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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2013 Navy	<b>DATE:</b> February 2012
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604216N: <i>Multi-Mssn Helicopter Upgrade Dev</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	54.404	17.654	6.866	-	6.866	3.570	4.934	-	-	0.000	87.428
1707: <i>MH-60R Development</i>	54.404	17.654	6.866	-	6.866	3.570	4.934	-	-	0.000	87.428

**A. Mission Description and Budget Item Justification**

This Program Element includes funding for the development support for the improvements to current systems for the MH-60R. The MH-60R Multi-Mission Helicopter provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R represents a significant avionics improvement to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare and Surface Warfare. Secondary mission areas include Search and Rescue, Vertical Replenishment, Naval Surface Fire Support, logistics support, personnel transport and Medical Evacuation.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013 Base</b>	<b>FY 2013 OCO</b>	<b>FY 2013 Total</b>
Previous President's Budget	55.792	17.673	6.871	-	6.871
Current President's Budget	54.404	17.654	6.866	-	6.866
Total Adjustments	-1.388	-0.019	-0.005	-	-0.005
• Congressional General Reductions	-	-0.019			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.090	-			
• Program Adjustments	-	-	-0.016	-	-0.016
• Rate/Misc Adjustments	-	-	0.011	-	0.011
• Congressional General Reductions Adjustments	-0.298	-	-	-	-

**Change Summary Explanation**

Technical: Not applicable.

Schedule: Not applicable.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2013 Navy **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604216N: <i>Multi-Mssn Helicopter Upgrade Dev</i>	<b>PROJECT</b> 1707: <i>MH-60R Development</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
1707: <i>MH-60R Development</i>	54.404	17.654	6.866	-	6.866	3.570	4.934	-	-	0.000	87.428
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**A. Mission Description and Budget Item Justification**

The primary mission areas of the MH-60R include Anti-Submarine Warfare and Surface Warfare. Secondary mission areas include Search and Rescue, Vertical Replenishment, Naval Surface Fire Support, logistics support, personnel transport and Medical Evacuation. The MH-60R provides direct support to the Carrier Strike Group and provides Link Communications Relay via VHF/UHF, Link-16, and Common Data Link (CDL) with the incorporation of Interface Design Specification Ship Air Upgrade ((SAU)-07-000) full data exchange via CDL. Ku-Band will be provided to DDG-1000, CVN-78 Class and LCS platforms. Aircraft Ship Integrated Secure and Traverse reduces operational requirements aboard ships by eliminating the need for hauldown capability and providing automatic movements for aircraft on deck. The MH-60R is Post-Milestone III; executing Pre-Planned Product Improvements (P3I) to Air Vehicle and Mission systems. P3I includes upgrades to communication, navigation, Identification Friend or Foe (IFF), Multi-Spectral Targeting System(MTS)/Forward Looking Infrared Radar (FLIR), Automatic Radar Periscope Detection and Discrimination (ARPDD), weapons, data link, safety, maintenance, airframe and mission planning systems. Identification, Friend or Foe (IFF) Mode 5 Interrogator capability is being embedded into the APS-147 Radar to provide positive determination of friendly combatants beyond visual range. The current magnesium gearbox is being replaced with aluminum gearbox to reduce corrosion and improve total ownership cost.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2011	FY 2012	FY 2013
<b>Title:</b> Avionics H/W and S/W Development <div style="text-align: right; margin-top: 10px;"><b>Articles:</b></div>	43.214 0	5.767 0	4.000 0
<b>Description:</b> Supports aircraft integration, problem investigation and resolution, lab management and upgrades, hardware investigations, and repairs in support of the test program. Provides for Integrated Logistics Support and Program Management Board Support and subvendor support. Avionics hardware and software development and integration to include: P3I/Link-16, ARPDD, IFF Mode 5 interrogator, Communications, GPS, Acoustics and post processing. Mission planning, MTS/FLIR, Weapons, Stores and self defense, Data fusion, and Logistics products including Integrated Electronic Technical Manuals. ARPDD provides an automated periscope detection, classification, and tracking capability to reliably detect periscopes and masts, and reliably discriminate periscopes from clutter and confusion targets. This capability is suitable for air and surface platforms. The current magnesium gearbox is being replaced with aluminum gearbox to reduce corrosion and improve total ownership cost.			
<b>FY 2011 Accomplishments:</b> Continued ARPDD System Design and Development, P3I integration testing, IFF Mode 5, and ARPDD integrated testing.			
<b>FY 2012 Plans:</b>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604216N: Multi-Mssn Helicopter Upgrade Dev	PROJECT 1707: MH-60R Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Continue Automatic Radar Periscope Detection and Discrimination (ARPDD) System Design Development(SDD), Pre-Planned Product Improvements (P3I) integration testing, Identification Friend or Foe (IFF) Mode 5, and ARPDD integrated testing. Begin aluminum gearbox development. <b>FY 2013 Plans:</b> Continue aluminum gearbox development.				
<b>Title:</b> Engineering and Logistics  <b>FY 2011 Accomplishments:</b> Continued to provide engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support P3I integration testing, Ship Air Upgrade (SAU) SAU-07-000 testing, ARPDD SDD, and conduct ARPDD integrated testing. <b>FY 2012 Plans:</b> Continue to provide engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support P3I integration testing, SAU-07-000 testing, ARPDD SDD, and conduct ARPDD integrated testing. <b>FY 2013 Plans:</b> Continue to provide engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support IFF Mode 5 Inerrogator development and Aluminum Gearbox development.		<b>Articles:</b> 1.622 0	3.278 0	0.831 0
<b>Title:</b> Avionics Testing and Evaluation  <b>FY 2011 Accomplishments:</b> Continued to provide MH-60R Mission Avionics testing, Avionics Mission P3I, and ARPDD testing and evaluation efforts. Begin IFF Mode 5 Interrogator testing and evaluation efforts. <b>FY 2012 Plans:</b> Continue to provide MH-60R Mission Avionics testing, Avionics Mission P3I, and ARPDD testing and evaluation efforts. Continue IFF Mode 5 Interrogator testing and evaluation efforts. <b>FY 2013 Plans:</b>		<b>Articles:</b> 9.568 0	8.609 0	2.035 0

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Navy							<b>DATE:</b> February 2012				
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0604216N: <i>Multi-Mssn Helicopter Upgrade Dev</i>			<b>PROJECT</b> 1707: <i>MH-60R Development</i>					

  

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>				<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
Continue to provide MH-60R Mission Avionics testing and Identification, Friend or Foe (IFF) Mode 5 Interrogator testing and evaluation efforts. Begin aluminum Gearbox testing and evaluation.						
<b>Accomplishments/Planned Programs Subtotals</b>				54.404	17.654	6.866

  

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APN-1 BLI:018200: <i>MH-60R</i>	1,021.086	984.956	842.762	0.000	842.762	985.397	1,211.220	1,363.844	82.716	0.000	12,280.317
• APN-6 BLI: 060510: <i>MH-60R</i>	52.286	27.737	0.353	0.000	0.353	0.443	0.581	1.310	0.000	0.000	298.297
• APN-5 BLI: 053000: <i>SH60 Series</i>	21.484	37.885	46.874	0.000	46.874	57.400	56.203	60.064	72.243	439.842	872.325

  

**D. Acquisition Strategy**

Initial Operating Capability (IOC) was achieved in Dec 05 and the Milestone III, Full Rate Production decision occurred in March 2006. As the SH-60B and SH-60F reach the end of their service life, the MH-60R serves as the replacement weapon system. The MH-60R weapon system began fielding in FY2006. The mission systems include Common Cockpit, Airborne Low Frequency Sonar, sonobuoy launcher, Commercial-off-the-Shelf Acoustics Processor, Electronic Support Measure, Mission planning, Multi-Spectral Targeting System (MTS) / Forward Looking Infrared Radar (FLIR) system, Multi Mission Radar, Automatic Radar Periscope Detection and Discrimination (ARPDD), Common Data Link (CDL) Hawklink, Integrated Self Defense and weapons capability. Pre-Planned Product Improvement (P3I) upgrades will be integrated, tested, and fielded to ensure increased capabilities are provided to the fleet user.

  

**E. Performance Metrics**

Successfully achieve IOC for the ARPDD upgrade to the MH-60R Multi-Mode Radar. Improve Electronic Support Measure (ESM) Mission Data Load performance prior to next operational deployment and determine if any long term ESM software/hardware fixes are required. Determine solutions to the Automatic Video Tracking lock and Eye-safe Laser Range Finder labeling prior to next operational deployment.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy										DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT					
1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)				PE 0604216N: Multi-Mssn Helicopter Upgrade Dev				1707: MH-60R Development					
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Dev, Avionics (LMSI)	SS/CPFF	Lockheed Martin:Owego, NY	853.898	2.167	Nov 2011	-		-		-	0.000	856.065	856.065
Primary Hdw Dev, Avionics (SAU)	SS/CPIF	Lockheed Martin:Owego, NY	16.582	-		-		-		-	0.000	16.582	16.582
Primary Hdw Dev, Airframe (SAC)	SS/FFP	Sikorsky:Stratford, CT	-	3.600	Mar 2012	4.000	Feb 2013	-		4.000	3.900	11.500	11.500
All Product Dev Cost from FY93-FY11	Various	Various:Not Specified	280.389	-		-		-		-	0.000	280.389	280.389
Subtotal			1,150.869	5.767		4.000		-		4.000	3.900	1,164.536	1,164.536
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWC AD:Patuxent River, MD	5.582	0.669	Nov 2011	0.751	Nov 2012	-		0.751	0.000	7.002	
Government Engineering Support	WR	NAWC WD:China Lake, CA	15.810	2.009	Nov 2011	-		-		-	0.000	17.819	
Government Engineering Support	Various	Various:Various	4.292	0.500	Nov 2011	-		-		-	0.741	5.533	
All Product Dev Cost From FY93-FY11	Various	Various:Various	123.477	-		-		-		-	0.000	123.477	
Subtotal			149.161	3.178		0.751		-		0.751	0.741	153.831	
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC AD:Patuxent River, MD	135.503	6.984	Nov 2011	1.480	Nov 2012	-		1.480	4.384	148.351	

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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operation Test & Evaluation	WR	COMOPTEVFOR:Norfolk, VA	12.132	1.625	Nov 2011	0.555	Nov 2012	-		0.555	0.000	14.312	
All T&E costs from FY93-FY11	Various	various:various	11.688	-		-		-		-	0.000	11.688	
Subtotal			159.323	8.609		2.035		-		2.035	4.384	174.351	
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various:Various	24.589	-		-		-		-	0.000	24.589	
Travel	WR	NAWC AD:Patuxent River, MD	4.642	0.100	Nov 2011	0.080	Nov 2012	-		0.080	0.000	4.822	
All Mangement cost from FY03- FY11	Various	Various:Various	9.667	-		-		-		-	0.000	9.667	
Subtotal			38.898	0.100		0.080		-		0.080	0.000	39.078	
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,498.251	17.654		6.866		-		6.866	9.025	1,531.796	
Remarks													

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Navy			<b>DATE:</b> February 2012		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604216N: <i>Multi-Mssn Helicopter Upgrade Dev</i>		<b>PROJECT</b> 1707: <i>MH-60R Development</i>	

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	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>PE 0604216N: Multi-Mission Helicopter Upgrade Development</b>																												
Acquisition Milestones: Milestones: ARPDD IOC																												
Systems Development: HW/SW P3: P3 Integration																												
Systems Development: HW/SW ARPDD: ARPDD Integration Test																												
Systems Development: HW/SW SAU-07-000: SAU-07-000 Test																												
Systems Development: HW/SW Aluminum Gear Box: Aluminum Gear Box Development																												
Test & Evaluation: P3 Integration: P3 Integration																												
Test & Evaluation: ARPDD: ARPDD OT																												
Production Milestones: ARPDD Contract: ARPDD Contract																												
Production Milestones: ARPDD: ARPDD																												
Production Milestones: Deliveries: ARPDD Production Incorporation																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Navy			<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604216N: <i>Multi-Mssn Helicopter Upgrade Dev</i>	<b>PROJECT</b> 1707: <i>MH-60R Development</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>PE 0604216N: Multi-Mission Helicopter Upgrade Development</i></b>				
Acquisition Milestones: Milestones: ARPDD IOC	4	2013	4	2013
Systems Development: HW/SW P3: P3 Integration	1	2011	2	2011
Systems Development: HW/SW ARPDD: ARPDD Integration Test	1	2011	2	2012
Systems Development: HW/SW SAU-07-000: SAU-07-000 Test	1	2011	1	2012
Systems Development: HW/SW Aluminum Gear Box: Aluminum Gear Box Development	2	2012	4	2015
Test & Evaluation: P3 Integration: P3 Integration	1	2011	2	2011
Test & Evaluation: ARPDD: ARPDD OT	3	2012	4	2012
Production Milestones: ARPDD Contract: ARPDD Contract	1	2011	4	2012
Production Milestones: ARPDD: ARPDD	4	2011	4	2011
Production Milestones: Deliveries: ARPDD Production Incorporation	2	2013	2	2013