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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy **Date:** May 2021

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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	1,599.283	18.710	36.889	46.418	-	46.418	-	-	-	-	-	-
1707: <i>MH-60 Development</i>	1,599.283	18.710	26.889	46.418	-	46.418	-	-	-	-	-	-
9999: <i>Congressional Adds</i>	0.000	0.000	10.000	0.000	-	0.000	-	-	-	-	-	-

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)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	19.196	27.340	29.524	-	29.524
Current President's Budget	18.710	36.889	46.418	-	46.418
Total Adjustments	-0.486	9.549	16.894	-	16.894
• Congressional General Reductions	-	-0.451			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.010	0.000			
• SBIR/STTR Transfer	-0.475	0.000			
• Program Adjustments	0.000	0.000	17.632	-	17.632
• Rate/Misc Adjustments	-0.001	0.000	-0.738	-	-0.738

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*

Congressional Add Subtotals for Project: 9999

	FY 2020	FY 2021
	0.000	5.000
	0.000	5.000
Congressional Add Subtotals for Project: 9999	0.000	10.000

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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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Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2020	FY 2021
	Congressional Add Totals for all Projects	0.000	10.000

Change Summary Explanation

FY 2022 increase of \$18.559M for development and integration of Minotaur Family of Services (MFoS) capabilities and third-party applications and integration of Modernized Tactical Data Links on to include the Multifunctional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS) Concurrent Multi-Netting-4 (CMN-4) and early integration of the Tactical Targeting Network Technology (TTNT). MFoS 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. In addition, the integration of MIDS JTRS CMN-4 and TTNT will enhance and expand interoperability with US and allied forces (over legacy MIDS system).

The FY 2022 funding request was reduced by \$0.927M to account for the availability of prior year execution balances.

The FY 2022 funding request was reduced by \$0.738M due to miscellaneous rate adjustments.

Schedule: Minotaur/Enhanced Data Correlation end date extended from 4QFY2021 to 4QFY2022 to continue evolution of Minotaur requirements and integration efforts. Changed Air Vehicle DMSMS from 1QFY2024 through 4QFY2024 to 2QFY2022 through 4QFY2022, and Common Avionics Multifunction Display/Smart Multifunction Display Replacement from 1QFY2024 through 4QFY2025 to 1QFY2022 through 4QFY2022 for continual evaluation of DMSMS status and solution development. Added Test and Evaluation Obsolescence Solutions for evaluation of DMSMS status solution development.

Technical: Not Applicable

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy										Date: May 2021		
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
1707: <i>MH-60 Development</i>	1,599.283	18.710	26.889	46.418	-	46.418	-	-	-	-	-	-
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 2022 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 (MFoS) 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 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, Mission 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. MFoS 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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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 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. SC18, SC20, SC2X (SC24), SC2Y (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, VOR/ILS, 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, DMSMS solutions (to include ALFS, Automatic Flight Control Computer (AFCC) Mission Systems and Avionics), Minotaur/Enhanced Data Correlation integration.</p> <p>FY 2021 Plans: Continue System Configuration 20 development and integration efforts. Continue development of J11 and J12.6 series messages and operator controls for Network Enabled Messages. Continue activities for System Configuration 2X (SC24) development including integration of the Common ASE/DAIRCM system to improve survivability and Minotaur Family of Systems (MFoS) capabilities and third-party applications. Commence System Configuration 2Y (SC26) activities. Continue development efforts for MH-60 Avionics and Mission Systems DMSMS solutions. Continue cyber evaluation and APS-153 radar development efforts.</p> <p>FY 2022 Base Plans: Conduct MIDS JTRS CMN-4 and Tactical Targeting Network Technology integration in support of J11 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 MFoS capabilities and third-party applications. Continue development efforts for MH-60 Avionics and Mission Systems DMSMS solutions.</p> <p>FY 2022 OCO Plans:</p>	15.853	20.800	35.806	0.000	35.806
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A						
FY 2021 to FY 2022 Increase/Decrease Statement: Increase of \$15.006M from FY 2021 to FY 2022 for Obsolescence ramp-up, Minotaur requirements development, and MIDS JTRS CMN-4 integration activities.						
Title: Engineering and Logistics		2.485	2.040	4.236	0.000	4.236
		Articles:	-	-	-	-
FY 2021 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 System Configuration 20, Common ASE Architecture development, Network Enabled Weapons integration, APS-153 radar development, capability studies and initial open architectures, avionics, mission system, and air vehicle development cost and schedule planning estimates. Continue engineering support, integrated logistics support, government furnished equipment, support equipment, program management, contract support services, and travel to support System Configuration 2X (SC24), DAIRCM development, Radar Upgrade, and contract preparation and award. Commence System Configuration 2Y (SC26) requirements development efforts. Continue Avionics and Mission Systems DMSMS engineering support.						
FY 2022 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 MFoS 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 2022 OCO Plans: N/A						
FY 2021 to FY 2022 Increase/Decrease Statement:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Increase of \$2.196M from FY 2021 to FY 2022 for increased obsolescence and MfOS capabilities and third-party applications, engineering development activities and development of MIDS JTRS CMN-4 engineering and logistics requirements.					
Title: Test and Evaluation	0.372	4.049	6.376	0.000	6.376
Articles:	-	-	-	-	-
FY 2021 Plans: Continue System Configuration 20 and 2X test support and commence radar enhancement testing.					
FY 2022 Base Plans: 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 2022 OCO Plans: N/A					
FY 2021 to FY 2022 Increase/Decrease Statement: Increase of \$2.327M from FY 2021 to FY 2022 for commencement of Tactical Data Link modernization, Common ASE, and obsolescence test activities and continued RADAR and System Configuration 2X (SC24) testing.					
Accomplishments/Planned Programs Subtotals	18.710	26.889	46.418	0.000	46.418

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APN/0530: <i>SH60 Series</i>	141.528	144.940	94.794	-	94.794	-	-	-	-	-	-

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 2022 Navy **Date:** May 2021

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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Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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/CPIF	Lockheed Martin : Owego, NY	4.000	4.989	Aug 2020	12.800	Dec 2020	3.000	Nov 2021	-		3.000	-	-	-
Cyber Evaluation/Validation	C/CPFF	JHU/APL : Laurel, MD	2.061	1.300	Jan 2020	0.500	Dec 2020	0.100	Jan 2022	-		0.100	-	-	-
Common ASE Architecture	SS/CPFF	Lockheed Martin : Owego, NY	0.000	1.800	Apr 2020	1.000	Apr 2021	2.000	Dec 2021	-		2.000	-	-	-
Radar Development	C/CPFF	JHU/APL : Laurel, MD	0.300	1.518	Aug 2020	2.086	Dec 2020	1.500	Jan 2022	-		1.500	-	-	-
MH-60 DMSMS Solutions/Tech Insertion	SS/IDIQ	Various : Various	0.000	3.146	Jan 2020	2.200	Dec 2020	5.506	Dec 2021	-		5.506	-	-	-
Minotaur Development	SS/CPFF	Lockheed Martin : Owego, NY	0.000	2.100	Apr 2020	0.000		5.600	Dec 2021	-		5.600	-	-	-
System Configuration Releases	SS/CPFF	Lockheed Martin : Owego, NY	3.500	1.000	Dec 2019	1.964	Oct 2020	5.000	Dec 2021	-		5.000	-	-	-
Mid-Life Upgrade	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		0.250	May 2021	0.100	May 2022	-		0.100	-	-	-
MIDS JTRS CMN-4	SS/CPIF	Lockheed Martin : Owego, NY	0.000	0.000		0.000		13.000	Dec 2021	-		13.000	-	-	-
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	-	-	-
Subtotal			1,186.748	15.853		20.800		35.806		-		35.806	-	-	N/A

Remarks
Increase from FY 2021 to FY 2022 to support ramp-up of Common ASE, Minotaur development, DMSMS Solutions and Technical Insertion, and the integration of MIDS JTRS CMN-4 efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy **Date:** May 2021

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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Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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, Mid-Life Upgrade	Various	Various : Various	0.697	0.447	Nov 2019	0.250	Nov 2020	0.050	Nov 2021	-		0.050	-	-	-
Government Eng Support, Net Enabled Weapons/ Data Link Enhancement	Various	Various : Various	0.500	0.600	Nov 2019	0.475	Nov 2020	0.400	Nov 2021	-		0.400	-	-	-
Government Eng Support, Common ASE Architecture	Various	Various : Various	0.100	0.750	Nov 2019	0.200	Nov 2020	0.300	Nov 2021	-		0.300	-	-	-
Government Eng Support, Radar Dev	Various	Various : Various	1.490	0.300	Nov 2019	0.265	Nov 2020	0.300	Nov 2021	-		0.300	-	-	-
Government Eng Support, DMSMS	WR	NAWC AD : Patuxent River, MD	0.000	0.118	Nov 2019	0.200	Nov 2020	0.636	Nov 2021	-		0.636	-	-	-
Government Eng Support, System Configuration Releases	Various	Various : Various	0.250	0.220	Nov 2019	0.400	Nov 2020	0.300	Nov 2021	-		0.300	-	-	-
Government Eng Support, Cyber Evaluation	Various	Various : Various	0.000	0.000		0.200	Nov 2020	0.200	Nov 2021	-		0.200	-	-	-
Government Eng Support, Minotaur	Various	Various : Various	0.000	0.000		0.000		0.250	Nov 2021	-		0.250	-	-	-
Government Eng Support, MIDS JTRS CMN-4	Various	Various : Various	0.000	0.000		0.000		0.500	Nov 2021	-		0.500	-	-	-
Government Eng Support, ALFS	Various	Various : Various	0.000	0.000		0.000		1.250	Nov 2021	-		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	-	-	-
Subtotal			170.333	2.435		1.990		4.186		-		4.186	-	-	N/A

Remarks
 Increase from FY 2021 to FY 2022 to provide increased Engineering and Logistics support for Minotaur and Obsolescence activities and Systems Engineering and Logistics support required for the integration of MIDS-JTRS CMN-4 efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy											Date: May 2021				
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter U pgrade Dev</i>					Project (Number/Name) 1707 / <i>MH-60 Development</i>				

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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			
DT&E, System Configurations	WR	NAWC AD : Patuxent River, MD	3.718	0.253	Nov 2019	3.299	Nov 2020	3.376	Nov 2021	-		3.376	-	-	-
DT&E, Avionics DMSMS	WR	NAWC AD : Patuxent River, MD	0.000	0.119	Nov 2019	0.250	Nov 2020	1.000	Nov 2021	-		1.000	-	-	-
DT&E, Network Enabled Weapons/Data Link Enhancement	WR	NAWC AD : Patuxent River, MD	0.000	0.000		0.000		0.250	Nov 2021	-		0.250	-	-	-
DT&E, Common ASE	WR	NAWC AD : Patuxent River, MD	0.000	0.000		0.000		1.000	Nov 2021	-		1.000	-	-	-
DT&E, Radar Development	WR	NAWC AD : Patuxent River, MD	0.000	0.000		0.500	Nov 2020	0.750	Nov 2021	-		0.750	-	-	-
Prior year T&E costs no longer funded in the FYDP	Various	Various : Various	199.163	0.000		0.000		0.000		-		0.000	-	-	-
Subtotal			202.881	0.372		4.049		6.376		-		6.376	-	-	N/A

Remarks
Increase from FY 2021 to FY 2022 to support System Configurations, Avionics DMSMS, Radar development, and the integration of Network Enabled Weapons/tactical data links and Common ASE.

Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Travel	WR	NAWC AD : Patuxent River, MD	5.065	0.050	Oct 2019	0.050	Oct 2020	0.050	Oct 2021	-		0.050	-	-	-
Prior year Mgmt Serv cost no longer funded in the FYDP	Various	Various : Various	34.256	0.000		0.000		0.000		-		0.000	-	-	-
Subtotal			39.321	0.050		0.050		0.050		-		0.050	-	-	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy **Date: May 2021**

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mission Helicopter U pgrade Dev</i>	Project (Number/Name) 1707 / <i>MH-60 Development</i>
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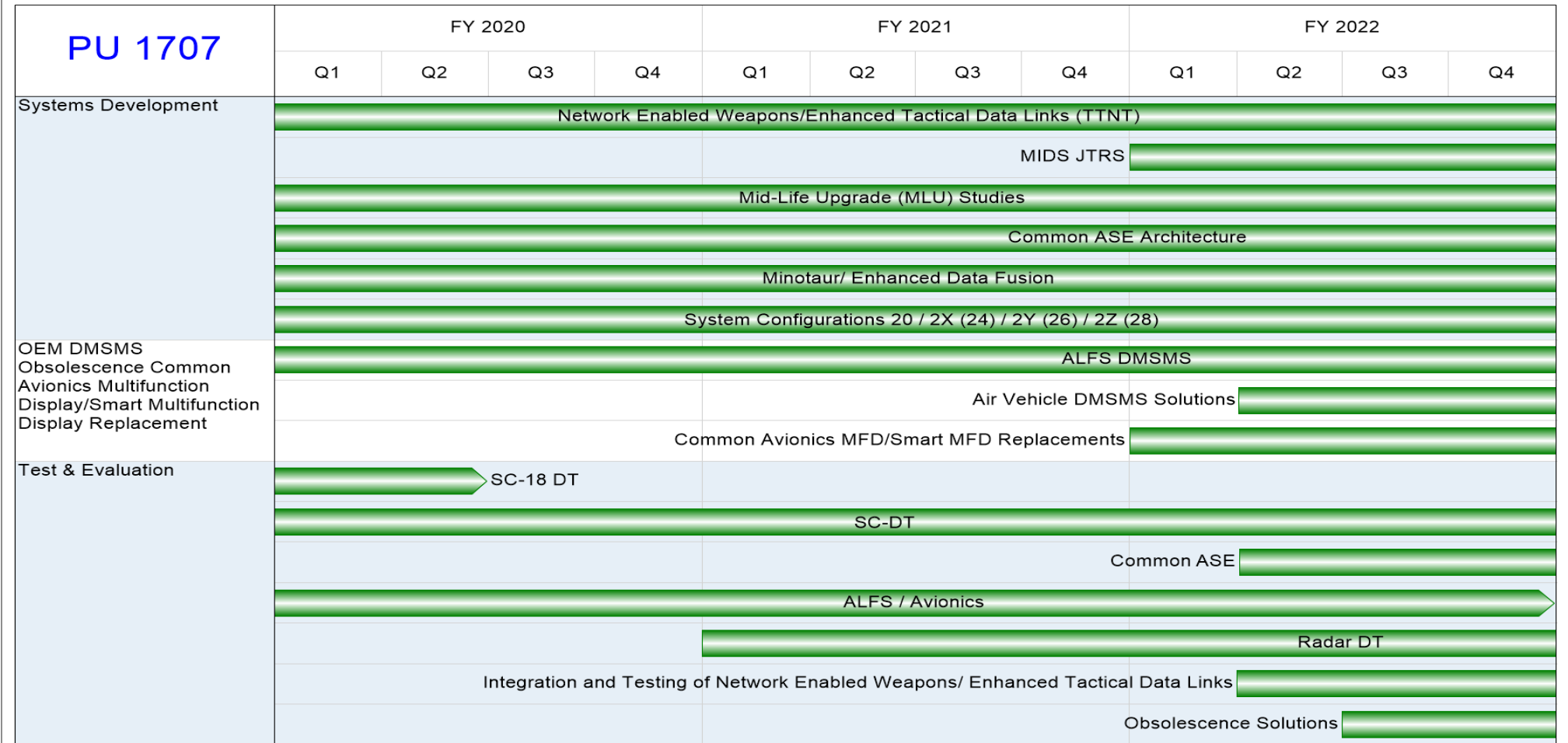
	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,599.283	18.710	26.889	46.418	-	46.418	-	-	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy **Date:** May 2021

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Budget Schedule 4-19-21

Snapshot Date: 4/30/2021

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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>

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 Tacital Data Links (TTNT)	1	2020	4	2022
Systems Development: MIDS JTRS	1	2022	4	2022
Systems Development: MLU Studies	1	2020	4	2022
Systems Development: Common ASE Architecture	1	2020	4	2022
Systems Development: Minotaur/Enhanced Data Correlation	1	2020	4	2022
Systems Development: System Configurations 20 / 2X (24) / 2Y (26) / 2Z (28)	1	2020	4	2022
OEM DMSMS Obsolescence: ALFS DMSMS	1	2020	4	2022
OEM DMSMS Obsolescence: Air Vehicle DMSMS Solutions	2	2022	4	2022
OEM DMSMS Obsolescence: Common Avionics Multifunction Display/Smart Multifunction Display Replacements	1	2022	4	2022
Test and Evaluation: System Configuration 18 (SC18) DT	1	2020	2	2020
Test and Evaluation: System Configurations DT	1	2020	4	2022
Test and Evaluation: Common ASE	2	2022	4	2022
Test and Evaluation: ALFS / Avionics	1	2020	4	2022
Test and Evaluation: Radar DT	1	2021	4	2022
Test and Evaluation: Integration and Testing of Network Enabled Weapons	2	2022	4	2022
Test and Evaluation: Obsolescence Solutions	3	2022	4	2022

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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	0.000	0.000	10.000	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

FY 2021 Congressional Capability Upgrade funding of \$5 million will fund initial purchase of Improved Data Link Terminals (such as Multifunctional Information Distribution System, Joint Tactical Radio System, and Tactical Targeting Network Technology, Improved Identification, Friend or Foe, Software Enhancements, and Survivability Equipment to support commencement of detailed integration efforts in FY 2022.

FY 2021 Congressional Obsolescence funding of \$5 million will fund initial analysis of MH-60 Avionics and Mission Systems Obsolescence solutions.

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

	FY 2020	FY 2021
Congressional Add: MH-60 Capability Upgrades <i>FY 2020 Accomplishments:</i> N/A <i>FY 2021 Plans:</i> 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.	0.000	5.000
Congressional Add: MH-60 Obsolescence Issues <i>FY 2020 Accomplishments:</i> N/A <i>FY 2021 Plans:</i> 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.	0.000	5.000
Congressional Adds Subtotals	0.000	10.000

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy **Date:** May 2021

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 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	0.000		0.733	Apr 2021	0.000		-		0.000	-	-	-
Common ASE	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		0.854	Apr 2021	0.000		-		0.000	-	-	-
System Configuration Releases	SS/CPFF	Lockheed Martin : Owego, NY	0.000	0.000		0.583	May 2021	0.000		-		0.000	-	-	-
Tactical Targeting Network Technology	C/CPFF	ViaSat, Inc. : Carlsbad, CA	0.000	0.000		1.350	May 2021	0.000		-		0.000	-	-	-
Digital ESM	C/CPIF	Various : Various	0.000	0.000		0.700	Jul 2021	0.000		-		0.000	-	-	-
AFCC Control Laws for ALFS	C/CPIF	Lockheed Martin : Owego, NY	0.000	0.000		0.780	Jul 2021	0.000		-		0.000	-	-	-
AMCM Trade Study	C/CPIF	Lockheed Martin : Owego, NY	0.000	0.000		1.750	Apr 2021	0.000		-		0.000	-	-	-
Display Trade Study	C/CPIF	Lockheed Martin : Owego, NY	0.000	0.000		2.500	Jun 2021	0.000		-		0.000	-	-	-
Subtotal			0.000	0.000		9.250		0.000		-		0.000	-	-	N/A

Support (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	NAWC AD : Patuxent River, MD	0.000	0.000		0.689	Mar 2021	0.000		-		0.000	-	-	-
Contractor Eng Support, Obsolescence	Various	Various : Various	0.000	0.000		0.061	Mar 2021	0.000		-		0.000	-	-	-
Subtotal			0.000	0.000		0.750		0.000		-		0.000	-	-	N/A

Project Cost Totals	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	0.000	10.000	0.000	-	0.000	-	-	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy **Date:** May 2021

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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PU 9999	FY 2020				FY 2021				FY 2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Systems Development	Avionics SC24 IFF Mode 5 SW											
	Common ASE											
	System Configuration Releases											
	Tactical Targeting Network Technology											
	Digital ESM											
	AFCC Control Laws for ALFS											
	AMCM Trade Study											
	Display Trade Study											

Budget Schedule 4-20-21

Snapshot Date: 4/20/2021

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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	4	2022
Systems Development: Common ASE	3	2021	4	2022
Systems Development: System Configuration Releases	3	2021	4	2022
Systems Development: Tactical Targeting Network Technology	3	2021	4	2022
Systems Development: Digital ESM	4	2021	4	2022
Systems Development: AFCC Control Laws for ALFS	4	2021	4	2022
Systems Development: AMCM Trade Study	3	2021	3	2022
Systems Development: Display Trade Study	4	2021	4	2022