specialized B-52 missions to include ISR, targeting, and weapons. This includes performing demonstrations and experimentation of emerging and advanced technologies, as well as supporting external agency projects of the technology in a relevant environment.			
FY 2023 Plans: Integrate secure communications pod onto the B-52. Perform demonstrations and experiment with emerging and advanced technologies and external agency technology projects in relevant environment.			
FY 2024 Plans: N/A			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to completing the Low Cost Improvement projects.			
Accomplishments/Planned Programs Subtotals	0.058	0.702	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675057 / B-52 Low Cost Improvement (LCI)
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 Line item B05200: BP11 Production	6.525	0.545	0.662	-	0.662	2.731	2.788	2.841	2.900	Continuing	Continuing

Remarks

D. Acquisition Strategy

Studies and analyses will be conducted by various Air Force Life Cycle Management Center and Air Force Global Strike Command organizations.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675057 / B-52 Low Cost Improvement (LCI)

FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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

Low Cost Improvements	
Low Cost Improvements Studies and Analyses	[REDACTED]

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675057 / <i>B-52 Low Cost Improvement (LCI)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Low Cost Improvements</i>				
Low Cost Improvements Studies and Analyses	1	2022	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>				Project (Number/Name) 675129 / <i>B-52 CERP</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675129: <i>B-52 CERP</i>	-	385.640	379.401	576.016	0.000	576.016	650.523	539.080	364.894	425.370	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

B-52 Commercial Engine Replacement Program (CERP) name was revised to B-52 CERP Rapid Virtual Prototyping (RVP) to differentiate from the future Middle Tier of Acquisition (MTA) effort as outlined in the program's acquisition strategy. B-52 CERP will be transitioning from an MTA to a Major Capability Acquisition program at the completion of the RVP MTA.

A. Mission Description and Budget Item Justification

The B-52 Commercial Engine Replacement Program (CERP) supports nuclear and conventional operations by replacing the current TF33-PW-103 engine on the B-52H aircraft. The TF33-PW-103 engine is increasingly difficult to sustain due to diminished manufacturing sources and obsolescent technologies; the AF Propulsion Directorate projects the engine will become unsustainable by 2030. This program will replace the current TF33-PW-103 engine with new military derivative commercial Rolls-Royce F130 engines of similar size, weight, and thrust characteristics. Along with the new engines, CERP will replace associated subsystems, such as engine struts and nacelles, the electrical power generation system, and cockpit displays. The development, production and installation of new engines and related subsystems will replace the legacy equipment on all 76 B-52H aircraft. Any B-52H aircraft modified with the new commercial engines and associated subsystems are designated as B-52J.

B-52 CERP will take advantage of advances in technology and on-going development efforts to acquire engines and integrate them into the B-52. The use of new technology will increase both the overall reliability/maintainability of the propulsion system and produce additional electrical power generation capabilities for emerging requirements. The B-52 CERP will allow the operational command (Air Force Global Strike Command) to fully utilize the capabilities of the B-52 aircraft to employ an array of nuclear and conventional weapons while increasing fuel efficiency and extending the range/loiter capabilities of the aircraft. In addition, applicable training devices must also be developed, modified and/or upgraded in conjunction with the aircraft modifications. This upgrade will also require corresponding modification to the B-52 training systems. As B-52 CERP brings additional capability to the B-52, emerging security/certification requirements (nuclear hardening, cyber security, program protection, etc.) will also need to be addressed. Several concurrent aircraft upgrades during the B-52 CERP may necessitate temporary facilities or facility upgrades/modifications. In addition, it may necessitate studies be performed to determine optimal engine installation and deployment options. Additionally, funds will be used to procure long lead components for test aircraft to include engines and all required associated components in the B-52 CERP configuration baseline.

Cost includes any other analysis or documentation and related expenses necessary to establish a program of record and support the B-52 Weapon System. Cost includes Program Management Administration (PMA) costs, centralized support and initiatives for digital engineering and anticipated weapon system enhancements, to include efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total cost of ownership.

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675129 / <i>B-52 CERP</i>
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accommodate PMA and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

The total cost of the B-52 CERP Middle Tier of Acquisition effort is 1,320.87 million, including RDT&E. The B-52 CERP is fully funded across the Future Years Defense Program.

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 FY22 13.031M was expended and in FY23 16.422M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Title: B-52 CERP</p> <p>Description: This program will replace the current TF33-PW-103 engine with new military derivative commercial Rolls-Royce F130 engines of similar size, weight, and thrust characteristics. The development, production and installation of new engines and related subsystems will replace the legacy equipment on all 76 B-52H aircraft. B-52 CERP will take advantage of advances in technology and on-going development efforts to acquire engines and integrate them into the B-52.</p> <p>FY 2023 Plans: Continue B-52 CERP Rapid Virtual Prototyping (RVP) MTA and Rapid Prototype Phase 1 (RP1) contract. Complete system preliminary design and begin system critical design. Continue Rapid Prototype Material (RPM - long lead material) contracts and continue engine critical design on engine contract. Plan to begin ordering hardware for the two test aircraft. Accomplish Milestone B.</p> <p>FY 2024 Plans: Complete the RVP MTA and deliver Virtual System Prototype (VSP) Increment 2. Continue the RP1 contract, system critical design, and the RPM (long lead material) contracts. Continue ordering hardware for two test aircraft to include engines. Complete engine critical design on the Engine contract.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding increased due to additional resources required to complete sub-system critical design reviews, fabricate test components, develop software, order long-lead test material, and buy test engines.</p>	385.640	379.401	576.016
Accomplishments/Planned Programs Subtotals	385.640	379.401	576.016

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675129 / B-52 CERP
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 0101113F: B-52 SQUADRONS	-	-	-	-	-	7.958	20.718	734.093	706.839	Continuing	Continuing

Remarks

D. Acquisition Strategy

Rapid Virtual Prototyping (RVP), utilizing the Middle Tier of Acquisition (MTA) pathway, is the first phase of B-52 CERP development. It reduces the design, development, and integration risks associated with replacing the current TF33-PW-103 engines with Rolls-Royce F130 engines. RVP delivers a virtual System Prototype (vSP) and brings the B-52 CERP modification design to Milestone B maturity. B-52 CERP will transition to the Major Capability Acquisition (MCA) pathway after PDR and completion of Milestone B. Following Milestone B completion, B-52 CERP will build test hardware and modify two test aircraft, then conduct ground and flight testing to verify capability requirements are met. After Milestone C, B-52 CERP will enter the Production and Deployment phase.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675129 / B-52 CERP
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Rapid Prototyping Phase 1	SS/CPIF	The Boeing Co : Oklahoma City, OK	-	176.309	Jan 2022	188.205	Mar 2023	235.830	Jan 2024	-		235.830	Continuing	Continuing	-
Engine Contract	C/FFP	Rolls Royce : Indianapolis, IN	-	78.957	Feb 2022	10.794	Dec 2022	102.140	Apr 2024	-		102.140	Continuing	Continuing	-
Rapid Prototyping Material 0	SS/CPIF	The Boeing Co : Oklahoma City, OK	-	79.438	Jan 2022	94.310	Mar 2023	119.839	Dec 2023	-		119.839	Continuing	Continuing	-
Rapid Prototyping Material 1	SS/CPIF	The Boeing Co : Oklahoma City, OK	-	20.000	Jun 2022	32.105	Mar 2023	49.919	Jan 2024	-		49.919	Continuing	Continuing	-
Subtotal			-	354.704		325.414		507.728		-		507.728	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Documentation - Technical Support	MIPR	Booz Allen Hamilton : Oklahoma City, OK	-	3.908	Jun 2022	6.000	Jan 2023	8.200	Nov 2023	-		8.200	Continuing	Continuing	-
557th	PO	557th : Oklahoma City, OK	-	0.232	Jun 2022	0.636	Dec 2022	0.480	Oct 2023	-		0.480	Continuing	Continuing	-
Direct Cite Authorization for CERP Civilian Personnel	Allot	AFLCMC/FZA : TBD	-	13.032	Oct 2021	16.422	Oct 2022	16.767	Oct 2023	-		16.767	Continuing	Continuing	-
Subtotal			-	17.172		23.058		25.447		-		25.447	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Edwards AFTC	PO	412TW : Edwards AFB, CA	-	10.000	Jun 2022	7.637	Mar 2023	11.476	Nov 2023	-		11.476	Continuing	Continuing	-
Digital Engineering	Various	Various : TBD	-	1.212	Sep 2022	8.492	Apr 2023	5.380	Nov 2023	-		5.380	Continuing	Continuing	-
Mock Up A/C and AMARG	PO	Various : TBD	-	0.004	May 2022	0.667	Feb 2023	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675129 / B-52 CERP
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
AEDC	PO	AEDC/Flight Systems CTF : Arnold AFB, TN	-	0.224	Aug 2022	3.280	Nov 2022	2.000	Oct 2023	-		2.000	Continuing	Continuing	-
47th CTS Cyber Test	PO	47th CTS : Edwards AFB, CA	-	-		0.202	Dec 2022	0.250	Oct 2023	-		0.250	Continuing	Continuing	-
AFSEO	PO	AFSEO : Eglin AFB, FL	-	-		0.094	Dec 2022	0.427	Oct 2023	-		0.427	Continuing	Continuing	-
AFOTEC	MIPR	AFOTEC : Edwards AFB, CA	-	-		0.440	Jan 2023	0.440	Nov 2023	-		0.440	Continuing	Continuing	-
Subtotal			-	11.440		20.812		19.973		-		19.973	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Program Management Administration, A&AS Support, Centralized Support, TDY, OGC	Various	Various : Various	-	2.324	Mar 2022	10.117	Jan 2023	22.868	Dec 2023	-		22.868	Continuing	Continuing	-
Subtotal			-	2.324		10.117		22.868		-		22.868	Continuing	Continuing	N/A

Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	385.640	379.401	576.016	-	576.016	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675129 / <i>B-52 CERP</i>
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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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>B-52 CERP</i>	
Rapid Prototype Phase 1 Contract	
Rapid Prototype Material Contract	
Engine Contract	
Milestone B	
Engineering and Manufacturing Development Contract	
Virtual System Prototype Increment 2	
Integrated (Developmental/Operational) Testing	
Milestone C	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675129 / <i>B-52 CERP</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>B-52 CERP</i>				
Rapid Prototype Phase 1 Contract	1	2022	2	2025
Rapid Prototype Material Contract	1	2022	4	2028
Engine Contract	1	2022	4	2028
Milestone B	4	2023	4	2023
Engineering and Manufacturing Development Contract	1	2025	4	2028
Virtual System Prototype Increment 2	1	2024	1	2024
Integrated (Developmental/Operational) Testing	3	2027	4	2028
Milestone C	2	2028	2	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675160 / B-52 Crypto Modernization
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675160: B-52 Crypto Modernization	-	16.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.153
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

B-52 Crypto Modernization upgrades aircraft with Mobile User Objective System (MUOS) capable ARC-210 radio systems that prevent loss of beyond line of sight (BLOS) voice and data communications capability. The program will integrate upgrade the B-52 aircraft with secure voice and data communications via SATURN (Second Generation Anti-Jam Technical UHF Radio for NATO) network, MUOS (Mobile User Objective System) Satellite constellation, and DAMA-IW (Demand Assigned Multiple Access - Integrated Waveform) SATCOM connection. These updates are required by the National Security Agency (NSA), DoD mandates, and directives.

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0M was expended for civilian pay expenses in this program element, and in FY23 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: B-52 Crypto Modernization	6.957	0.000	0.000
Description: Upgrades aircraft with secure ARC-210 radio systems and associated hardware/software to prevent loss of beyond line of sight (BLOS) voice and data communications capability.			
FY 2023 Plans: N/A			
FY 2024 Plans: N/A			
FY 2023 to FY 2024 Increase/Decrease Statement: N/A			
Title: B-52 Radar Modernization Program	9.196	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675160 / B-52 Crypto Modernization

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Description: Support nuclear and conventional operations by replacing the current APQ-166 radar on the B-52H aircraft. Development and production of new systems to replace the legacy equipment and to be installed on all 76 B-52H aircraft.</p> <p>FY 2023 Plans: N/A</p> <p>FY 2024 Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	16.153	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APAF 05 Line item B05200: BP11 Production	3.452	33.034	21.944	-	21.944	22.992	4.160	4.934	5.037	Continuing	Continuing
• APAF 06 000999: Initial Spares/Repair Parts	-	4.293	1.214	-	1.214	1.249	1.281	-	-	0.000	8.037

Remarks

D. Acquisition Strategy

Per the National Security Agency mandate, the B-52 Crypto Modernization program will upgrade the aircraft with secure radio devices (ARC-210 Gen 6) that meet the requirement for secure beyond line of sight voice and data communications. The program is currently in the Engineering Manufacturing and Development (EMD) phase and forecasted to meet to Milestone C by FY2025. During the EMD phase, the program will procure radio systems that meet the NSA timeline while furthering aircraft integration supporting Mobile User Objective System. Milestone C is scheduled for FY2024.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675160 / B-52 Crypto Modernization
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Crypto Modernization: Development and Integration Activities	SS/CPIF	OEM : Oklahoma City, OK	-	5.337	Jan 2022	-		-		-		-	0.000	5.337	-
Radar Modernization Program: Engineering & Manufacturing Development (EMD) Phase	SS/CPIF	OEM : Oklahoma City, OK	-	9.196	Nov 2021	-		-		-		-	0.000	9.196	-
Subtotal			-	14.533		-		-		-		-	0.000	14.533	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Program Administration	MIPR	Not specified. : TBD	-	0.545	May 2022	-		-		-		-	0.000	0.545	-
Subtotal			-	0.545		-		-		-		-	0.000	0.545	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Test Support	PO	Various : TBD	-	0.975	Feb 2022	-		-		-		-	0.000	0.975	-
Subtotal			-	0.975		-		-		-		-	0.000	0.975	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Travel	Various	Not specified. : TBD	-	0.100	Jan 2022	-		-		-		-	0.000	0.100	-
Subtotal			-	0.100		-		-		-		-	0.000	0.100	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675160 / <i>B-52 Crypto Modernization</i>
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	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	16.153	-	-	-	-	0.000	16.153	N/A

Remarks
 Crypto Mod and RMP are two distinct development efforts. An accounting error resulted in 9.196M of FY22 RMP (BPAC 675056) funding being misaligned under Crypto Mod (BPAC 675160).

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675160 / <i>B-52 Crypto Modernization</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Crypto Modernization</i>				
EMD	1	2022	2	2025
IQT/FQT	3	2022	1	2023
DT/OT	1	2024	2	2024
MS C	1	2025	1	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force										Date: March 2023		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons				Project (Number/Name) 675165 / B-52 Quad Crew			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
675165: B-52 Quad Crew	-	0.003	8.119	30.652	0.000	30.652	41.964	0.000	0.000	0.000	0.000	80.738
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Quad Crew program supports upgrading the ALQ-172 Electronic Warfare Countermeasure System on the B-52 aircraft. The program will transition the ALQ-172 electronic warfare system to the B-52 Navigator Station supporting situational awareness, self-protection, and survivability in a contested environment. In addition, the Quad Crew program will include expansion of frequency bands within the ALQ-172 system.

Funds may be used to address requirements including, but not limited to, emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/ Operational Testing (OT), and safety of flight issues. Additionally, funds may accommodate Program Management Administration (PMA) and support, civilian pay expenses, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY22 0.00M is forecasted for civilian pay expenses in this program element, and in FY23 0.00M is forecasted for civilian pay expenses in this program element.

Milestone/Development Status
 Materiel Development Decision (MDD) 1QFY23
 Milestone B Decision 3QFY23

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: B-52 Quad Crew	0.003	8.119	30.652
Description: The B-52 Quad Crew effort transitions Electronic Warfare display and functionality to the existing B-52 navigator station, which will reduce the aircrew from five to four crew members. In addition, the Quad Crew program will expand the Electronic Warfare frequency band functionality.			
FY 2023 Plans: Start Quad Crew Engineering and Manufacturing Development design and testing activities, procure hardware, and prepare for Developmental and Operational Test.			
FY 2024 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675165 / <i>B-52 Quad Crew</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Continue Engineering and Manufacturing Development activities that will include aircraft structure and design efforts, development of aircraft technical documentation, kit development, and procurement of long lead material.			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Funding increased due to supporting design and integration activities, procuring long-lead test material, and updating technical documentation. 8M FY23 Quad Crew funding is in BPAC 675039 due to a database error. Total FY23 funding for Quad Crew is 16.119M (8M in BPAC 675039 and 8.119M in BPAC 675165).			
Accomplishments/Planned Programs Subtotals	0.003	8.119	30.652

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF 06 0101113F: <i>B-52 SQUADRONS</i>	-	-	-	-	-	-	44.980	73.094	74.615	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Quad Crew program supports upgrading the ALQ-172 Electronic Warfare Countermeasure System on the B-52 aircraft. The program will transition the ALQ-172 electronic warfare system to the B-52 Navigator Station supporting situational awareness, self-protection, and survivability in a contested environment. The program will meet a 4QFY23 Milestone B Decision, then award an Engineering Manufacturing and Development contract.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 675165 / B-52 Quad Crew
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	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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

Quad Crew	
EMD	████████████████████
Milestone C	████████████████████

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 675165 / <i>B-52 Quad Crew</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Quad Crew				
EMD	4	2023	4	2024
Milestone C	1	2025	1	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 676039 / B-52 Airspace Compliance
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
676039: B-52 Airspace Compliance	-	0.000	0.000	5.012	0.000	5.012	41.035	32.799	33.397	34.651	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
This program, BA 7, PE 0101113F, project , Airspace Compliance (M-Code), is a new start.

A. Mission Description and Budget Item Justification

The B-52 Airspace Compliance Program ensures the B-52 meets regulatory Airspace Compliance, DoD and FAA mandates by integrated required hardware, software and firmware updates onto the fleet.

The scope of work may include, but not limited to, the development of an Analysis of Alternatives (AoA), studies and analyses, and/or any additional analyses or documentation necessary to establish a Programs of Record (POR) the meet mandated functions. Funds may also be used to address emerging and short-notice Diminishing Manufacturing and Material Shortages (DMSMS) for both aircraft and associated training systems, Development Testing (DT)/Operational Testing (OT), safety of flight issues, and associated components of the B-52 baseline configurations. DMSMS efforts may include removal of end-of-life/obsolete software and hardware due to the future emergence of Modular Open Systems Approach (MOSA) implementation.

This also includes the new Global Positioning System (GPS) Military Code (M-Code) signal design that provides a robust signal for the B-52 Fleet, enhancing Anti-Jam/Anti-Spoof capabilities and improving security to the GPS data message as military applications, technology, and mission requirements evolve.

This Program may also include necessary civilian pay expenses required to manage, execute, and deliver M-Code GPS signal capability, as well as PM Administration (PMA) and support, rapid technology insertion, and fulfill Federal Aviation Agency (FAA) or other mandates necessary to ensure continued aircrew safety and mission effectiveness. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2022 0M was expended for civilian pay expenses in this program element, and in FY 2023 0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Airspace Compliance (M-Code)	0.000	0.000	5.012
Description: The new Military Code (M-Code) signal design provides a robust signal acquisition for the B-52 Fleet, enhancing Anti-Jam/Anti-Spoof capabilities and improving security to the GPS data message as military applications, technology, and mission requirements evolve.			
FY 2023 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Air Force	Date: March 2023
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / B-52 Squadrons	Project (Number/Name) 676039 / B-52 Airspace Compliance
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
N/A			
<i>FY 2024 Plans:</i> Program will start initial studies and analysis to integrate the Global Positioning System (GPS) Military Code (M-Code) signal design on the B-52 aircraft.			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Funding increased due to starting the initial integration efforts of M-Code compliant hardware and software.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	5.012

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 0101113F: B-52 SQUADRONS	-	-	-	-	-	14.480	14.416	14.436	14.725	Continuing	Continuing

Remarks

D. Acquisition Strategy
The Milestone Decision Authority (MDA) for B-52 M-Code is the Senior Materiel Leader (SML) for the B-52 System Program Office (AFLCMC/WBD). The Prime contractor will be responsible for the integration of the M-Code capable components. The Acquisition Strategy is to gain MDA approval to enter at Milestone B in FY2025.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / <i>B-52 Squadrons</i>	Project (Number/Name) 676039 / <i>B-52 Airspace Compliance</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Airspace Compliance</i>				
TMRR	4	2024	2	2025
MS B	2	2025	2	2025
EMD	3	2025	2	2028
MS C	2	2028	2	2028