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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy DATE: April 2013

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| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: Research, Development, Test & Evaluation, Navy<br>BA 5: System Development & Demonstration (SDD) | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604216N: Multi-Mssn Helicopter Upgrade Dev |
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| COST (\$ in Millions)    | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup> | FY 2014 Total | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Cost To Complete | Total Cost |
|--------------------------|-----------------|---------|----------------------|--------------|---------------------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element    | 1,502.149       | 16.876  | 6.866                | 17.565       | -                         | 17.565        | 10.831  | 9.992   | 0.000   | 0.000   | 0.000            | 1,564.279  |
| 1707: MH-60R Development | 1,502.149       | 16.876  | 6.866                | 17.565       | -                         | 17.565        | 10.831  | 9.992   | 0.000   | 0.000   | 0.000            | 1,564.279  |

**MDAP/MAIS Code(s):** 191

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

## Note

Advanced Precision Kill Weapon System (APKWS) is a new start in FY 2014.

## 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.

FY14 budget request funds APKWS development and government engineering, logistics, and testing for APKWS, the gearbox corrosion upgrade and mission avionics.

| <b>B. Program Change Summary (\$ in Millions)</b> | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014 Base</b> | <b>FY 2014 OCO</b> | <b>FY 2014 Total</b> |
|---------------------------------------------------|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget                       | 17.654         | 6.866          | 3.570               | -                  | 3.570                |
| Current President's Budget                        | 16.876         | 6.866          | 17.565              | -                  | 17.565               |
| Total Adjustments                                 | -0.778         | 0.000          | 13.995              | -                  | 13.995               |
| • Congressional General Reductions                | -              | -              |                     |                    |                      |
| • Congressional Directed Reductions               | -              | -              |                     |                    |                      |
| • Congressional Rescissions                       | -              | -              |                     |                    |                      |
| • Congressional Adds                              | -              | -              |                     |                    |                      |
| • Congressional Directed Transfers                | -              | -              |                     |                    |                      |
| • Reprogrammings                                  | -0.268         | 0.000          |                     |                    |                      |
| • SBIR/STTR Transfer                              | -0.510         | 0.000          |                     |                    |                      |
| • Program Adjustments                             | 0.000          | 0.000          | 10.100              | -                  | 10.100               |
| • Rate/Misc Adjustments                           | 0.000          | 0.000          | 3.895               | -                  | 3.895                |

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy                                                                                                                                                                                                                                                                                                                      |  | DATE: April 2013                                                        |
| APPROPRIATION/BUDGET ACTIVITY<br>1319: Research, Development, Test & Evaluation, Navy<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                         |  | R-1 ITEM NOMENCLATURE<br>PE 0604216N: Multi-Mssn Helicopter Upgrade Dev |
| <b>Change Summary Explanation</b><br>Technical: The aluminum gearbox development effort has been replaced by upgrading the current magnesium gearbox. Both efforts reduce gearbox corrosion and lower total ownership costs; however, the upgraded magnesium box provides a significant developmental cost savings.<br><br>Schedule: APKWS testing efforts commence in FY 2014. |  |                                                                         |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |         |                      |              |                                                                         |               |         |         |                                     | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>1319: Research, Development, Test & Evaluation, Navy<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604216N: Multi-Mssn Helicopter Upgrade Dev |               |         |         | PROJECT<br>1707: MH-60R Development |                  |                  |            |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                               | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                             | FY 2018          | Cost To Complete | Total Cost |
| 1707: MH-60R Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1,502.149       | 16.876  | 6.866                | 17.565       | -                                                                       | 17.565        | 10.831  | 9.992   | 0.000                               | 0.000            | 0.000            | 1,564.279  |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0               | 0       | 0                    | 0            |                                                                         | 0             | 0       | 0       | 0                                   | 0                |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| Note                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| Advanced Precision Kill Weapon System (APKWS) is a new start in FY 2014.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| 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-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/Forward Looking Infrared Radar, Automatic Radar Periscope Detection and Discrimination (ARPDD), weapons, data link, safety, maintenance, airframe and mission planning systems. 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 upgraded to reduce corrosion and improve total ownership cost. APKWS integration will support Surface Warfare and Maritime Interdiction Operations by providing Forward Firing Weapons, which includes Rockets and Anti-swarm weapons, by addressing the Fast Attack Craft/Fast Inshore Attack Craft Threat. |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| FY14 budget request funds APKWS development and government engineering, logistics, and testing for APKWS, the gearbox corrosion upgrade and mission avionics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| Title: Avionics H/W and S/W Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |         |                      |              |                                                                         |               |         |         | FY 2012                             | FY 2013          | FY 2014          |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                         |               |         |         | 0.700                               | 3.000            | 12.500           |            |
| Articles:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |         |                      |              |                                                                         |               |         |         | 0                                   | 0                | 0                |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
| Description: 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, ARPDD, IFF Mode 5 interrogator, and APKWS. 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                         |               |         |         |                                     |                  |                  |            |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | DATE: April 2013                                                        |                                     |            |  |
| APPROPRIATION/BUDGET ACTIVITY<br>1319: Research, Development, Test & Evaluation, Navy<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | R-1 ITEM NOMENCLATURE<br>PE 0604216N: Multi-Mssn Helicopter Upgrade Dev | PROJECT<br>1707: MH-60R Development |            |  |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | FY 2012                                                                 | FY 2013                             | FY 2014    |  |
| suitable for air and surface platforms. The current magnesium gearbox is being upgraded to reduce corrosion and improve total ownership cost.<br><br><b>FY 2012 Accomplishments:</b><br>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.<br><br><b>FY 2013 Plans:</b><br>Commence gearbox corrosion upgrade.<br><br><b>FY 2014 Plans:</b><br>Commence Advanced Precision Kill Weapon System (APKWS) development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                         |                                     |            |  |
| <b>Title:</b> Engineering and Logistics<br><br><b>Articles:</b><br><br><b>FY 2012 Accomplishments:</b><br>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, Ship Air Upgrade 07-000 testing, ARPDD SDD, and conduct ARPDD integrated testing.<br><br><b>FY 2013 Plans:</b><br>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, the gearbox corrosion upgrade, and ARPDD testing.<br><br><b>FY 2014 Plans:</b><br>Continue to provide engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support mission avionics P3I and gearbox corrosion upgrade. Commence APKWS engineering and logistics efforts. |  | 4.391<br>0                                                              | 1.031<br>0                          | 1.605<br>0 |  |
| <b>Title:</b> Test and Evaluation<br><br><b>Articles:</b><br><br><b>FY 2012 Accomplishments:</b><br>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.<br><br><b>FY 2013 Plans:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 11.785<br>0                                                             | 2.835<br>0                          | 3.460<br>0 |  |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |         |                 |                                                                            |                  |         |         |                                     |         | DATE: April 2013    |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>1319: Research, Development, Test & Evaluation, Navy<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0604216N: Multi-Mssn Helicopter<br>Upgrade Dev |                  |         |         | PROJECT<br>1707: MH-60R Development |         |                     |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |         |                 |                                                                            |                  |         |         |                                     |         | FY 2012             | FY 2013    | FY 2014 |
| Continue to provide ARPDD MH-60R Mission Avionics testing and Identification, Friend or Foe Mode 5 Interrogator testing and evaluation efforts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |         |                 |                                                                            |                  |         |         |                                     |         |                     |            |         |
| FY 2014 Plans:<br>Continue to provide MH-60R Mission testing. Commence Advanced Precision Kill Weapon System and gearbox corrosion upgrade test and evaluation efforts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |         |                 |                                                                            |                  |         |         |                                     |         |                     |            |         |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |         |                 |                                                                            |                  |         |         |                                     |         | 16.876              | 6.866      | 17.565  |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |         |                 |                                                                            |                  |         |         |                                     |         |                     |            |         |
| Line Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO                                                             | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                             | FY 2018 | Cost To<br>Complete | Total Cost |         |
| • APN-1 BLI:018200: MH-60R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 948.138 | 842.762 | 831.071         |                                                                            | 831.071          | 979.280 | 963.979 | 81.342                              | 0.000   | 0.000               | 11,455.043 |         |
| • APN-6 BLI:060510: MH-60R<br>spares                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 28.583  | 0.353   | 0.540           |                                                                            | 0.540            | 0.680   | 0.697   | 0.000                               | 0.000   | 0.000               | 298.726    |         |
| • APN-5 BLI:053000: SH60 Series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 34.403  | 46.848  | 66.653          |                                                                            | 66.653           | 60.710  | 59.573  | 71.779                              | 73.054  | Continuing          | Continuing |         |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |         |                 |                                                                            |                  |         |         |                                     |         |                     |            |         |
| 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 / Forward Looking Infrared Radar system, Multi Mission Radar, Automatic Radar Periscope Detection and Discrimination (ARPDD), Common Data Link Hawklink, Integrated Self Defense and weapons capability. Pre-Planned Product Improvement 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)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 2014 Navy                                                                                                                                                                                                                                                                               |                        |                                |                 |         |            |                                                                         |            |              |            |                                     |            | DATE: April 2013 |                  |            |                          |
| APPROPRIATION/BUDGET ACTIVITY<br>1319: Research, Development, Test & Evaluation, Navy<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                              |                        |                                |                 |         |            | R-1 ITEM NOMENCLATURE<br>PE 0604216N: Multi-Mssn Helicopter Upgrade Dev |            |              |            | PROJECT<br>1707: MH-60R Development |            |                  |                  |            |                          |
| Product Development (\$ in Millions)                                                                                                                                                                                                                                                                                                 |                        |                                |                 | FY 2012 |            | FY 2013                                                                 |            | FY 2014 Base |            | FY 2014 OCO                         |            | FY 2014 Total    |                  |            |                          |
| Cost Category Item                                                                                                                                                                                                                                                                                                                   | Contract Method & Type | Performing Activity & Location | All Prior Years | Cost    | Award Date | Cost                                                                    | Award Date | Cost         | Award Date | Cost                                | Award Date | Cost             | Cost To Complete | Total Cost | Target Value of Contract |
| Primary Hdw Dev, Airframe (SAC)                                                                                                                                                                                                                                                                                                      | SS/FFP                 | Sikorsky:Stratford, CT         | 0.000           | 0.000   |            | 2.400                                                                   | Jun 2013   | 0.000        |            | -                                   |            | 0.000            | 0.000            | 2.400      | 2.400                    |
| Primary Hdw Dev, Avionics (LMSI)                                                                                                                                                                                                                                                                                                     | SS/CPFF                | Lockheed Martin:Owego, NY      | 871.890         | 0.700   | Jan 2012   | 0.600                                                                   | Apr 2013   | 0.000        |            | -                                   |            | 0.000            | 0.000            | 873.190    | 873.190                  |
| Primary Hdw/SW Dev, Advanced Precision Kill Weapon System (APKWS)                                                                                                                                                                                                                                                                    | TBD                    | Lockheed Martin:Owego, NY      | 0.000           | 0.000   |            | 0.000                                                                   |            | 5.700        | Jun 2014   | -                                   |            | 5.700            | 2.000            | 7.700      | 7.700                    |
| Primary Hdw Dev. APKWS                                                                                                                                                                                                                                                                                                               | TBD                    | Sikorsky:Stratford, CT         | 0.000           | 0.000   |            | 0.000                                                                   |            | 6.800        | Jun 2014   | -                                   |            | 6.800            | 4.650            | 11.450     | 11.450                   |
| Primary Hdw Dev, APKWS                                                                                                                                                                                                                                                                                                               | WR                     | NSWC Crane:Crane, IN           | 0.000           | 0.000   |            | 0.000                                                                   |            | 0.000        |            | -                                   |            | 0.000            | 2.500            | 2.500      |                          |
| Prior year Product Dev Cost no longer funded in the FYDP                                                                                                                                                                                                                                                                             | Various                | Various:Various                | 280.389         | 0.000   |            | 0.000                                                                   |            | 0.000        |            | -                                   |            | 0.000            | 0.000            | 280.389    |                          |
| Subtotal                                                                                                                                                                                                                                                                                                                             |                        |                                | 1,152.279       | 0.700   |            | 3.000                                                                   |            | 12.500       |            | 0.000                               |            | 12.500           | 9.150            | 1,177.629  |                          |
| Remarks                                                                                                                                                                                                                                                                                                                              |                        |                                |                 |         |            |                                                                         |            |              |            |                                     |            |                  |                  |            |                          |
| The aluminum gearbox development effort originally planned to start in FY 2012 has been delayed until FY 2013 and replaced by upgrading the current magnesium gearbox. Both efforts reduce gearbox corrosion and lower total ownership costs; however, the upgraded magnesium box provides a significant developmental cost savings. |                        |                                |                 |         |            |                                                                         |            |              |            |                                     |            |                  |                  |            |                          |
| Support (\$ in Millions)                                                                                                                                                                                                                                                                                                             |                        |                                |                 | FY 2012 |            | FY 2013                                                                 |            | FY 2014 Base |            | FY 2014 OCO                         |            | FY 2014 Total    |                  |            |                          |
| Cost Category Item                                                                                                                                                                                                                                                                                                                   | Contract Method & Type | Performing Activity & Location | All 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 Engineering Support                                                                                                                                                                                                                                                                                                       | WR                     | NAWC AD:Patuxent River, MD     | 5.582           | 4.291   | Nov 2011   | 0.975                                                                   | Nov 2012   | 0.809        | Nov 2013   | -                                   |            | 0.809            | 1.793            | 13.450     |                          |
| Government Eng Spt                                                                                                                                                                                                                                                                                                                   | WR                     | NAWC WD:China Lake             | 0.000           | 0.000   |            | 0.000                                                                   |            | 0.100        | Nov 2013   | -                                   |            | 0.100            | 0.150            | 0.250      |                          |
| Government Eng Spt                                                                                                                                                                                                                                                                                                                   | Various                | Various:Various                | 0.000           | 0.000   |            | 0.000                                                                   |            | 0.650        | Nov 2013   | -                                   |            | 0.650            | 0.600            | 1.250      |                          |
| Prior year support cost no longer funded in the FYDP                                                                                                                                                                                                                                                                                 | Various                | Various:Various                | 146.088         | 0.000   |            | 0.000                                                                   |            | 0.000        |            | -                                   |            | 0.000            | 0.000            | 146.088    |                          |
| Subtotal                                                                                                                                                                                                                                                                                                                             |                        |                                | 151.670         | 4.291   |            | 0.975                                                                   |            | 1.559        |            | 0.000                               |            | 1.559            | 2.543            | 161.038    |                          |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------|------------------------|----------------|-------------------|---------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|--------------------|-------------------|---------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Navy</b>                                                                                                                                   |                                   |                                           |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                           |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                |                                   |                                           |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604216N: <i>Multi-Mssn Helicopter Upgrade Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>1707: <i>MH-60R Development</i> |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                                                         |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                              |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                       | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Developmental Test & Evaluation                                                                                                                                                                     | WR                                | NAWC AD:Patuxent River, MD                | 135.503                | 9.831          | Nov 2011          | 2.280                                                                                 | Nov 2012          | 2.263               | Nov 2013          | -                  |                   | 2.263                                             | 5.400                   | 155.277           |                                 |
| Operation Test & Evaluation                                                                                                                                                                         | WR                                | COMOPTEVFOR:Norfolk, VA                   | 12.132                 | 1.954          | Nov 2011          | 0.555                                                                                 | Nov 2012          | 1.197               | Nov 2013          | -                  |                   | 1.197                                             | 3.650                   | 19.488            |                                 |
| Prior year T&E costs no longer funded in the FYDP                                                                                                                                                   | Various                           | various:various                           | 11.688                 | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                             | 0.000                   | 11.688            |                                 |
| <b>Subtotal</b>                                                                                                                                                                                     |                                   |                                           | 159.323                | 11.785         |                   | 2.835                                                                                 |                   | 3.460               |                   | 0.000              |                   | 3.460                                             | 9.050                   | 186.453           |                                 |
| <b>Remarks</b><br>FY 2012 and FY 2013 funding increased for Automatic Radar Periscope Detection and Discrimination, mission avionics and Identification, Friend or Foe Mode 5 interrogator testing. |                                   |                                           |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   |                                                   |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                                                                         |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                              |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                                           | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                           | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                       | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Travel                                                                                                                                                                                              | WR                                | NAWC AD:Patuxent River, MD                | 4.621                  | 0.100          | Nov 2011          | 0.056                                                                                 | Nov 2012          | 0.046               | Nov 2013          | -                  |                   | 0.046                                             | 0.080                   | 4.903             |                                 |
| Prior year Mangement cost no longer funded in the FYDP                                                                                                                                              | Various                           | Various:Various                           | 34.256                 | 0.000          |                   | 0.000                                                                                 |                   | 0.000               |                   | -                  |                   | 0.000                                             | 0.000                   | 34.256            |                                 |
| <b>Subtotal</b>                                                                                                                                                                                     |                                   |                                           | 38.877                 | 0.100          |                   | 0.056                                                                                 |                   | 0.046               |                   | 0.000              |                   | 0.046                                             | 0.080                   | 39.159            |                                 |
|                                                                                                                                                                                                     |                                   |                                           | <b>All Prior Years</b> | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                        |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                              | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                                                                                                                                                          |                                   |                                           | 1,502.149              | 16.876         |                   | 6.866                                                                                 |                   | 17.565              |                   | 0.000              |                   | 17.565                                            | 20.823                  | 1,564.279         |                                 |
| <b>Remarks</b>                                                                                                                                                                                      |                                   |                                           |                        |                |                   |                                                                                       |                   |                     |                   |                    |                   |                                                   |                         |                   |                                 |

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**Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy**

**DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**

1319: Research, Development, Test & Evaluation, Navy  
BA 5: System Development & Demonstration (SDD)

**R-1 ITEM NOMENCLATURE**

PE 0604216N: Multi-Mssn Helicopter  
Upgrade Dev

**PROJECT**

1707: MH-60R Development

| PE 0604216N: Multi-Mission<br>Helicopter Upgrade Development | FY 2012     |    |    |             | FY 2013 |    |                                    |                                  | FY 2014 |    |    |    | FY 2015                       |    |    |    | FY 2016     |    |    |    | FY 2017 |    |    |    | FY 2018 |    |    |    |
|--------------------------------------------------------------|-------------|----|----|-------------|---------|----|------------------------------------|----------------------------------|---------|----|----|----|-------------------------------|----|----|----|-------------|----|----|----|---------|----|----|----|---------|----|----|----|
|                                                              | 1Q          | 2Q | 3Q | 4Q          | 1Q      | 2Q | 3Q                                 | 4Q                               | 1Q      | 2Q | 3Q | 4Q | 1Q                            | 2Q | 3Q | 4Q | 1Q          | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q |
| <b>Acquisition Milestones</b>                                |             |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| Milestones                                                   |             |    |    |             |         |    |                                    | ARPDD<br>IOC<br>▲                |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| <b>Systems Development</b>                                   |             |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| HW/SW ARPDD                                                  | ARPDD<br>IT |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| HW/SW Ship Air Upgrade<br>((SAU)-07-000)                     | SAU<br>Test |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| Gearbox Corrosion Improvement                                |             |    |    |             |         |    |                                    | Gearbox Corrosion<br>Improvement |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| HW/SW Advanced Precision Kill<br>Weapon System (APKWS)       |             |    |    |             |         |    |                                    |                                  |         |    |    |    | APKWS integration development |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| ARPDD                                                        |             |    |    | ARPDD<br>OT |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| <b>Production Milestones</b>                                 |             |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| ARPDD System Development &<br>Demonstration (SDD) Contract   | ARPDD SDD   |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| ARPDD                                                        |             |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| Deliveries                                                   |             |    |    |             |         |    | ARPDD<br>Production<br>Incorp<br>▼ |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
| <b>Test and Evaluation</b>                                   |             |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
|                                                              |             |    |    |             |         |    |                                    |                                  |         |    |    |    | APKWS DT                      |    |    |    |             |    |    |    |         |    |    |    |         |    |    |    |
|                                                              |             |    |    |             |         |    |                                    |                                  |         |    |    |    |                               |    |    |    | APKWS<br>OT |    |    |    |         |    |    |    |         |    |    |    |

2014PB - 0604216N - 1707



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Navy

**DATE:** April 2013

## APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*  
BA 5: *System Development & Demonstration (SDD)*

## R-1 ITEM NOMENCLATURE

PE 0604216N: *Multi-Mssn Helicopter Upgrade Dev*

## PROJECT

1707: *MH-60R Development*

## 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: Automatic Radar Periscope Detection and Discrimination (ARPDD) IOC  | 4       | 2013 | 4       | 2013 |
| Systems Development: HW/SW ARPDD: ARPDD Integration Test (IT)                                           | 1       | 2012 | 2       | 2012 |
| Systems Development: HW/SW Ship Air Upgrade ((SAU)-07-000): SAU-07-000 Test                             | 1       | 2012 | 1       | 2012 |
| Systems Development: Gearbox Corrosion Improvement: Gearbox Corrosion Improvement                       | 3       | 2013 | 2       | 2014 |
| Systems Development: HW/SW Advanced Precision Kill Weapon System (APKWS): APKWS integration development | 3       | 2014 | 4       | 2016 |
| Systems Development: ARPDD: ARPDD OT                                                                    | 4       | 2012 | 1       | 2013 |
| Production Milestones: ARPDD System Development & Demonstration (SDD) Contract: ARPDD SDD contract      | 1       | 2012 | 1       | 2013 |
| Production Milestones: Deliveries: ARPDD Production Incorporation                                       | 2       | 2013 | 2       | 2013 |
| Test and Evaluation: Test & Evaluation: APKWS DT                                                        | 3       | 2014 | 2       | 2016 |
| Test and Evaluation: Test & Evaluation: APKWS OT                                                        | 2       | 2016 | 4       | 2016 |