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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0101127F / B-2 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	0.000	123.749	101.790	87.623	0.000	87.623	33.136	0.004	0.004	0.004	Continuing	Continuing
675345: <i>B-2 Modernization</i>	0.000	109.089	86.354	85.468	0.000	85.468	33.136	0.004	0.004	0.004	0.000	314.059
676021: <i>BASELINE SUPPORT</i>	0.000	14.660	15.436	2.155	0.000	2.155	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The B-2 is currently undergoing modernization of avionics, communications systems, cockpit displays, armament systems, low observable components, core training system components, aircraft supportability improvements, and support equipment development.

The Air Force will also study multiple structural, avionics, and engine modifications, as well as advanced weapons integration and advanced communications, that could improve the performance of the aircraft and engines and reduce maintenance man-hours and the logistics footprint of the fleet. Focus of the studies will be on non-mission capable (maintenance) drivers, safety issues, and obsolescence issues through modernization of key components in the airframe, avionics, and engines resulting in improved aircraft availability of a high demand/low density fleet.

The B-2 Display Modernization program is a modernization of the B-2 multi-purpose display units (MDUs) and includes removal of the Defensive Management System-Modernization (DMS-M) modification from the B-2 fleet test aircraft and lab environment. This is not a new start, but a continuation of RDT&E scope that was part of the previous DMS-M program. FY 2021 and prior years DMS-M efforts were in PE 0605931F.

B-2 Advanced Communications (formerly known only as Adaptable Communications Suite) supports and enhances the aircraft's communications capabilities to keep the B-2 ready, effective, and survivable by complying with growing crypto mandates and mitigating end of life systems. Requirements include but are not limited to, Secure Beyond-Line-of-Sight (BLOS) communications, Line-of-Sight (LOS) communications, and the ability communicate and operate in the Joint All-Domain Command and Control (JADC2) environment throughout all mission phases. Multiple modernization efforts are underway to achieve the requirements including, but not limited to, Adaptable Communications Suite (ACS) Increment 4.0, Airborne Integrated Terminal Group (AITG) Replacement and B-2 Collaborative Combat Communications (B2C3).

The Low Observable Signature and Supportability Modifications (LOSSM) program supports the B-2 ability to penetrate anti-access combat environments, performing missions directed by the National Command Authority while ensuring aircrew survivability. The LOSSM program reduces low observable (LO) maintenance drivers, and signature degradation, while maintaining LO reliability / Maintainability / Supportability, and provides high signature confidence to combatant commanders.

The B-2 Identification Friend or Foe (IFF) Mode 5/S modification program replaces the current IFF transponder with a new Mode 5 and Mode S capable transponder ensuring compliance with DoD Combat Identification mandates and global Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) requirements. Mode 5 is the DoD standard for secure combat identification and provides improved discrimination between closely spaced platforms, while reducing interference with civil air traffic control transponders, enabling the B-2 fleet to accomplish its anti-access and global strike mission. Mode 5 replaced the obsolete Mode 4 combat

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<p>identification. Mode S is a civil air traffic control secondary surveillance radar process that allows selective interrogation of aircraft according to the unique 24-bit address. Mode S provides improved accuracy and altitude resolution and reduced interference from closely spaced aircraft through selective interrogation of assigned transponder addresses.</p> <p>The B-2 Training System upgrades include updates to training device hardware and components, simulation software, courseware and academic materials, instructional system design architectures, engineering drawings, and system documentation that is not driven by a funded aircraft modification.</p> <p>This budget supports B-2 nuclear certification activities to include certification testing, analysis, and support related costs to ensure the weapon system's nuclear mission remains intact. B-2 funding also supports innovation activities to include studies, analyses, requirements definition, and quick-reaction capability prototypes/ demonstrations to accelerate planning for technology transition, technology insertion, and future acquisition programs.</p> <p>Additionally, program funds may be used for Airframe Hardware Supportability Modifications (AHSM). The AHSM program increases aircraft availability and ensures mission effectiveness by targeting flight control, defensive management, communication, armament, and other system components that are the greatest contributors to aircraft downtime and/or ineffective system performance through lack of spares, extensive man-hours to troubleshoot and repair, and/or high failure rates. This program addresses current and forecasted obsolescence, Diminishing Manufacturing Sources/Material Shortages (DMSMS), and effective and timely repairs at both the field and depot levels. It also targets components whose failure rates, mean time to repair (MTTR) hours, and performance levels fail to meet established baseline targets/ specifications. This program includes multiple efforts including, but not limited to, the Radio Frequency Switching Unit, Radar Receiver Exciter, Radar Signal Processor, Flight Control Computer, Band 1 Radio Frequency Front End (RFFE), Air Turbine Starter Control Valve.</p> <p>The BY2024 funding request was reduced by \$12.744 million to account for the availability of prior year execution balances</p> <p>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 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.</p> <p>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.</p>		

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	131.647	111.990	112.890	0.000	112.890
Current President's Budget	123.749	101.790	87.623	0.000	87.623
Total Adjustments	-7.898	-10.200	-25.267	0.000	-25.267
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-15.200			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	5.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-3.850	0.000			
• SBIR/STTR Transfer	-4.048	0.000			
• Other Adjustments	0.000	0.000	-25.267	0.000	-25.267

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

Project: 675345: *B-2 Modernization*

Congressional Add: *B-2 Modernization*

	FY 2022	FY 2023
Congressional Add Subtotals for Project: 675345	0.000	5.000
Congressional Add Totals for all Projects	0.000	5.000

Change Summary Explanation

FY22 reduced -4.048 million for SBIR; -3.850 million as source on FY22-11PA reprogramming

FY23: Congressional directed reductions: -\$10.2M for Adaptable Communication Suite (ACS) program carryover, and -\$5M for B-2 Display Modernization (BDM) program excess to need; also Congressional Add: \$5M for B-2 modernization

FY24: -\$25.267M addressed higher priority Air Force efforts and DAF underexecution issues.

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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 0101127F / B-2 Squadrons				Project (Number/Name) 675345 / B-2 Modernization			
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
675345: B-2 Modernization	0.000	109.089	86.354	85.468	0.000	85.468	33.136	0.004	0.004	0.004	0.000	314.059
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The B-2 is currently undergoing modernization of avionics, communications systems, cockpit displays, armament systems, low observable components, core training system components, aircraft supportability improvements, and support equipment development.

The Air Force will also study multiple structural, avionics, and engine modifications, as well as advanced weapons integration and advanced communications, that could improve the performance of the aircraft and engines and reduce maintenance man-hours and the logistics footprint of the fleet. Focus of the studies will be on non-mission capable (maintenance) drivers, safety issues, and obsolescence issues through modernization of key components in the airframe, avionics, and engines resulting in improved aircraft availability of a high demand/low density fleet.

The B-2 Display Modernization program is a modernization of the B-2 multi-purpose display units (MDUs) and includes removal of the Defensive Management System-Modernization (DMS-M) modification from the B-2 fleet test aircraft and lab environment. This is not a new start, but a continuation of 3600 scope that was part of the previous DMS-M program. FY 2021 and prior years DMS-M efforts were in PE 0605931F.

B-2 Advanced Communications (formerly known only as Adaptable Communications Suite) supports and enhances the aircraft's communications capabilities to keep the B-2 ready, effective, and survivable by complying with growing crypto mandates and mitigating end of life systems. Requirements include but are not limited to, Secure Beyond-Line-of-Sight (BLOS) communications, Line-of-Sight (LOS) communications, and the ability communicate and operate in the Joint All-Domain Command and Control (JADC2) environment throughout all mission phases. Multiple modernization efforts are underway to achieve the requirements listed above and in the AFGSC1067(s), including, but not limited to, Adaptable Communications Suite (ACS) Increment 4.0, Airborne Integrated Terminal Group (AITG) Replacement and B-2 Collaborative Combat Communications (B2C3).

The Low Observable Signature and Supportability Modifications (LOSSM) program supports the B-2 ability to penetrate anti-access combat environments, performing missions directed by the National Command Authority while ensuring aircrew survivability. The LOSSM program reduces low observable (LO) maintenance, and stabilizes and improves the combat-ready LO signature for the B-2 fleet. This program encompasses multiple improvement projects including, but not limited to, improved LO materials (electrically conductive materials, adhesives, electrically resistive materials, radar absorbing material, fastener fills, coatings, welds, material removal tools, and improved processes), LO structures (radar radomes, antennas, hot trailing edges and tiles, intermediate section doors, tailpipes, windows, lib bay panels, leading edge, permanent fasteners, exhaust pockets, gust load alleviation system, inlets, radar absorbing structures, overall signature stability, and Alternate High Frequency Material expansion), and radio frequency (RF) diagnostic tools, evaluation systems, and other key support equipment (Tier One Material Inspection System, Signature Diagnostic System, next generation Tier II and Tier III systems, Test Article 0998 (a B-2 test asset) optimization, conductivity probes, tailpipe inspection tools, LO-related special test equipment, data archival, and communications tools). LOSSM yields a high Return On Investment (ROI) and provides signature confidence for war time readiness posturing.

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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 0101127F / B-2 Squadrons	Project (Number/Name) 675345 / B-2 Modernization
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The B-2 Identification Friend or Foe (IFF) Mode 5/S program replaces the current IFF transponder with a new Mode 5 and Mode S capable transponder ensuring compliance with DoD Combat Identification mandates and global Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) requirements. Mode 5 is the DoD standard for secure combat identification and provides improved discrimination between closely spaced platforms, while reducing interference with civil air traffic control transponders, enabling the B-2 fleet to accomplish its anti-access and global strike mission. Mode 5 replaced the obsolete Mode 4 combat identification. Mode S is a civil air traffic control secondary surveillance radar process that allows selective interrogation of aircraft according to the unique 24-bit address. Mode S provides improved accuracy and altitude resolution and reduced interference from closely spaced aircraft through selective interrogation of assigned transponder addresses.

The B-2 Training System upgrades include, but are not limited to, updates to training device hardware and components, simulation software, courseware and academic materials, instructional system design architectures, engineering drawings, and system documentation that is not driven by a funded aircraft modification. Upgrades may include Diminishing Manufacturing Sources efforts to include removal of end-of-life software/hardware within simulator systems and move to a modular, common open system architecture that is sustainable and cyber-resilient. Additional Training System Upgrades may also include efforts to implement requirements and standards defined under the Simulator Common Architecture Requirements and Standards (SCARS) initiative.

Continuation of B-2 Armament upgrades integrate new and/or advanced weapons on the B-2 to attack a wider array of target sets, to include hardened, deeply buried targets, as well as destroy more targets per sortie. Studies and efforts will refine B-2 targeting accuracy using GPS guided weapons. Nuclear modernization will continue with software and crypto modifications.

B-2 funding may be used to resolve emerging safety of flight and diminishing manufacturing sources issues, and fulfill FAA or other mandates necessary to ensure continued aircrew safety and mission effectiveness. Funding may also support innovation activities including, but not limited to, 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 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 \$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: Low Observable Signature and Supportability Mods and Trainers</p> <p>Description: B-2 Low Observable Signature and Supportability Modifications (LOSSM) pursues multiple low-cost development upgrades for Low Observable (LO) materials, diagnostics and procedures to enhance LO signature and/or improve aircraft supportability, as well as other development or study efforts for training system improvements.</p> <p>FY 2023 Plans: Continue development of on-going LOSSM and Training System core upgrades. Continue development efforts for advanced LO materials, structures, procedures, and other enhanced diagnostics and measurement systems. Address any safety issues for</p>	9.279	5.268	0.200

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Test Article 0998. Finalize Signature Diagnostic System Spiral 12 integration of the new software baseline to optimize the Next Generation Zonal Radar.</p> <p>FY 2024 Plans: Continue development of on-going LOSSM and Training System core upgrades.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease as a result of development efforts for LOSSM decreasing in scope.</p>			
<p>Title: B-2 Advanced Communications -- formerly known as Adaptable Communications Suite (ACS) and Communications Upgrade</p> <p>Description: ACS 4.0 provides secure beyond line-of-sight SATCOM Command and Control connectivity. ACS 4.0 will involve replacing the current radios and ancillaries to transition B-2 SATCOM to Mobile User Objective System due to the sunset of the current Ultra High Frequency Follow-On satellite constellation. Along with the aircraft system, the ACS ground systems and infrastructure will be redesigned to support this requirement. Significantly, ACS 4.0 will allow for simultaneous use of SATCOM voice and data.</p> <p>AITG provides Line-of-Sight UHF and Very High Frequency (VHF) anti-jam, encrypted, and unencrypted voice communications. AITG Replacement will include the replacement of the AN/ARC-234 radio which will reach end-of-life effective 01 Oct 2026. AITG replacement will also implement the SATURN Waveform for anti-jam voice communications; this is a transition from the HAVE QUICK Waveform which will be retired effective 01 Oct 2024.</p> <p>B2C3 integrates an independent OMS avionics architecture integrated on the B-2. B2C3 objective is to identify, leverage, and integrate existing capabilities (such as ACS 4.0 & AITG) to meet B-2 communications requirements. B2C3 is a compilation of multiple efforts (can be thought of as an integration effort) designed to deliver the Open Mission Systems (OMS) architecture (domain) within the B-2. By controlling this interface, new technologies can be rapidly developed and fielded. This will provide an integrated concept that merges BLOS and LOS Link-16 data into the cockpit display and provides a single consolidated Tactical Situation Display (TSD) centrally located for the aircrew.</p> <p>FY 2023 Plans: ACS 4.0: Complete Milestone B.</p> <p>AITG: Continue planning for Engineering and Manufacturing Development (EMD).</p> <p>B2C3: Complete Spiral 1 Critical Design Review (CDR) and initiate Developmental Test and Evaluation (DT&E).</p> <p>FY 2024 Plans:</p>	22.726	23.987	45.579

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
ACS 4.0: Complete CDR, DT&E and Operational Test and Evaluation (OT&E), Production Readiness Review, and Milestone C.				
AITG: Complete System Functional Review/Preliminary Design Review, Milestone B, and CDR.				
B2C3: Complete Milestone C and begin Spiral 1 production.				
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 increased due to ramp-up of RDT&E activities within the projects.				
Title: B-2 Identification Friend or Foe (IFF) Mode 5/S Program		9.309	0.000	0.000
Description: The B-2 IFF Mode 5/S Program is part of B-2 Integrated Functional Capability (IFC) drop P6.6, which also includes software sustainment updates and form, fit, function hardware replacement. The IFC Process is the framework within which B-2 modernization and sustainment improvements are designed, developed, integrated, tested, and delivered. B-2 IFF Mode 5/S Program replaces the current IFF transponder with a new Mode 5 and Mode S capable transponder ensuring compliance with DoD Combat Identification mandates and global communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) requirements. Mode 5 is the DoD standard for secure combat identification and provides improved discrimination between closely spaced platforms, while reducing interference with civil air traffic control transponders, enabling the B-2 fleet to accomplish its anti-access and global strike mission. Mode 5 replaced the obsolete Mode 4 combat identification. Mode S is a civil air traffic control secondary surveillance radar process that allows selective interrogation of aircraft according to the unique 24-bit address. Mode S provides improved accuracy and altitude resolution and reduced interference from closely spaced aircraft through selective interrogation of assigned transponder addresses.				
FY 2023 Plans: Continue DT&E in the Weapon System Support Center (WSSC) lab, and certification of hardware/software for aircraft installs. Begin on-aircraft ground/flight DT&E and OT&E, and Aircraft Monitoring And Control (AMAC) testing. Initiate Milestone C decision for ordering long-lead parts.				
FY 2024 Plans: Complete on-aircraft ground/flight DT&E and OT&E, and Aircraft AMAC testing, and complete Milestone C for Full-Rate Production.				
FY 2023 to FY 2024 Increase/Decrease Statement: N/A				
Title: B-2 Display Modernization (BDM)		67.263	51.558	37.056
Description: The B-2 Display Modernization program is a modernization of the B-2 multi-purpose display units (MDUs) and includes removal of the Defensive Management System-Modernization (DMS-M) modification from the B-2 fleet test aircraft and				

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101127F / B-2 Squadrons	Project (Number/Name) 675345 / B-2 Modernization		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
lab environment. This is not a new start, but a continuation of 3600 scope that was part of the previous DMS-M program. FY 2021 and prior years DMS-M efforts were in PE 0605931F.				
FY 2023 Plans: Continue development and software integration of MDU Replacements (MDU-R). Advance development on lab support activities and continue engineering for modification of the B-2 Test Aircraft, A/C 1087, (currently configured for DMS-M). Conduct technical and test reviews to support restructured program.				
FY 2024 Plans: Continue development and software integration of MDU Replacements (MDU-R). Advance development on lab support activities and completion of modification of the B-2 Test Aircraft, A/C 1087, (currently configured for DMS-M). Conduct technical and test reviews to support restructured program. Start flight test activities.				
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to scope of development activities in FY24.				
Title: B-2 Trainers Modernization		0.512	0.541	2.633
Description: The B-2 Training System upgrades include, but are not limited to, updates to training device hardware and components, simulation software, courseware and academic materials, instructional system design architectures, engineering drawings, and system documentation that is not driven by a funded aircraft modification. Upgrades may include Diminishing Manufacturing Sources efforts to include removal of end-of-life software/hardware within simulator systems and move to a modular, common open system architecture that is sustainable and cyber-resilient. Additional Training System Upgrades may also include efforts to implement requirements and standards defined under the Simulator Common Architecture Requirements and Standards (SCARS) initiative. Support to include, but not limited to, Program Management Administration (PMA), Advisory and Assistance Services (A&AS), and travel to enable mission requirements.				
FY 2023 Plans: FY23 Funding for Trainers Division/Directorate PMA, A&AS, and travel costs.				
FY 2024 Plans: Work with the BDM program to provide concurrency data and capability to the Training System.				
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 increased due to additional efforts to provide BDM concurrency capabilities to the platform training system.				
Accomplishments/Planned Programs Subtotals		109.089	81.354	85.468

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	FY 2022	FY 2023
Congressional Add: B-2 Modernization	0.000	5.000
FY 2022 Accomplishments: N/A		
FY 2023 Plans: Funds will be used in support of the Air Force Global Strike Command (AFGSC) Commercial Capabilities Integration and Transition capability, which will explore, prototype, and invest in commercial technologies to include autonomous robotics perimeter defense system, 5G testing support, and advanced software tools.		
Congressional Adds Subtotals	0.000	5.000

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 05 B00200: B-2A	23.278	89.217	107.980	-	107.980	57.162	51.707	52.370	15.780	0.000	397.494
• APAF 06 000999: <i>Initial Spares/Repair Parts</i>	-	9.242	-	-	-	-	-	-	-	0.000	9.242
• APAF 07 B00200: B-2A	1.651	1.802	1.838	-	1.838	1.881	1.914	-	-	0.000	9.086
• APAF 07 B002B0: B-2B	39.929	36.325	15.207	-	15.207	15.680	15.996	16.825	17.175	0.000	157.137
• APAF 07 000075: <i>Other Production Charges</i>	17.636	20.320	18.839	-	18.839	19.322	19.661	-	-	0.000	95.778
• OPAF 03 833140: <i>Strategic Command And Control</i>	0.536	0.517	0.533	-	0.533	0.577	0.590	0.611	0.623	0.000	3.987

Remarks

D. Acquisition Strategy

The B-2 is currently undergoing modernization of avionics systems, communication systems, cockpit displays, low observable components and training systems as well as the integration of advanced weapons. Most, but not all B-2 modernization programs utilize a sole source contract with the prime/integrating contractor (Northrop Grumman). Key elements of the acquisition strategy include: use of cost plus incentive fee and fixed price incentive fee development contracts, as well as the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and number of fielded configurations.

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

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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			
Low Observable Signature and Supportability Mods	Various	Various : Various	0.000	9.279	Aug 2022	4.459	Jun 2023	-		-		-	Continuing	Continuing	-
B-2 Advanced Communications	Various	Various : Various	0.000	22.726	Aug 2022	19.914	Apr 2023	39.407	Dec 2023	-		39.407	66.338	148.385	-
B-2 IFF Mode 5/S	Various	Northrop Grumman : Various	0.000	9.309	May 2022	-		-		-		-	0.000	9.309	-
B-2 Display Modernization (BDM)	Various	Northrop Grumman : Various	0.000	58.415	Apr 2022	48.206	May 2023	25.925	Jan 2024	-		25.925	30.206	162.752	-
Aircrew Training	Various	Northrop Grumman : Various	0.000	0.512	Feb 2022	0.476	Feb 2023	2.627	Feb 2024	-		2.627	Continuing	Continuing	-
Subtotal			0.000	100.241		73.055		67.959		-		67.959	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			
Support	SS/ Various	Northrop Grumman : Various	0.000	2.309	Jan 2022	1.573	Jan 2023	2.399	Jan 2024	-		2.399	0.000	6.281	-
Subtotal			0.000	2.309		1.573		2.399		-		2.399	0.000	6.281	N/A

Remarks
This support is the Enterprise Support Delivery Order (ESDO) under the B-2 Flexible Acquisition and Sustainment Team (FAST) II umbrella contract with Northrop Grumman.

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			
Management Services	Various	Various : Various	0.000	0.397	Sep 2022	3.767	Oct 2022	12.860	Oct 2023	-		12.860	0.000	17.024	-
PMA	Various	DCS Corporation : Various	0.000	6.142	Oct 2021	7.959	Oct 2022	2.250	Oct 2023	-		2.250	22.442	38.793	-
Subtotal			0.000	6.539		11.726		15.110		-		15.110	22.442	55.817	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 0101127F / B-2 Squadrons	Project (Number/Name) 675345 / B-2 Modernization
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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	0.000	109.089	86.354	85.468	-	85.468	Continuing	Continuing	N/A

Remarks
Award dates listed are the first incremental funding opportunity associated with each cost category.

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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 0101127F / B-2 Squadrons	Project (Number/Name) 675345 / B-2 Modernization
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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

B-2 Modifications Schedule																												
Low Observable Signature and Supportability Mods and Trainers																												
IFF Mode 5/S EMD Phase																												
B-2 Display Modernization (BDM) Displays EMD Phase																												
Advanced Communications-Adaptable Communications Suite (ACS)																												
Advanced Communications-Airborne Integrated Terminal Group (AITG)																												
Advanced Communications-B-2 Collaborative Combat Communications (B2C3) Spiral 1																												

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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 0101127F / B-2 Squadrons	Project (Number/Name) 675345 / B-2 Modernization
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>B-2 Modifications Schedule</i>				
Low Observable Signature and Supportability Mods and Trainers	1	2022	4	2023
IFF Mode 5/S EMD Phase	1	2022	2	2024
B-2 Display Modernization (BDM) Displays EMD Phase	1	2022	4	2025
Advanced Communications-Adaptable Communications Suite (ACS)	1	2022	4	2024
Advanced Communications-Airborne Integrated Terminal Group (AITG)	1	2024	1	2026
Advanced Communications-B-2 Collaborative Combat Communications (B2C3) Spiral 1	4	2022	1	2024

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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 0101127F / B-2 Squadrons				Project (Number/Name) 676021 / BASELINE SUPPORT			
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
676021: <i>BASELINE SUPPORT</i>	0.000	14.660	15.436	2.155	0.000	2.155	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Baseline Support maintains and upgrades the B-2 unique flight test aircraft as well as hardware/software and test equipment to support developmental systems integration, and flight test, reducing the need for additional operational aircraft and accelerating deployment of advanced operational capabilities to the warfighter.

Baseline Support also provides for other B-2 unique government costs and includes assorted studies of aircraft performance and cost trades as well as acquisition planning activities, up to and including proposal preparation, for future aircraft, engine, weapon, communication, navigation or other capabilities.

B-2 funding may be used to resolve emerging safety of flight and diminishing manufacturing sources issues, and fulfill FAA or other mandates necessary to ensure continued aircrew safety and mission effectiveness. Funding may also support innovation activities including, but not limited to, studies, analyses, requirements definition, and quick-reaction capability prototypes/demonstrations to accelerate planning for technology transition, technology insertion, and future acquisition programs.

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

	FY 2022	FY 2023	FY 2024
<p>Title: Baseline Support Acq Plan/Studies/Integr Test Support</p> <p>Description: Baseline Support provides for other B-2 unique government costs, including acquisition planning activities for future capabilities, long range planning, studies, and program integration activities, as well as integration and test support of upgraded crypto components as needed.</p> <p>FY 2023 Plans: Continue Baseline Support activities including acquisition planning for future capabilities, long range planning, studies, and program integration activities.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY2024 test activities are decreasing to coincide with the conclusion of the funded modification efforts.</p>	0.290	0.290	0.000
<p>Title: Baseline Support Flight Test</p>	14.370	15.146	2.155

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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 0101127F / B-2 Squadrons	Project (Number/Name) 676021 / BASELINE SUPPORT
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Description: Baseline Support Flight Test maintains and upgrades the B-2 unique flight test aircraft as well as hardware/software and test equipment to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerating deployment of advanced operational capabilities to the warfighter.</p> <p>FY 2023 Plans: Continue B-2 Flight Test activities, maintaining and upgrading the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test.</p> <p>FY 2024 Plans: Continue to support and complete B-2 test activities.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY2024 test activities are decreasing to coincide with the conclusion of the funded modification efforts.</p>			
Accomplishments/Planned Programs Subtotals	14.660	15.436	2.155

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

N/A

Remarks

D. Acquisition Strategy

Key elements of the acquisition strategy include: use of a sole source contract with a prime/integrating contractor (Northrop Grumman) for most but not all B-2 programs; use of cost plus incentive fee (CPIF) development contracts; and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.

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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 0101127F / B-2 Squadrons	Project (Number/Name) 676021 / BASELINE SUPPORT
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Support (\$ 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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support	SS/ Various	Northrop Grumman : Various	0.000	0.256	Jan 2022	0.004	Jan 2023	-		-		-		0.000	0.260	-
Other Government Costs	Various	Various : Various	0.000	12.972	Oct 2021	14.189	Oct 2022	1.941	Oct 2023	-		1.941		Continuing	Continuing	-
Subtotal			0.000	13.228		14.193		1.941		-		1.941		Continuing	Continuing	N/A

Remarks
 This support is the Enterprise Support Delivery Order (ESDO) under the B-2 Flexible Acquisition and Sustainment Team (FAST) II umbrella contract with Northrop Grumman.
 Other Government Costs covers the flight test cadre Contract Line Item Number (CLIN) on the ESDO.

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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Management Services	C/CPAF	Not specified. : TBD	0.000	0.813		0.625		-		-		-		0.000	1.438	-
PMA	Various	Various : TBD	0.000	0.619	Oct 2021	0.618	Dec 2022	0.214	Dec 2023	-		0.214		Continuing	Continuing	-
Subtotal			0.000	1.432		1.243		0.214		-		0.214		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		0.000	14.660	15.436	2.155	-	2.155	Continuing	Continuing	N/A

Remarks
 Award dates listed are the first incremental funding opportunity associated with each cost category.

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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 0101127F / B-2 Squadrons	Project (Number/Name) 676021 / BASELINE SUPPORT
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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-2 Baseline Support</i>	
FY 2022 Flight Test Core Support Annual Contract Award	
FY 2023 Flight Test Core Support Annual Contract Award	
FY 2024 Flight Test Core Support Annual Contract Award	

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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 0101127F / B-2 Squadrons	Project (Number/Name) 676021 / BASELINE SUPPORT

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>B-2 Baseline Support</i>				
FY 2022 Flight Test Core Support Annual Contract Award	1	2022	1	2023
FY 2023 Flight Test Core Support Annual Contract Award	1	2023	1	2024
FY 2024 Flight Test Core Support Annual Contract Award	1	2024	1	2025