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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	1,617.993	35.671	54.418	44.684	-	44.684	36.025	31.987	24.139	24.446	Continuing	Continuing
1707: <i>MH-60 Development</i>	1,617.993	26.017	46.418	44.684	-	44.684	36.025	31.987	24.139	24.446	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	9.654	8.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.654

A. Mission Description and Budget Item Justification

This Program Element funds the development and improvement of MH-60R/S systems. The MH-60R provides persistent distributed, integrated, and maneuverable capabilities in the support of the Navy's Fleet Design and Distributed Maritime Operations concepts through its primary missions: Undersea Warfare, Surface Warfare (SUW), Electronic Warfare, Command and Control, and Non-Combat Operations. Secondary missions include: Amphibious Warfare, Air Warfare, Health Services, Fleet Support - Operations, Intelligence Operations, Logistics, and Naval Special Warfare (NSW). Primary missions of the MH-60S include Combat Logistics, SUW, NSW, Combat Search and Rescue, and Airborne Mine Countermeasures. Additional missions include Intelligence, Surveillance, Reconnaissance and Targeting, Search and Rescue, and Foreign Humanitarian Assistance and Defense Support for Civil Authorities.

B. Program Change Summary (\$ in Millions)

	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>
Previous President's Budget	36.889	46.418	0.000	-	0.000
Current President's Budget	35.671	54.418	44.684	-	44.684
Total Adjustments	-1.218	8.000	44.684	-	44.684
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	8.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.001	0.000			
• SBIR/STTR Transfer	-1.217	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	44.684	-	44.684

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

Project: 9999: *Congressional Adds*

Congressional Add: *MH-60 Capability Upgrades*

Congressional Add: *MH-60 Obsolescence Issues*

	FY 2021	FY 2022
Congressional Add: <i>MH-60 Capability Upgrades</i>	4.827	8.000
Congressional Add: <i>MH-60 Obsolescence Issues</i>	4.827	0.000

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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>
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<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u>	FY 2021	FY 2022
Congressional Add Subtotals for Project: 9999	9.654	8.000
Congressional Add Totals for all Projects	9.654	8.000

Change Summary Explanation

The FY 2023 funding request was reduced by \$2.651M to account for the availability of prior year execution balances.
 Schedule: ALFS DMSMS updated to reflect an end date from 4QFY2022 to 4QFY2027 due to emerging obsolescence issues, Air Vehicle DMSMS updated to reflect a start date from 2QFY2022 to 1QFY2022 due to emerging Flight Control Obsolescence issues.
 Technical: Not Applicable

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

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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 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>				Project (Number/Name) 1707 / <i>MH-60 Development</i>			
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
1707: <i>MH-60 Development</i>	1,617.993	26.017	46.418	44.684	-	44.684	36.025	31.987	24.139	24.446	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The MH-60R/S program pursues upgrades and enhancements that pace the rapidly evolving threat and improve safety-of-flight for its pilots and aircrew. These efforts include improvements to existing sensors, digital detection, network capability, support measure weapon systems, avionics, communications, and navigation systems as well as integration of modern precision guided air-to-ground missiles, fixed-forward and crew-served weapons, the Sensor Operator Console, and data-fusion capability. The program is also evaluating Diminishing Manufacturing Sources and Material Shortages (DMSMS) and making incremental improvements to various airframe, flight safety, and mission-planning systems. The program will continue development of architecture to support integration of secure, over-the-horizon communications in addition to modern en route navigation and terminal approach systems. MH-60R/S research and development initiatives include the evaluation and validation of the platform's cybersecurity posture. The MH-60R/S program is pursuing capability studies on open hardware and software architectures, avionics, mission systems, and air-vehicle performance.

FY 2023 budget request funds the following:

1. System Configuration (SC) capability increases, including fuel management and safety, Advanced Offboard Electronic Warfare (AOEW), Modernized Tactical Networks (to include Network Enabled Weapons, Concurrent Multi-netting, and Tactical Targeting Network Technology messages), Common Aircraft Survivability Equipment (ASE), Radar Software enhancements, Minotaur Family of Systems (FoS) and third-party applications, and Avionics DMSMS solutions.
2. Development of critical aircraft survivability equipment upgrades, including the platform design for the integration of Common ASE/Distributed Aperture Infrared Counter Measures (DAIRCM) and initial investigation of a Passive Detection modern Radar Warning Receiver (RWR). Common ASE substantially improves the survivability of MH-60 aircraft, significantly enhancing the defense of high value units and enabling operations in high threat scenarios. Passive Detection/modern RWR will provide increased survivability and enable the MH-60 aircraft to be an Electronic Warfare Support Measures (ESM) node to provide threat awareness and targeting data to the Fleet.
3. Integration of Tactical Networking to enable over-the-horizon targeting, enhance target sorting, and serve as a force multiplier in network enabled weapon engagements.
4. DMSMS engineering, replacement part development, and qualification testing for known and forecasted Avionics with emphasis on displays, Mission Systems, Air Vehicle systems and other obsolete parts. These DMSMS solutions will provide considerations for cost reduction and improvement in reliability and performance. The obsolescence solutions will align with the Future Capabilities Roadmap to minimize duplication and align the mid-life upgrade configuration changes with the needed solutions.
5. Radar Upgrades in support of Minotaur FoS capabilities and integrated third-party applications will provide enhanced Battlespace Awareness and enriched over-the-horizon targeting support through improved national and tactical sensor integration via common data exchanges via enhanced Tactical Data Networks in support of Distributed Maritime Operations concepts.
6. Developmental activities including capability studies, interoperability studies, and open hardware and software architectures definition in support of MH-60 mid-life upgrades.

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>	Project (Number/Name) 1707 / <i>MH-60 Development</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>Title: Avionics H/W and S/W Development</p> <p align="right">Articles:</p> <p>Description: Development efforts support aircraft integration, problem investigation, lab management and upgrades, and repairs in support of the test program. Individual Avionics and Mission Systems hardware and software upgrades are integrated, tested and fielded as part of an overall MH-60 System Configuration (e.g. SC24, SC26, etc.). System Configuration fleet releases are planned for every two years to meet fleet requirements, add new capabilities, pace the threat, address obsolescence, and incorporate technology insertion. Avionics hardware and software development and integration efforts include: Pre-planned Product Improvements, new System Configurations, Radar enhancements, development of Network Enabled Weapons capability which includes the integration of Tactical Data Network modernization efforts, to include J11 and J12.6 series messages into the MH-60R/S Link-16 architecture and enhancements of the network architecture to include MIDS JTRS CMN-4 and TTNT, development of critical ASE upgrades, cyber evaluations/validations, Diminishing Manufacturing Sources and Material Shortages (DMSMS) solutions (to include Air Vehicle Systems, ALFS, Automatic Flight Control Computer (AFCC), Mission Systems and Avionics with emphasis on displays, Radar upgrades in support of Minotaur Family of Systems (FoS)/Enhanced Data Correlation integration.</p> <p>FY 2022 Plans: Conduct MIDS JTRS CMN-4 and Tactical Targeting Network Technology integration in support of Network Enabled Weapons efforts. Continue System Configuration development and integration efforts. Continue development of Tactical Data Network modernization to include J11 and J12.6 series messages and operator controls for Network Enabled Messages CMN-4 and TTNT. Continue activities for System Configuration development including integration of the Common ASE/DAIRCM and initial investigation of a Passive Detection modern RWR system to improve the battlespace awareness of the Fleet, survivability and Minotaur FoS capabilities and third-party applications. Continue development efforts for MH-60 Avionics and Mission Systems DMSMS solutions.</p> <p>FY 2023 Base Plans: Continue MIDS JTRS CMN-4 and Tactical Targeting Network Technology integration in support of Net Enabled Weapons efforts. Continue System Configuration development and integration efforts. Continue activities for System Configuration development including integration of the Common ASE/DAIRCM and initial investigation of a Passive Detection modern RWR system to improve the battlespace awareness of the Fleet, survivability and Radar upgrades in support of Minotaur FoS capabilities, integration and third-party applications. Continue</p>	19.929	35.806	34.884	0.000	34.884
	-	-	-	-	-

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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
development efforts for MH-60 Air Vehicle, Avionics with emphasis on displays and Mission Systems DMSMS solutions. FY 2023 OCO Plans: N/A FY 2022 to FY 2023 Increase/Decrease Statement: Decrease of \$0.922M from FY 2022 to FY 2023 to finish Common ASE Architecture and Radar Development.					
Title: Engineering and Logistics Articles:	2.039	4.236	3.550	0.000	3.550
FY 2022 Plans: Continue to provide MH-60 engineering support, integrated logistics support, government furnished equipment, support equipment, program management, contract support services, and travel to support RADAR corrections, System Configuration activities, Common ASE, and Tactical Data Links, to include data review, deficiency identification and correction, and capability fielding plans. Continue requirements definition and solution analysis for ALFS, Avionics Displays and Air Vehicle obsolescence mitigation efforts and Minotaur FoS capabilities and third-party applications. Continue MH-60 Cyber Engineering and Mid-Life Upgrade Architectural analyses. Provide requirements decomposition and Systems Engineering and Logistics support in support of MIDS JTRS CMN-4 and future System Configuration efforts. FY 2023 Base Plans: Continue to provide MH-60 engineering support, integrated logistics support, government furnished equipment, support equipment, program management, contract support services, and travel to support Radar corrections, System Configuration activities, Common ASE, and Tactical Data Links, to include data review, deficiency identification and correction, and capability fielding plans. Continue requirements definition and solution analysis for ALFS, Avionics Displays and Air Vehicle obsolescence mitigation efforts and Radar Upgrades in support of Minotaur FoS capabilities and third-party applications. Continue MH-60 Cyber Engineering and Mid-Life Upgrade Architectural analyses. Continue Systems Engineering and Logistics support of MIDS JTRS CMN-4 and future System Configuration efforts. FY 2023 OCO Plans: N/A FY 2022 to FY 2023 Increase/Decrease Statement:	-	-	-	-	-

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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
Decrease of \$0.686M from FY 2022 to FY 2023 due to the completion of Airborne Low Frequency Sonar requirements definition.					
Title: Test and Evaluation	4.049	6.376	6.250	0.000	6.250
Articles:	-	-	-	-	-
FY 2022 Plans: Continue System Configuration 20 and SC24 test support and commence radar enhancement testing. Continue System Configuration, ALFS/ Avionics Obsolescence, and RADAR test and evaluation activities. Commence Common ASE and Tactical Data Link modernization test and evaluation and Obsolescence Solution test and evaluation planning.					
FY 2023 Base Plans: Continue System Configuration, ALFS/Avionics Obsolescence, and Radar test and evaluation activities. Continue Common ASE and Tactical Data Link modernization test and evaluation and Obsolescence Solution test and evaluation planning.					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: Decrease of \$0.126M from FY 2022 to FY 2023 to finish Common ASE Architecture and Radar Development.					
Accomplishments/Planned Programs Subtotals	26.017	46.418	44.684	0.000	44.684

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APN/0530: <i>SH60 Series</i>	147.391	94.794	126.238	-	126.238	134.955	147.399	165.021	168.185	Continuing	Continuing

Remarks

D. Acquisition Strategy
MH-60 research and development efforts will be developed using cost plus incentive fee type and cost plus fixed fee contracts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0604216N / Multi-Mission Helicopter Upgrade Dev				1707 / MH-60 Development							
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Network Enabled Weapons/Data Link Enhancement	SS/CPPIF	Lockheed Martin : Owego, NY	7.989	12.800	Dec 2020	3.000	Nov 2021	2.694	Nov 2022	-		2.694	0.000	26.483	26.483
Cyber Evaluation/Validation	C/CPFF	JHU/APL : Laurel, MD	3.361	0.500	Dec 2020	0.250	Jan 2022	0.250	Jan 2023	-		0.250	1.000	5.361	5.361
Common ASE Architecture	SS/CPFF	Lockheed Martin : Owego, NY	1.800	1.000	Apr 2021	2.500	Jan 2022	0.500	Dec 2022	-		0.500	0.000	5.800	5.800
Radar Development	C/CPFF	Lockheed Martin : Owego, NY	1.818	1.215	Dec 2020	2.000	Feb 2022	1.250	Jan 2023	-		1.250	0.000	6.283	6.283
MH-60 DMSMS Solutions/Tech Insertion	SS/IDIQ	Various : Various	3.146	2.200	Dec 2020	5.506	Dec 2021	14.000	Dec 2022	-		14.000	35.766	60.618	60.618
Minotaur Development	SS/CPFF	Lockheed Martin : Owego, NY	2.100	0.000		5.600	Apr 2022	5.000	Dec 2022	-		5.000	36.300	49.000	49.000
System Configuration Releases	SS/CPFF	Lockheed Martin : Owego, NY	5.500	1.964	Oct 2020	5.000	Dec 2021	5.000	Dec 2022	-		5.000	20.000	37.464	37.464
Mid-Life Upgrade	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.250	May 2021	0.250	May 2022	0.250	May 2023	-		0.250	1.000	1.750	1.750
MIDS JTRS CMN-4	SS/CPPIF	Lockheed Martin : Owego, NY	0.000	0.000		11.700	Feb 2022	5.940	Dec 2022	-		5.940	2.000	19.640	19.640
Prior year Product Dev Cost no longer funded in the FYDP	Various	Various : Various	1,176.887	0.000		0.000		0.000		-		0.000	0.000	1,176.887	1,176.887
Subtotal			1,202.601	19.929		35.806		34.884		-		34.884	96.066	1,389.286	N/A
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Government Eng Support, Mid-Life Upgrade	Various	Various : Various	1.144	0.250	Nov 2020	0.050	Nov 2021	0.049	Nov 2022	-		0.049	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy											Date: April 2022				
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>					Project (Number/Name) 1707 / <i>MH-60 Development</i>				

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Eng Support, Net Enabled Weapons/ Data Link Enhancement	Various	Various : Various	1.100	0.474	Nov 2020	0.400	Nov 2021	0.287	Nov 2022	-		0.287	0.000	2.261	-
Government Eng Support, Common ASE Architecture	Various	Various : Various	0.850	0.200	Nov 2020	0.300	Nov 2021	0.296	Nov 2022	-		0.296	0.000	1.646	-
Government Eng Support, Radar Dev	Various	Various : Various	1.790	0.265	Nov 2020	0.300	Nov 2021	0.296	Nov 2022	-		0.296	0.250	2.901	-
Government Eng Support, DMSMS	WR	NAWC AD : Patuxent River, MD	0.118	0.200	Nov 2020	0.636	Nov 2021	1.090	Nov 2022	-		1.090	Continuing	Continuing	Continuing
Government Eng Support, System Configuration Releases	Various	Various : Various	0.470	0.400	Nov 2020	0.300	Nov 2021	0.296	Nov 2022	-		0.296	Continuing	Continuing	Continuing
Government Eng Support, Cyber Evaluation	Various	Various : Various	0.000	0.200	Nov 2020	0.200	Nov 2021	0.198	Nov 2022	-		0.198	Continuing	Continuing	Continuing
Government Eng Support, Minotaur	Various	Various : Various	0.000	0.000		0.250	Nov 2021	0.494	Nov 2022	-		0.494	5.200	5.944	-
Government Eng Support, MIDS JTRS CMN-4	Various	Various : Various	0.000	0.000		0.500	Nov 2021	0.494	Nov 2022	-		0.494	3.000	3.994	-
Government Eng Support, ALFS	Various	Various : Various	0.000	0.000		1.250	Nov 2021	0.000		-		0.000	0.000	1.250	-
Prior year support cost no longer funded in the FYDP	Various	Various : Various	167.296	0.000		0.000		0.000		-		0.000	0.000	167.296	-
Subtotal			172.768	1.989		4.186		3.500		-		3.500	Continuing	Continuing	N/A

Remarks
Decrease from FY 2022 to FY 2023 due to reduction of engineering and logistics support required for Network Enabled Weapons and Airborne Low Frequency Sonar requirements definition.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0604216N / Multi-Mission Helicopter U pgrade Dev				1707 / MH-60 Development							
Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
DT&E, System Configurations	WR	NAWC AD : Patuxent River, MD	3.971	3.299	Nov 2020	3.376	Nov 2021	3.500	Nov 2022	-		3.500	Continuing	Continuing	Continuing
DT&E, Avionics DMSMS	WR	NAWC AD : Patuxent River, MD	0.119	0.250	Nov 2020	1.000	Nov 2021	0.500	Nov 2022	-		0.500	Continuing	Continuing	Continuing
DT&E, Network Enabled Weapons/Data Link Enhancement	WR	NAWC AD : Patuxent River, MD	0.000	0.000		0.250	Nov 2021	1.000	Nov 2022	-		1.000	0.000	1.250	-
DT&E, Common ASE	WR	NAWC AD : Patuxent River, MD	0.000	0.000		1.000	Nov 2021	0.500	Nov 2022	-		0.500	0.000	1.500	-
DT&E, Radar Development	WR	NAWC AD : Patuxent River, MD	0.000	0.500	Nov 2020	0.750	Nov 2021	0.500	Nov 2022	-		0.500	0.000	1.750	-
DT&E, MIDS JTRS	WR	NAWC AD : Patuxent River, MD	0.000	0.000		0.000		0.250	Nov 2022	-		0.250	2.000	2.250	-
Prior year T&E costs no longer funded in the FYDP	Various	Various : Various	199.163	0.000		0.000		0.000		-		0.000	0.000	199.163	-
Subtotal			203.253	4.049		6.376		6.250		-		6.250	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Travel	WR	NAWC AD : Patuxent River, MD	5.115	0.050	Oct 2020	0.050	Oct 2021	0.050	Oct 2022	-		0.050	0.200	5.465	-
Prior year Mgmt Serv cost no longer funded in the FYDP	Various	Various : Various	34.256	0.000		0.000		0.000		-		0.000	0.000	34.256	-
Subtotal			39.371	0.050		0.050		0.050		-		0.050	0.200	39.721	N/A
Project Cost Totals			1,617.993	26.017		46.418		44.684		-		44.684	Continuing	Continuing	N/A

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>	Project (Number/Name) 1707 / <i>MH-60 Development</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>PE 0604216N: Multi-Mission Helicopter Upgrade Development</i>				
Systems Development: Network Enabled Weapons/Enhanced Tactical Data Links (TTNT)	1	2021	4	2024
Systems Development: MIDS JTRS	1	2022	1	2025
Systems Development: MLU Studies	1	2021	4	2027
Systems Development: Common ASE Architecture	1	2021	4	2023
Systems Development: Minotaur/Enhanced Data Correlation	1	2021	4	2027
Systems Development: System Configurations 20 /24 / 26 / 28	1	2021	4	2027
OEM DMSMS Obsolescence: ALFS DMSMS	1	2021	4	2027
OEM DMSMS Obsolescence: ESM Pulse Processor DMSMS	1	2023	4	2024
OEM DMSMS Obsolescence: Air Vehicle DMSMS Solutions	1	2022	4	2027
OEM DMSMS Obsolescence: Common Avionics Multifunction Display/Smart Multifunction Display Replacements	1	2022	2	2027
Test and Evaluation: System Configurations DT	1	2021	4	2027
Test and Evaluation: Common ASE	2	2022	4	2023
Test and Evaluation: ALFS / Avionics	1	2021	4	2022
Test and Evaluation: Radar DT	1	2021	4	2023
Test and Evaluation: Network Enabled Weapons/TTNT	2	2022	3	2024
Test and Evaluation: MIDS JTRS Integration	2	2023	4	2026
Test and Evaluation: Minotaur	1	2025	4	2027
Test and Evaluation: Obsolescence Solutions	3	2022	4	2027

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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	0.000	9.654	8.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.654
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

FY 2022 Congressional Capability Upgrade funding of \$8.0 million will fund initial analysis and development of improved Radar hardware and software, enhanced flight control software to improve Airborne Low Frequency Sonar operations, air vehicle subsystem enhancements, avionics improvements, MH-60 trainer improvements, and Anti-Submarine Warfare and Data Link demonstrations and certifications.

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

	FY 2021	FY 2022
Congressional Add: MH-60 Capability Upgrades FY 2021 Accomplishments: FY 2021 funding supports initial purchase of Improved Data Link Terminals (such as Multifunctional Information Distribution System Joint Tactical Radio Systems and Tactical Targeting Network Technology), Improved Identification, Friend or Foe (IFF), Software Enhancements, Survivability Equipment to support commencement of detailed integration efforts, and engineering and logistics requirements. FY 2022 Plans: FY 2022 funding supports initial analysis and development of Improved Radar hardware and software, enhanced flight control software to improve Airborne Low Frequency Sonar operations, air vehicle subsystem enhancements, avionics improvements, MH-60 trainer improvements, and Anti-Submarine Warfare and Data Link demonstrations and certifications.	4.827	8.000
Congressional Add: MH-60 Obsolescence Issues FY 2021 Accomplishments: FY 2021 funding supports initial analysis of MH-60 Avionics to include Display Trade Study, Mission Systems Obsolescence solutions to include AMCM and AFCC Control Laws for ALFS, and engineering and logistics requirements. FY 2022 Plans: N/A	4.827	0.000
Congressional Adds Subtotals	9.654	8.000

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

N/A

Remarks

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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 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

D. Acquisition Strategy
N/A

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Avionics SC24 IFF Mode 5 SW	SS/CPAF	Lockheed Martin : Owego, NY	0.000	0.733	Apr 2021	0.000		0.000		-		0.000	0.000	0.733	-
Common ASE	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.786	Jun 2021	0.000		0.000		-		0.000	0.000	0.786	-
System Configuration Releases	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.583	Jul 2021	0.000		0.000		-		0.000	0.000	0.583	-
Tactical Targeting Network Technology	C/CPFF	ViaSat, Inc. : Carlsbad, CA	0.000	0.902	Jul 2021	0.000		0.000		-		0.000	0.000	0.902	-
Digital ESM	C/CPIF	Various : Various	0.000	0.700	Jul 2021	0.000		0.000		-		0.000	0.000	0.700	-
AFCC Control Laws for ALFS	C/CPIF	Lockheed Martin : Owego, NY	0.000	0.780	Jul 2021	0.000		0.000		-		0.000	0.000	0.780	-
AMCM Trade Study	C/CPIF	Lockheed Martin : Owego, NY	0.000	1.750	Mar 2021	0.000		0.000		-		0.000	0.000	1.750	-
Display Trade Study	C/CPIF	Lockheed Martin : Owego, NY	0.000	2.500	Aug 2021	0.000		0.000		-		0.000	0.000	2.500	-
AFCS Control Laws	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		1.000	Jul 2022	0.000		-		0.000	0.000	1.000	-
Radar Tech Refresh	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		1.000	Jun 2022	0.000		-		0.000	0.000	1.000	-
AV Improvements: Pitch Rate Gyro	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		0.500	Aug 2022	0.000		-		0.000	0.000	0.500	-
Radar Interim Level Maintenance Enhancements	C/CPFF	Various : Various	0.000	0.000		1.000	Jun 2022	0.000		-		0.000	0.000	1.000	-
Net Ready Certification	C/CPFF	Various : Various	0.000	0.000		0.500	Jun 2022	0.000		-		0.000	0.000	0.500	-
Enhanced Electronic Support Measures Demo	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		0.300	Aug 2022	0.000		-		0.000	0.000	0.300	-
Commercial Off The Shelf Trainer Improvements	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		1.000	Aug 2022	0.000		-		0.000	0.000	1.000	-
Advanced Anti Submarine Warfare Analysis of Alternatives	C/CPFF	Various : Various	0.000	0.000		0.100	Jun 2022	0.000		-		0.000	0.000	0.100	-

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SC24 Improvements	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		1.000	Jun 2022	0.000		-		0.000	0.000	1.000	-
Electronic Support Measures Autoloader Enhancements	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		0.700	Jun 2022	0.000		-		0.000	0.000	0.700	-
Subtotal			0.000	8.734		7.100		0.000		-		0.000	0.000	15.834	N/A

Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Eng Support, Obsolescence	Various	Various : Various	0.000	0.689	Mar 2021	0.000		0.000		-		0.000	0.000	0.689	-
Government Eng Support, Capability Upgrade	WR	NAWC WD : China Lake, CA	0.000	0.170	Jul 2021	0.000		0.000		-		0.000	0.000	0.170	-
Contractor Eng Support, Obsolescence	Various	Various : Various	0.000	0.061	Mar 2021	0.000		0.000		-		0.000	0.000	0.061	-
Government Eng Support, Capability Upgrade	WR	NAWC AD : Patuxent River, MD	0.000	0.000		0.900	Apr 2022	0.000		-		0.000	0.000	0.900	-
Subtotal			0.000	0.920		0.900		0.000		-		0.000	0.000	1.820	N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	9.654	8.000	0.000	-	0.000	0.000	17.654	N/A

Remarks

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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 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Budget Schedule_03-18-2022_PR.mpp

Snapshot Date: 3/22/2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter Upgrade Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
Systems Development: Avionics SC24 IFF Mode 5 Software	3	2021	3	2023
Systems Development: Common ASE	3	2021	3	2023
Systems Development: System Configuration Releases	4	2021	1	2024
Systems Development: Tactical Targeting Network Technology	4	2021	1	2023
Systems Development: Digital ESM	4	2021	4	2022
Systems Development: AFCC Control Laws for ALFS	4	2021	2	2023
Systems Development: AMCM Trade Study	2	2021	2	2022
Systems Development: Display Trade Study	4	2021	4	2022
Systems Development: AFCS Control Laws	4	2022	3	2023
Systems Development: Radar Tech Refresh	3	2022	4	2023
Systems Development: Air Vehicle Improvements: Pitch Rate Gyro	4	2022	3	2023
Systems Development: Radar Interim Level Maintenance Enhancements	3	2022	3	2023
Systems Development: Net Ready Certification	3	2022	2	2023
Systems Development: Enhanced Electronic Support Measures Demo	4	2022	3	2023
Systems Development: Commercial Off The Shelf Trainer Improvements	4	2022	4	2023
Systems Development: Advanced Anti Submarine Warfare Analysis of Alternatives	3	2022	2	2023
Systems Development: SC24 Improvements	3	2022	3	2023
Systems Development: Electronic Support Measures Autoloader Enhancements	3	2022	3	2023