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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy **Date:** February 2016

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| Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i> | R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mssn Helicopter Upgrade Dev</i> |
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| COST (\$ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|--------------------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element | 1,544.956 | 11.159 | 18.858 | 5.275 | - | 5.275 | 4.089 | 2.516 | 2.510 | 2.567 | Continuing | Continuing |
| 1707: <i>MH-60 Development</i> | 1,544.956 | 11.159 | 18.858 | 5.275 | - | 5.275 | 4.089 | 2.516 | 2.510 | 2.567 | Continuing | Continuing |

Program MDAP/MAIS Code: 191

Note

Commencing in FY 2017, this Program Element 0604216N, Project Unit 1707, changes from MH-60R Development to MH-60 Development to encompass both MH-60R and MH-60S activities.

A. Mission Description and Budget Item Justification

This Program Element includes funding for the development and support of future systems and improvements to current systems of the MH-60R/S. The MH-60R/S 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 which includes the fast attack craft/ fast in-shore attack craft (FAC/FIAC) threat response capabilities. Secondary MH-60R mission areas include search and rescue, vertical replenishment, naval surface fire support, logistics support, personnel transport and medical evacuation. The MH-60S Multi-Mission helicopter conducts search and rescue, vertical replenishment, and airhead operations. Armed Helo and Airborne Mine Countermeasures (AMCM) were added as primary mission areas for the MH-60S as block upgrades to the platform. AMCM provides the Littoral Combat Ship (LCS) the airborne portion of the Mine Countermeasures Mission Package (MCM MP). Armed Helo provides Special Warfare Support, Combat Search and Rescue, Surface Warfare and Maritime Interdiction Operations capability to address FAC/FIAC threat. MH-60S secondary roles include torpedo and drone recovery, noncombatant evacuation operations, and SEAL team and Explosive Ordnance Disposal support.

The MH-60R Helicopter Infrared Suppression System (HIRSS) project was cancelled in FY 2015 after an engineering analysis determined that the temperature of the engine exhaust may cause heat damage to the avionics systems in the vicinity of the HIRSS. FY 2016 - FY 2017 funding previously budgeted for HIRSS will now be used to analyze and evaluate active/passive aircraft survivability equipment.

FY 2017 budget request funds Very High Frequency Omni Ranging/Instrument Landing System, active/passive aircraft survivability equipment, and SLAP assessment of MH-60R aircraft structure and subsystem conditions as well as MH-60S Fixed Forward Firing Weapons/rockets corrections of deficiencies.

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| Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i> | R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mssn Helicopter Upgrade Dev</i> |
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| B. Program Change Summary (\$ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 11.434 | 21.358 | 6.224 | - | 6.224 |
| Current President's Budget | 11.159 | 18.858 | 5.275 | - | 5.275 |
| Total Adjustments | -0.275 | -2.500 | -0.949 | - | -0.949 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | -2.500 | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -0.275 | 0.000 | | | |
| • Program Adjustments | 0.000 | 0.000 | -0.035 | - | -0.035 |
| • Rate/Misc Adjustments | 0.000 | 0.000 | -0.914 | - | -0.914 |

Change Summary Explanation

Decrease in Multi-Mssn Helicopter Upgrade Dev by \$0.221M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

Schedule: HIRSS project cancelled; therefore, HIRSS schedule items removed.

Technical: Commencing in FY 2017, this Program Element 0604216N, Project Unit 1707, changes from MH-60R Development to MH-60 Development to encompass both MH-60R and MH-60S activities.

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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy | | | | | | | | | | Date: February 2016 | | |
| Appropriation/Budget Activity 1319 / 5 | | | | | R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mssn Helicopter Upgrade Dev</i> | | | | Project (Number/Name) 1707 / <i>MH-60 Development</i> | | | |
| COST (\$ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
| 1707: <i>MH-60 Development</i> | 1,544.956 | 11.159 | 18.858 | 5.275 | - | 5.275 | 4.089 | 2.516 | 2.510 | 2.567 | Continuing | Continuing |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

A. Mission Description and Budget Item Justification

The primary mission areas of the MH-60R include anti-submarine warfare and surface warfare which includes the Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) threat response capabilities. Secondary mission areas include search and rescue, vertical replenishment, naval surface fire support, logistics support, personnel transport and medical evacuation. The MH-60R is executing upgrades to communication, navigation, identification friend or foe, multi-spectral targeting system/forward looking infrared radar, automatic radar periscope detection and discrimination, weapons, data link, safety, maintenance, airframe and mission planning systems. Advanced Precision Kill Weapon System (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 FAC/FIAC threat. Analyze the effectiveness of active/passive aircraft survivability equipment on the MH-60R by assessing the effectiveness of platform mission and susceptibility characteristics to include current/future Infrared Countermeasure systems, evaluating threat data (acquisition range and countermeasure effectiveness) and mission requirements, assessing mission effectiveness/ susceptibility trade-space for aircraft survivability equipment systems/improvements and recommend options for susceptibility/vulnerability reductions. The MH-60S Multi-Mission helicopter conducts search and rescue, vertical replenishment, and airhead operations. Armed Helo and Airborne Mine Countermeasures (AMCM) were added as primary mission areas for the MH-60S as block upgrades to the platform. AMCM provides the Littoral Combat Ship (LCS) the airborne portion of the Mine Countermeasures Mission Package (MCM MP). Armed Helo provides Special Warfare Support, Combat Search and Rescue, Surface Warfare and Maritime Interdiction Operations capability to address FAC/FIAC threat. MH-60S secondary roles include torpedo and drone recovery, noncombatant evacuation operations, and SEAL team and Explosive Ordnance Disposal support. Infrared suppression systems reduce susceptibility to infrared missile threats and have been incorporated onto other H-60 type/model/series, including MH-60S and HH-60H. MH-60R aircraft currently have no system for engine exhaust suppression. Very High Frequency Omni Ranging/Instrument Landing System(VOR/ILS) provides precision approach capability ashore and to supplement currently available Precision Approach Radar (PAR) controlled approaches. MH-60R is the lead platform for integration of the Multifunctional Information Distribution System (MIDS)-Low Volume Terminal (LVT) Block Upgrade 2 (BU2). The MH-60R Service Life Assessment Program (SLAP) is assessing the primary aircraft structure and subsystem condition of the MH-60R fleet in order to determine what modifications are necessary to extend the aircraft design life limits to allow it to meet Chief of Naval Operations operational inventory requirements through FY 2035. Without SLAP, aircraft are retired from the USN inventory when design service life limits are reached directly impacting fleet Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW), Surveillance, Communications Relay, Naval Gunfire Support, Search and Rescue and logistics support.

FY 2017 budget request funds VOR/ILS, active/passive aircraft survivability equipment, and SLAP assessment of MH-60R aircraft structure and subsystem conditions as well as MH-60S Fixed Forward Firing Weapons/rockets corrections of deficiencies. Efforts include product development, government engineering, integrated logistics support, modeling and simulation and developmental and operational testing.

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

| | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| Title: Avionics H/W and S/W Development | 6.949 | 8.068 | 1.453 | 0.000 | 1.453 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy | | Date: February 2016 |
| Appropriation/Budget Activity 1319 / 5 | R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mssn Helicopter Upgrade Dev</i> | Project (Number/Name) 1707 / <i>MH-60 Development</i> |

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

| | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| Articles: | - | - | - | - | - |
| <p>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: Pre-planned Product Improvements (P3I) and automatic radar periscope detection and discrimination. Advanced Precision Kill Weapon System (APKWS) and active/passive self defense efforts address the Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) threat. Conduct FAC/FIAC demonstration utilizing anti-swarm weapon. VOR/ILS provides precision approach cabability.</p> <p>FY 2015 Accomplishments: Continued Advanced Precision Kill Weapon System (APKWS) development to address Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) threat.</p> <p>FY 2016 Plans: Continue support of APKWS with the development of software for Multi Target Spectrum (MTS) to improve FAC/FIAC solutions. Develop software for MH-60R, the lead platform for Multifunctional Information Distribution System (MIDS) Block Upgrade 2 (BU2), in support of Battle Group Tactical Data Link Network Centric Warfare. Commence active/passive aircraft survivability (in place of HIRSS due to incompatibility of HIRSS with MH-60R) and Very High Frequency Omni Ranging (VOR) /Instrument Landing System (ILS) activities.</p> <p>FY 2017 Base Plans: Continue VOR/ILS activities and active/passive aircraft survivability equipment analysis. Commence Service Life Assessment Program of MH-60R aircraft structure and subsystem conditions. Efforts include product development, government engineering, integrated logistics support, modeling and simulation and developmental and operational testing.</p> <p>FY 2017 OCO Plans: N/A</p> | | | | | |
| Title: Engineering and Logistics | 2.707 | 4.296 | 2.352 | 0.000 | 2.352 |
| Articles: | - | - | - | - | - |
| <p>FY 2015 Accomplishments:</p> | | | | | |

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| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| <p>Continued to provide engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support APKWS. Commenced HIRSS engineering efforts and determined it is an unfeasible solution for the MH-60R.</p> <p>FY 2016 Plans: Continue to provide engineering specialists, integrated logistics support, government furnished equipment, support equipment, program management, contract support services, and travel to support APKWS and active/passive aircraft survivability, and commence VOR/ILS engineering efforts and multifunctional information distribution system - low volume terminal block upgrade 2 modeling and simulation efforts.</p> <p>FY 2017 Base Plans: Continue to provide MH-60R engineering specialists, integrated logistics support, government furnished equipment, support equipment, program management, contract support services, and travel to support active/passive aircraft survivability, and Very High Frequency Omni Ranging/Instrument Landing System (VOR/ILS) engineering efforts. Analyze Forward Firing Weapons (FFW)/Rockets and Advanced Precision Kill Weapon System mixed loads integration for Digital Rocket Launcher on MH-60S. Commence Service Life Assessment Program of MH-60R aircraft structure and subsystem conditions.</p> <p>FY 2017 OCO Plans: N/A</p> | | | | | |
| <p>Title: Test and Evaluation</p> <p align="right">Articles:</p> <p>FY 2015 Accomplishments: Continued Advanced Precision Kill Weapon System (APKWS) test and evaluation efforts.</p> <p>FY 2016 Plans: Continue APKWS test and evaluation efforts. Commence Very High Frequency Omni Ranging (VOR) / Instrument Landing System (ILS) test and evaluation efforts and commence multifunctional Information distribution system-low volume terminal block upgrade 2 modeling and simulation activities.</p> <p>FY 2017 Base Plans: Continue MH-60R VOR/ILS test and evaluation efforts. Evaluate operational test results of MH-60S Forward Firing Weapons/Rockets and Advanced Precision Kill Weapon System mixed loads integration with Digital</p> | 1.503 - | 6.494 - | 1.470 - | 0.000 - | 1.470 - |

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

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| Rocket Launcher in counter Fast Attack Craft/Fast Inshore Attack Craft scenario and develop corrective action plans to address identified deficiencies in support of follow-on test. | | | | | |
| FY 2017 OCO Plans: N/A | | | | | |
| Accomplishments/Planned Programs Subtotals | 11.159 | 18.858 | 5.275 | 0.000 | 5.275 |

| C. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
|--|----------------|----------------|---------------------|--------------------|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
| • APN-1 BLI:018200: <i>MH-60R</i> | 983.308 | 942.300 | 61.177 | - | 61.177 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 11,227.541 |
| • APN-6 BLI:060510: <i>MH-60R spares</i> | 0.150 | 0.069 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 299.500 |
| • APN-5 BLI:053000: <i>SH60 Series</i> | 58.406 | 43.701 | 58.741 | - | 58.741 | 66.302 | 77.609 | 53.284 | 34.547 | 188.650 | 798.976 |

Remarks
APN-5 BLI:053000 reflects funding from OSIP 001-06 and prior year funding from OSIPs 005-12 and 001-06 only.

D. Acquisition Strategy
APKWS and VOR/ILS will be developed using cost plus incentive fee type contracts.

E. Performance Metrics
Successfully support developmental and operation test activities to qualify aircraft modifications/upgrades.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy **Date:** February 2016

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

| Product Development (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Primary Hdw/SW Dev, Advanced Precision Kill Weapon System (APKWS) | SS/CPIF | Lockheed Martin : Owego, NY | 3.030 | 1.748 | Jun 2015 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 4.778 | 4.778 |
| Primary Hdw Dev. APKWS | SS/CPIF | Sikorsky : Stratford, CT | 0.225 | 3.540 | Jun 2015 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 3.765 | 3.765 |
| Primary SW Dev. Fast Attack Craft/Fast In-Shore Attack Craft (FAC/FIAC) demo | SS/BOA | Lockheed Martin : Owego, NY | 3.058 | 1.661 | Jul 2015 | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 4.719 | 4.719 |
| Primary SW Dev. Fast Attack Craft/Fast In-Shore Attack Craft (FAC/FIAC) | SS/BOA | Raytheon : McKinney, TX | 0.000 | 0.000 | | 2.000 | Apr 2016 | 0.000 | | - | | 0.000 | 0.000 | 2.000 | 2.000 |
| Primary Hdw/SW Dev, Instrument Landing System | SS/CPFF | Lockheed Martin : Owego, NY | 0.000 | 0.000 | | 2.068 | Jun 2016 | 0.943 | Jun 2017 | - | | 0.943 | 0.000 | 3.011 | 3.176 |
| Primary Hdw/SW Dev, Instrument Landing System | SS/CPIF | Sikorsky : Stratford, CT | 0.000 | 0.000 | | 2.000 | Aug 2016 | 0.000 | | - | | 0.000 | 0.000 | 2.000 | 2.000 |
| Primary HDW/SW Dev Fatigue Life Assessment | SS/CPIF | Sikorsky : Stratford, CT | 0.000 | 0.000 | | 0.000 | | 0.510 | Apr 2017 | - | | 0.510 | 0.000 | 0.510 | 0.600 |
| Primary Hdw Dev, Multifunctional Information Distribution System (MIDS) - Low Volume Terminal (LVT) Block Upgrade (BU2) | SS/CPFF | Lockheed Martin : Owego, NY | 0.000 | 0.000 | | 2.000 | Apr 2016 | 0.000 | | - | | 0.000 | 0.000 | 2.000 | 2.000 |
| Prior year Product Dev Cost no longer funded in the FYDP | Various | Various : Various | 1,156.967 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 1,156.967 | - |
| Subtotal | | | 1,163.280 | 6.949 | | 8.068 | | 1.453 | | - | | 1.453 | 0.000 | 1,179.750 | - |

Remarks
 FY16 continues support of APKWS with the development of software for Multi Target Spectrum (MTS) to improve FAC/FIAC solutions. Develop software for MH-60R, the lead platform for MIDS BU2, in support of Battle Group Tactical Data Link Network Centric Warfare.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy **Date:** February 2016

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| Appropriation/Budget Activity 1319 / 5 | R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mssn Helicopter Upgrade Dev</i> | Project (Number/Name) 1707 / <i>MH-60 Development</i> |
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| Support (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Government Engineering Support, Projects commencing prior to FY16 | WR | NAWC AD : Patuxent River, MD | 11.567 | 2.645 | Nov 2014 | 0.000 | | 0.000 | | - | | 0.000 | Continuing | Continuing | Continuing |
| Government eng spt, Very High Frequency Omni Ranging/Instrument Landing Syssem (VOR ILS) | Various | Various : Various | 0.000 | 0.000 | | 2.455 | Nov 2015 | 0.861 | Nov 2016 | - | | 0.861 | Continuing | Continuing | Continuing |
| Government eng spt, Active/Passive Aircraft Survivability | WR | Various : Various | 0.000 | 0.000 | | 1.782 | Nov 2015 | 0.682 | Nov 2016 | - | | 0.682 | 0.000 | 2.464 | - |
| Government eng spt, Fatigue Life Assessment | C/BA | TBD : TBD | 0.000 | 0.000 | | 0.000 | | 0.505 | Nov 2016 | - | | 0.505 | 0.000 | 0.505 | - |
| Prior year support cost no longer funded in the FYDP | Various | Various : Various | 148.159 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 148.159 | - |
| MH-60S Forward Firing Weapons/Rockets Government Engineering Support | Various | Various : Various | 0.000 | 0.000 | | 0.000 | | 0.250 | Dec 2016 | - | | 0.250 | 0.000 | 0.250 | - |
| Subtotal | | | 159.726 | 2.645 | | 4.237 | | 2.298 | | - | | 2.298 | - | - | - |

Remarks

- Commencing in FY 2016 support costs will be broken out by individual project. FY 2016 increase in government engineering support is required to commence efforts for the ILS and Multifunctional Information Distribution System (MIDS) Block Upgrade 2 (BU2).
- FY 2015 costs for government engineering support for projects commencing prior to FY 2016 include automatic radar periscope detection and discrimination and advanced precision kill weapon system.

| Test and Evaluation (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Developmental Test & Evaluation (DT&E), Projects commencing prior to FY16 | WR | NAWC AD : Patuxent River, MD | 155.859 | 1.028 | Nov 2014 | 1.067 | Nov 2015 | 0.000 | | - | | 0.000 | 0.000 | 157.954 | - |

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|--|--|---|

| Test and Evaluation (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Operation Test & Evaluation (OT&E), Projects commencing prior to FY16 | WR | COMOPTEVFOR : Norfolk, VA | 15.267 | 0.475 | Nov 2014 | 1.070 | Nov 2015 | 0.000 | | - | | 0.000 | 0.000 | 16.812 | - |
| DT&E, VOR ILS | WR | NAWC AD : Patuxent River, MD | 0.000 | 0.000 | | 3.074 | Nov 2015 | 0.858 | Nov 2016 | - | | 0.858 | 0.840 | 4.772 | - |
| OT&E, VOR ILS | WR | COMOPTEVFOR : Norfolk, VA | 0.000 | 0.000 | | 1.283 | Nov 2015 | 0.612 | Nov 2016 | - | | 0.612 | 0.283 | 2.178 | - |
| 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 | - |
| Subtotal | | | 182.814 | 1.503 | | 6.494 | | 1.470 | | - | | 1.470 | 1.123 | 193.404 | - |

Remarks
 1. Commencing in FY 2016 test and evaluation costs will be broken out by individual project. FY 2016 increase in test and evaluation supports commencement of Advanced Precision Kill Weapon System (APKWS) operational test (OT) activities, Instrument Landing System developmental test (DT) and OT activities, and Multifunctional Information Distribution System-Low Volume Terminal Block Upgrade 2 modeling and simulation efforts.
 2. FY 2015 costs for DT and OT projects commencing prior to FY 2016 include automatic radar periscope detection and discrimination and APKWS.

| Management Services (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Travel | WR | NAWC AD : Patuxent River, MD | 4.880 | 0.062 | Nov 2014 | 0.059 | Nov 2015 | 0.054 | Nov 2016 | - | | 0.054 | 0.174 | 5.229 | - |
| Prior year Mgmt Serv cost no longer funded in the FYDP | Various | Various : Various | 34.256 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 34.256 | - |
| Subtotal | | | 39.136 | 0.062 | | 0.059 | | 0.054 | | - | | 0.054 | 0.174 | 39.485 | - |

| | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|-------------|-----------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
| Project Cost Totals | | 1,544.956 | 11.159 | 18.858 | 5.275 | - | 5.275 | - | - |

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy **Date:** February 2016

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|--|--|---|

| | FY 2015 | | | | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | | | | | | | | | |
|--|-------------------------------|----|----|----|---------|----|----|----|--|----|----|----|---|----|----|----|---|----|----|----|---------|----|----|----|---------|----|----|----|--|--|--|--|--|--|--|--|
| | 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 | | | | | | | | |
| PE 0604216N: Multi-Mission Helicopter Upgrade Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acquisition Milestones | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Milestones | APKWS EOC ▲ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Systems Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| APKWS | APKWS integration development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HIRSS Development | HIRSS Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Service Life Assessment Program (SLAP) | | | | | | | | | Fatigue Life Assessment | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multifunction Information Distribution System (MIDS)-Low Volume Terminal (LVT) | | | | | | | | | MIDS-LVT development | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Very High Frequency Omni Ranging/Instrument Landing System (ILS) | | | | | | | | | VOR ILS Development | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Active/Passive Aircraft Survivability | | | | | | | | | Platform Mission/Susceptibility Analysis | | | | Platform Mission with Optimal and Alternative Susceptibility Analysis | | | | Platform Survivability by Considering Platform Vulnerability Analysis | | | | | | | | | | | | | | | | | | | |
| Forward Firing Weapons/Rockets Deficiencies Test and Evaluation | APKWS DT | | | | | | | | APKWS OT | | | | VOR ILS DT | | | | VOR ILS OT | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | Correction of Deficiencies | | | | | | | | | | | | | | | | | | | | | | | |
| Production Milestones | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contract Awards | | | | | | | | | | | | | VOR ILS ● | | | | | | | | | | | | | | | | | | | | | | | |

2017PB - 0604216N - 1707

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| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy | | Date: February 2016 |
| Appropriation/Budget Activity 1319 / 5 | R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mssn Helicopter Upgrade Dev</i> | Project (Number/Name) 1707 / <i>MH-60 Development</i> |

Schedule Details

| Events by Sub Project | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| PE 0604216N: Multi-Mission Helicopter Upgrade Development | | | | |
| Acquisition Milestones: Milestones: Advanced Precision Kill Weapon System (APKWS) EOC | 2 | 2015 | 2 | 2015 |
| Systems Development: APKWS: APKWS integration development | 1 | 2015 | 4 | 2016 |
| Systems Development: HIRSS Development: HIRSS Development | 2 | 2015 | 3 | 2015 |
| Systems Development: Service Life Assessment Program (SLAP): Fatigue Life Assessment | 3 | 2017 | 4 | 2021 |
| Systems Development: Multifunction Information Distribution System (MIDS)-Low Volume Terminal (LVT): Block Upgrade 2 Integration | 2 | 2016 | 3 | 2017 |
| Systems Development: Very High Frequency Omni Ranging/Instrument Landing System (ILS): ILS integration | 2 | 2016 | 3 | 2017 |
| Systems Development: Active/Passive Aircraft Survivability: Phase I - Platform Mission and Susceptibility Analysis | 2 | 2016 | 3 | 2016 |
| Systems Development: Active/Passive Aircraft Survivability: Phase II - Platform Mission with Optimal and Alternative Susceptibility Analysis | 4 | 2016 | 2 | 2017 |
| Systems Development: Active/Passive Aircraft Survivability: Phase III - Platform Survivability by Considering Platform Vulnerability Analysis | 3 | 2017 | 1 | 2018 |
| Systems Development: Forward Firing Weapons/Rockets Deficiencies: Correction of Deficiencies | 2 | 2017 | 3 | 2018 |
| Systems Development: Test and Evaluation: APKWS DT | 1 | 2015 | 2 | 2016 |
| Systems Development: Test and Evaluation: APKWS OT | 2 | 2016 | 4 | 2016 |
| Systems Development: Test and Evaluation: VOR ILS DT | 4 | 2016 | 3 | 2017 |
| Systems Development: Test and Evaluation: VOR ILS OT | 4 | 2016 | 3 | 2017 |
| Production Milestones: Contract Awards: ILS Kit | 3 | 2017 | 3 | 2017 |