Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604245M *I H-1 UPGRADES*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	112.694	55.877	50.158	43.759	-	43.759	30.829	12.888	28.840	31.181	Continuing	Continuing
3359: *H-1 Improvements*	112.694	55.877	50.158	43.759	-	43.759	30.829	12.888	28.840	31.181	Continuing	Continuing

A. Mission Description and Budget Item Justification

The mission of the AH-1 attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance, survivability enhancements, and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1 utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft include 37 AH-1Ws converted to AH-1Zs, build 152 new AH-1Zs, remanufacture ten (10) H-1N helicopters and build 150 new UH-1Y models. AH-1Z and UH-1Y models include a 4-bladed, composite rotor system with semi-automatic bladefold, performance-matched transmissions, T700 Engine Digital Electronic Control Units, 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, and common, fully integrated cockpits and avionics systems. These upgrades add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They provide considerable growth potential for future weapon systems and avionics to significantly increase mission effectiveness and survivability. The cockpits also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, air-to-ground missile and air-launched intercept missile weapon systems management in nearly identical crew stations, which significantly reduces training requirements. These upgrades maximize commonality between the two aircraft and provide needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

This budget is required for follow-on improvements to H-1 aircraft via integration of sensors and weapons, avionics, and air vehicle components that will address deficiencies, systems safety, obsolescence, readiness, reliability, supportability, and relevance in the battlespace. Improvements will include all associated System Configuration Set (SCS) updates as well as integration and testing related to the aircraft platforms.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	57.094	50.158	0.000	-	0.000
Current President's Budget	55.877	50.158	43.759	-	43.759
Total Adjustments	-1.217	0.000	43.759	-	43.759
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.217	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy					Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604245M *I H-1 UPGRADES*			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	43.759	-	43.759

Change Summary Explanation

Cost: FY 2023 funding request was reduced by $0.494 million to account for the availability of prior year execution balances.

Technical: None

Schedule: None

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604245M / *H-1 UPGRADES*	Project (Number/Name) 3359 / *H-1 Improvements*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3359: *H-1 Improvements*	112.694	55.877	50.158	43.759	-	43.759	30.829	12.888	28.840	31.181	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The objective of H-1 Improvements is to provide follow-on Research, Development, Test and Evaluation efforts in support of all H-1 aircraft.

Air Vehicle and Engine improvements include Analysis of structural data to formulate Damage Limits and Tolerances for structural components in order to reduce life cycle costs and maintenance workload; development and test of structural components. These improvements include tail boom, airframe and drive system components, minimizing excessive and premature wear, increased reliability, decreased component fatigue and improve existing design deficiencies. Air Vehicle will develop the next phase of Thermal Cooling Solution; supporting compartments containing avionics equipment; development and testing of aircrew and flight safety systems; develop an auxiliary fuel cell capability and Remote Stores Control unit (RSCU) Software development. RSCU efforts will include software development, testing, cybersecurity, and acquisition of test assets.

Avionics improvements target digital inter-operability, integrated avionics, safety and survivability, and situational awareness for both the pilot and aircrew safety. This includes Degraded Visual Environment (DVE), Helmet Mounted Display improvements, cockpit displays, precision and Global Positioning System (GPS) non-precision landing capability, collision avoidance, improved Embedded Global Positioning System (EGI), Inertial Navigation System (INS), targeting sensor systems and mission computer. H-1 capability improvements include improved Aircraft Survivability Equipment (ASE), digital operations and transfer of data, digital interoperability, digital video recording, video and data networking, and information integration with aviation combat elements and Marine Air Ground Task Force elements. Mandated capability efforts include - Communications and COMSEC modernization, Navigation and Surveillance system/Air Traffic Management (CNS/ ATM), Required Navigation Performance/ Area Navigation (RNP/RNAV), GPS Selective Availability Anti-Spoofing Module (SAASM), Automatic Dependent Surveillance - Broadcast (ADS-B), Crash Survivable Flight Incident Recorder and information technology/protection of the platform. In addition, development of Model Based System Engineering (MBSE) to support the requirements, design, analysis, verification, and validation associated with aircraft system integration. The goal is to reduce total ownership cost for H-1 aircraft and related support systems by improving reliability and maintainability of critical flight and avionics systems along with associated peculiar avionics support equipment and incorporating fact-of-life obsolescence solutions. All avionics improvements include related Software Configuration Set (SCS) development updates including software, test assets, cybersecurity, and testing.

Sensors, Weapons, Aircraft Survivability Equipment (ASE), and Helmet Mounted Display System improvements include manufacturing process improvements, hardware and software redesign to improve reliability, improve production methodologies, implement program security initiatives and increase the collective capability to address emerging battlefield threats. These improvements address reliability and obsolescence. The technical interfaces between the aircraft sensor, helmet, and weapons systems require extensive software and hardware upgrades to translate data into sensor fusion based solutions that provide both battlefield and situational awareness to the H-1 platform. The AN/AAQ-30 Target Sight System (TSS) will implement several obsolescence upgrade efforts with improvements to the Cameras as well as adding software driven capabilities such as increased field-of-views and auto-focus. The Optimized TopOwl (OTO) reliability upgrades will increase reliability and readiness for components that are currently driving high repair costs. Radar and missile warning improvements, including APR-39D(V)2 and the Distributed Aperture Infrared Countermeasures (DAIRCM), require extensive integration and testing. Funds required for development, test, and integration efforts for Joint Air-to-Ground

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604245M / *H-1 UPGRADES*	**Project (Number/Name)** 3359 / *H-1 Improvements*

Missile (JAGM), Advanced Precision Kill Weapons (APKWS), M299 Launcher improvements, Digital Rocket Launcher (DRL), AIM-9X, AN/ALQ-231 (V) Intrepid Tiger II Electronic Warfare Pod. Improving and integrating weapon systems will align with these upgrades to improve the overall accuracy, lethality, and survivability of the H-1 platform. All weapon and sensor improvements include related SCS development updates including software, test assets, and testing.

These improvements will provide considerable growth potential for future weapon systems, air vehicle improvements, software improvements, and avionics upgrades, which will significantly increase mission effectiveness and survivability, while potentially reducing life cycle costs. The efforts will also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, precision guided munitions, and air-launched intercept missile weapon systems management in nearly identical crew stations, which significantly reduces training requirements. These upgrades maximize commonality between all H-1 Type/Model/Series aircraft and provide needed improvements in crew and passenger reliability, survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Weapons and Sensors Testing and Integration	14.692	12.795	6.916	0.000	6.916
Articles:	-	-	-	-	-
FY 2022 Plans: Continue prototype developmental testing of TSS Obsolescence Upgrade initiatives, to include software compatibility, transfer alignment corrections and high definition video feed to the Optimized Top Owl HMSD (Helmet Mounted Sight Display). Conduct HMSD optics testing, digital upgrades and Sensor/ASE interfaces, to include TopOwl integration of binocular optics. Continue enhanced digital capability efforts, Aircraft Survivability Equipment (ASE) improvements, Helmet Mounted Display improvements, with full visor integration and display enhancements, systems obsolescence mitigation efforts and test Degraded Visual Environment (DVE) solutions with TSS and OTO interfaces. Conduct testing and evaluation of Intrepid Tiger IT-IIV3 and Distributed Aperture Infrared Countermeasures. Weapons and Sensors improvements include test asset components to support validation and verification of designs to include software.					
FY 2023 Base Plans: Continue prototype developmental testing of TSS Obsolescence Upgrade initiatives to include software compatibility, replacement camera functionality and performance improvements. Continue Aircraft Survivability Equipment (ASE) test and evaluation. Conduct testing and evaluation of Distributed Aperture Infrared Countermeasures (DAIRCM). Weapons and Sensors improvements include test asset components to support software and cybersecurity testing efforts.					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604245M / *H-1 UPGRADES*	**Project (Number/Name)** 3359 / *H-1 Improvements*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Decrease in funding from FY 2022 to FY 2023 due to reduced flight testing requirements for TSS Block Upgrade with OTO improvements, specifically to address Transfer Alignment for weapons employment and DVE options.					
Title: Air Vehicle and Engines Improvements	10.877	9.851	5.333	0.000	5.333
Articles:	-	-	-	-	-
FY 2022 Plans: Continue redesign and initiate test of structural components to minimize excessive and premature wear, increase reliability, increase aircraft load capabilities, address weight and balance issues, and improve existing design deficiencies including: Tail boom evaluation, the fuel system; the aircraft electrical power-generating components, including circuit breaker panel, and aircraft re-wiring to support power requirements for existing and future systems to include stores select-ability, future Avionics Survivability Equipment (ASE), emerging Electronic Warfare (EW), and Degraded Visual Environment (DVE) systems; the Environmental Control Systems/Thermal to support other avionics on the UH-1Y/AH-1Z; the drive system components (rotor brake/ slip ring/standpipe/gearboxes/drive shaft and couplers/chip detectors) to increase reliability and reduce high cost and/or failure rates; main and tail rotor blades including tail rotor mast. Continue survivability upgrades on blast frag canopy, opaque armor, self-sealing fuel tanks, sump and backing board. Continue UH-1Y structural improvements to increase capability including auxiliary fuel; cabin floor boards to prevent corrosion; floor panel access and other structural reinforcements.					
FY 2023 Base Plans: Continue redesign and initiate test of structural components to minimize excessive and premature wear, increase reliability and fatigue life, increase aircraft load capabilities. Improve existing design deficiencies including Fuel Systems and aircrew safety and flight safety systems. Develop and test System Configuration Set (SCS) including software.					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: Decrease in funding from FY2022 to FY2023 due to reduction in design and test efforts in support of UH-1Y/ AH-1Z structural improvement and reinforcement initiatives, component redesign efforts, and survivability upgrades.					
Title: Avionics Improvements	30.308	27.512	31.510	0.000	31.510
Articles:	-	-	-	-	-
FY 2022 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Continue with software integration, system integration laboratories, Development Testing (DT) activities associated with SCS. Continue design, development and testing for Digital Interoperability (DI) improvements, to include Link 16 development, Full Motion Video, Advanced Network Waveform 2 (ANW2) UH-1Y Aft Cabin Display for situational awareness, portable tablet improvements for Marine Air-Ground Task, Advanced Data Transfer System (ADTS), and a switch and Cross Domain Solution (CDS) that support NSA security requirements for airborne networks. Develop communication solutions to enable Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN), Variable Message Format (VMF), and Tactical Secure Voice 2 (TSV2) Protocol for ARC-210 RT-1939A Radio. Complete development efforts on the Mission Computer (TRMC) redesign., avionics components / systems obsolescence mitigation efforts, peculiar avionics support equipment, automatic test equipment and mission computer SCS improvements, Aircraft Dependent Surveillance Broadcast (ADS-B), and waveform functionality. Continue enhancement of digital map and data storage capabilities, digital video recording, display systems, digital systems upgrades. Initiate design and development on Terrain Awareness Warning System (TAWS), Joint Battlefield Command - Platform (JBC-P), Mobile User Objective System (MUOS) for over the horizon communication, Degraded Visual Environment and collision avoidance capability, Embedded Global Positioning System/Inertial Navigation System (EGI) upgrade to meet current mandate for signal integrity technology, GPS non-precision approach capability and GPS signal protection efforts, Crash Survivable Flight Instrument Recorder (CSFIR), and Link tactical data exchange.					
FY 2023 Base Plans: Continue with software integration, system integration laboratories, Development Testing (DT) activities associated with SCS and MBSE. Continue design, development and testing for Digital Interoperability (DI) improvements, to include Link 16 development, Advanced Network Waveform 2 (ANW2) UH-1Y Aft Cabin Display for situational awareness, portable tablet improvements for Marine Air-Ground Task, Advanced Data Transfer System (ADTS), and a switch and Cross Domain Solution (CDS) that support NSA security requirements for airborne networks. Develop communication solutions to enable Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN), Variable Message Format (VMF), and Tactical Secure Voice 2 (TSV2) Protocol for ARC-210 RT-1939A Radio. Complete development efforts on the Mission Computer (TRMC) firmware redesign. Avionics components / systems obsolescence mitigation efforts including, peculiar avionics support equipment, automatic test equipment and mission computer SCS improvements. Continue enhancement of digital map and data storage capabilities, digital video recording, display systems, digital systems upgrades. Initiate design and development on Terrain Awareness Warning System (TAWS).					
FY 2023 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase in funding from FY2022 to FY2023 is required to ensure Digital Interoperability (DI) increment 2 (H-1's highest priority), a software-only update to the baseline DI increment I system. This critical capability improvement is needed to keep pace with currently planned upgrades and operational requirements and will ensure H-1 has access to the same data link as other DOD and Joint partners on the modern battlespace.					
Accomplishments/Planned Programs Subtotals	55.877	50.158	43.759	0.000	43.759

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• APN/0178: *UH-1Y/AH-1Z APN1*	3.816	0.939	0.000	-	0.000	0.069	0.225	0.234	0.239	0.000	10,557.077
• APN/0532: *H-1 Series*	134.427	124.194	122.498	-	122.498	144.535	156.937	159.128	172.103	1,097.336	2,946.895

Remarks

D. Acquisition Strategy

Follow-on H-1 Improvements will be developed using cost plus fixed fee type contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	BHTI : Amarillo, TX	12.403	6.822	Jan 2021	5.493	Jan 2022	3.346	Jan 2023	-		3.346	37.939	66.003	66.003
Primary Hardware Development	Various	Various : Various	1.462	0.582	Jan 2021	0.784	Jan 2022	0.350	Jan 2023	-		0.350	0.000	3.178	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	5.008	0.642	Nov 2020	1.825	Nov 2021	0.750	Nov 2022	-		0.750	3.774	11.999	-
Systems Engineering	SS/CPFF	BHTI : Amarillo, TX	9.120	9.641	Jan 2021	5.998	Jan 2022	4.197	Jan 2023	-		4.197	0.000	28.956	-
Systems Engineering	Various	Various : Various	1.412	0.608	Jan 2021	0.553	Jan 2022	0.360	Jan 2023	-		0.360	0.000	2.933	-
		Subtotal	29.405	18.295		14.653		9.003		-		9.003	41.713	113.069	N/A

Remarks

Decrease in Primary Hardware Development for avionics capability improvements and System Engineering Support for Bell from FY2022 to FY2023 due to USMC reprioritization. In addition, several planned structural improvements (such as (auxiliary fuel, cabin floor boards to prevent corrosion and floor panel access) will be completed or be in final developmental and testing phases in FY2022.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	SS/FP	Northrup Grumman : Woodland Hills, CA	35.656	8.737	Nov 2020	12.809	Nov 2021	17.776	Feb 2023	-		17.776	32.388	107.366	107.366
Software Development	WR	NAWCWD : China Lake, CA	4.844	1.864	Nov 2020	2.176	Nov 2021	0.851	Nov 2022	-		0.851	12.309	22.044	-
Software Development	WR	NAWCAD : Patuxent River, MD	3.258	0.459	Nov 2020	1.300	Nov 2021	0.607	Nov 2022	-		0.607	0.000	5.624	-
Software Development	Various	Various : Various	2.593	0.445	Jan 2021	0.974	Jan 2022	0.350	Jan 2023	-		0.350	0.000	4.362	-
		Subtotal	46.351	11.505		17.259		19.584		-		19.584	44.697	139.396	N/A

Remarks

Increase in funding from FY2022 to FY2023 is required to ensure Digital Interoperability (DI) increment 2 (H-1's highest priority), a software-only update to the baseline DI increment I system. This critical capability improvement is needed to keep pace with currently planned upgrades and operational requirements and will ensure H-1 has access to the same data link as other DOD and Joint partners on the modern battlespace.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test and Evaluation	WR	COMOPTEVFOR : Norfolk, VA	2.747	1.415	Nov 2020	1.383	Nov 2021	0.780	Nov 2022	-		0.780	7.295	13.620	-
Operational Test and Evaluation	Various	Various : Various	1.480	0.762	Jan 2021	0.760	Jan 2022	0.370	Jan 2023	-		0.370	0.000	3.372	-
Development Test and Evaluation	WR	NAWCAD : Patuxent River, MD	25.943	17.446	Nov 2020	12.611	Nov 2021	12.229	Nov 2022	-		12.229	79.778	148.007	-
Development Test and Evaluation	Various	Various : Various	1.543	2.342	Jan 2021	0.795	Jan 2022	0.323	Jan 2023	-		0.323	0.000	5.003	-
		Subtotal	31.713	21.965		15.549		13.702		-		13.702	87.073	170.002	N/A

Remarks

Decrease in Test and Evaluation from FY2022 to FY2023 due to USMC reprioritization. In addition, some of the planned improvements to increase capability will have completed or be in final developmental and testing phases in FY2022.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Various	1.656	0.899	Nov 2020	1.058	Nov 2021	0.740	Nov 2022	-		0.740	1.408	5.761	5.761
Program Management Support	Various	Various : Various	3.037	3.111	Nov 2020	1.403	Nov 2021	0.680	Nov 2022	-		0.680	3.523	11.754	-
Travel	WR	NAVAIR : Patuxent River, MD	0.532	0.102	Oct 2020	0.236	Oct 2021	0.050	Oct 2022	-		0.050	Continuing	Continuing	Continuing
		Subtotal	5.225	4.112		2.697		1.470		-		1.470	Continuing	Continuing	N/A

Remarks

Decrease in Management Services from FY2022 to FY2023 due to USMC reprioritization.

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	112.694	55.877		50.158		43.759		-		43.759	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604245M / *H-1 UPGRADES*	**Project (Number/Name)** 3359 / *H-1 Improvements*

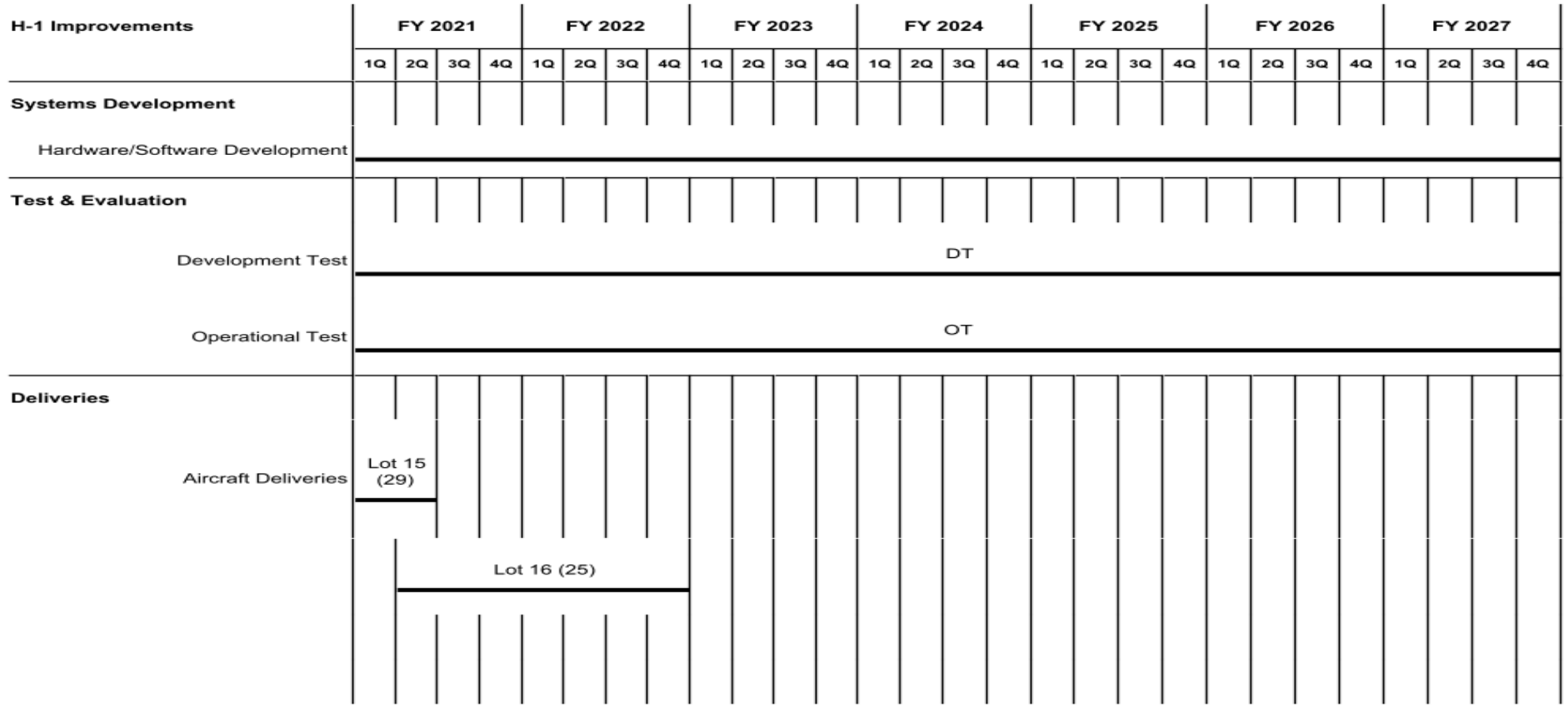

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
H-1 Improvements				
Systems Development: Hardware/Software Development: Schedule Detail	1	2021	4	2027
Test & Evaluation: Development Test: H-1 Improvements DT	1	2021	4	2027
Test & Evaluation: Operational Test: H-1 Improvements OT	1	2021	4	2027
Deliveries: Aircraft Deliveries: Lot 15 FRP Z	1	2021	2	2021
Deliveries: Aircraft Deliveries: Lot 16 FRP Z	2	2021	4	2022