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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 7: Operational Systems Development   |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |               |         |         |         |         |                  |            |
| 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  | 722.919         | 11.748  | 11.477               | 13.586       | -  | 13.586        | 8.108   | 7.390   | 6.525   | 6.610   | Continuing       | Continuing |
| 1780: HARM Improvement   | 43.683          | 1.375   | 1.382                | 1.339        | -  | 1.339         | 1.359   | 1.419   | 1.468   | 1.485   | Continuing       | Continuing |
| 2185: AARGM  | 650.369         | 6.504   | 6.995                | 12.247       | -  | 12.247        | 6.749   | 5.971   | 5.057   | 5.125   | Continuing       | Continuing |
| 3056: Advanced Precision Kill Weapons System   | 0.000           | 2.969   | 0.000                | 0.000        | -  | 0.000         | 0.000   | 0.000   | 0.000   | 0.000   | 0.000            | 2.969      |
| 3212: MEDUSA JCTD  | 28.867          | 0.900   | 3.100                | 0.000        | -  | 0.000         | 0.000   | 0.000   | 0.000   | 0.000   | 0.000            | 32.867     |
| MDAP/MAIS Code(s): 368   |                 |         |                      |              |  |               |         |         |         |         |                  |            |
| # 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   |                 |         |                      |              |  |               |         |         |         |         |                  |            |
| A new Program Element (PE), 0605555N, has been established for the Direct and Time Sensitive Strike Program Office to support research, development, test and evaluation of Strike Weapons to be employed from a multitude of fixed and rotary wing aircraft in support of offensive and defensive land and sea based targets across multiple mission areas. The following projects have been realigned/transferred to this new PE beginning in FY 2014: 3212 - MEDUSA JCTD and 3412 - Hellfire-R Integration.   |                 |         |                      |              |  |               |         |         |         |         |                  |            |
| A. Mission Description and Budget Item Justification   |                 |         |                      |              |  |               |         |         |         |         |                  |            |
| Research, Development, Test and Evaluation funding for the Joint Service Pre-Planned Product Improvement program which will include near and far term performance improvements, cost reduction, and studies that establish future development requirements. Specific initial efforts include lower cost seeker component development and seeker aided fuzing to enhance warhead performance in low angle impacts and against certain ship targets. This excludes civilian and military manpower and their related costs and military construction costs which will be included in appropriate management and support elements. |                 |         |                      |              |  |               |         |         |         |         |                  |            |
| These projects are funded under Operational Systems Development because they include development efforts to upgrade systems that have been fielded or have received approval for full rate production and ancitipate funding in the current or subsequent fiscal year.   |                 |         |                      |              |  |               |         |         |         |         |                  |            |

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy |         |                               |              | DATE: April 2013 |               |
| APPROPRIATION/BUDGET ACTIVITY                              |         | R-1 ITEM NOMENCLATURE         |              |                  |               |
| 1319: Research, Development, Test & Evaluation, Navy       |         | PE 0205601N: Harm Improvement |              |                  |               |
| BA 7: Operational Systems Development                      |         |                               |              |                  |               |
| B. Program Change Summary (\$ in Millions)                 | FY 2012 | FY 2013                       | FY 2014 Base | FY 2014 OCO      | FY 2014 Total |
| Previous President's Budget                                | 11.147  | 11.477                        | 16.551       | -                | 16.551        |
| Current President's Budget                                 | 11.748  | 11.477                        | 13.586       | -                | 13.586        |
| Total Adjustments  | 0.601   | 0.000                         | -2.965       | -                | -2.965        |
| • Congressional General Reductions                         | -       | -                             |              |                  |               |
| • Congressional Directed Reductions                        | -       | -                             |              |                  |               |
| • Congressional Rescissions                                | -       | -                             |              |                  |               |
| • Congressional Adds                                       | -       | -                             |              |                  |               |
| • Congressional Directed Transfers                         | -       | -                             |              |                  |               |
| • Reprogrammings   | 0.820   | 0.000                         |              |                  |               |
| • SBIR/STTR Transfer                                       | -0.219  | 0.000                         |              |                  |               |
| • Rate/Misc Adjustments                                    | 0.000   | 0.000                         | -2.965       | -                | -2.965        |

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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 7: Operational Systems Development   |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |               |         |         | PROJECT<br>1780: HARM Improvement |                  |                  |            |
| 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 |
| 1780: HARM Improvement   | 43.683          | 1.375   | 1.382                | 1.339        | -  | 1.339         | 1.359   | 1.419   | 1.468                             | 1.485            | Continuing       | Continuing |
| 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   |                 |         |                      |              |  |               |         |         |                                   |                  |                  |            |
| A. Mission Description and Budget Item Justification   |                 |         |                      |              |  |               |         |         |                                   |                  |                  |            |
| High-speed Anti Radiation Missile (HARM) Improvement is a Navy led joint service program with the Air Force. The program commenced production in FY 1983. Program element 0205601N was used until FY 1990 to develop and test one hardware and two software upgrades to the HARM (AGM-88B, Block 3 & AGM-88C, Block 4) as Engineering Change Proposals (ECPs). Another ECP software program (Block 3A & 5) was developed (FY 1996 through FY 1999) to modify HARM software in order to meet operational requirements. HARM Block 3A/5 software was distributed to the Fleet in FY 2000. The Block 5 tactical software upgrade gives HARM improved geographic specificity and improved capability against advanced waveforms. HARM Block 5A is currently being deployed in the Fleet. |                 |         |                      |              |  |               |         |         |                                   |                  |                  |            |
| HARM Improvement includes efforts to conduct Foreign Military Assessment (FMA) analysis and engineering to exploit vulnerabilities of foreign weapon system threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.   |                 |         |                      |              |  |               |         |         |                                   |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)   |                 |         |                      |              |  |               |         |         |                                   | FY 2012          | FY 2013          | FY 2014    |
| Title: HARM Foreign Military Assessment (FMA)  |                 |         |                      |              |  |               |         |         |                                   | 1.375            | 1.382            | 1.339      |
|  |                 |         |                      |              |  |               |         |         |                                   | 0                | 0                | 0          |
| FY 2012 Accomplishments:<br>Continued to conduct FMA analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.  |                 |         |                      |              |  |               |         |         |                                   |                  |                  |            |
| FY 2013 Plans:<br>Continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.   |                 |         |                      |              |  |               |         |         |                                   |                  |                  |            |
| FY 2014 Plans:<br>The FMA team will continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign weapon system threats. Focus will be on new threat systems as they become available as well as theater/country-specific systems of interest, with priorities coordinated through the ARM Steering Committee (ASC). Expect continued testing on advanced Surface-to-Air weapons and related integrated air defense systems (IADS), jammers and ARM countermeasures, and non-traditional ARM targets. One specific area of attention will be expanding collection, analysis, and definition of radar parametrics related to HARM 5A   |                 |         |                      |              |  |               |         |         |                                   |                  |                  |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Navy  |  | <b>DATE:</b> April 2013  |   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i>   |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> | <b>PROJECT</b><br>1780: <i>HARM Improvement</i> |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>   |  | <b>FY 2012</b>   | <b>FY 2013</b>                                  |
| improvements, with feedback from full Fleet fielding in 2013. Team will continue to support Fleet engagement as a key element of engineering and analytical efforts. Includes funding for threat assessment, operational updates and integration efforts. |  |  |   |
| <b>Accomplishments/Planned Programs Subtotals</b>   |  | 1.375  | 1.382   |
| <b>FY 2014</b>  |  |  |   |
| 1.339   |  |  |   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b><br>N/A   |  |  |   |
| <b>Remarks</b>  |  |  |   |
| <b>D. Acquisition Strategy</b><br>HARM software updates are provided through the Software Support Activity (SSA) at Naval Air Warfare Center - Weapons Division (NAWC-WD), China Lake, CA.  |  |  |   |
| <b>E. Performance Metrics</b><br>Successfully complete Developmental Test/Operational Test.   |  |  |   |

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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 7: Operational Systems Development |                        |                                |                 |         |            | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |            |              |            | PROJECT<br>1780: HARM Improvement |            |                  |                  |            |                          |
| 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 |
| Systems Engineering  | WR                     | NAWC-WD:China Lake, CA         | 0.215           | 1.183   | Nov 2011   | 1.187  | Nov 2012   | 1.334        | Nov 2013   | -                                 |            | 1.334            | Continuing       | Continuing | Continuing               |
| Prior Year Prod Dev costs no longer funded in FYDP   | Various                | Various:Various                | 24.732          | 0.000   |            | 0.000  |            | 0.000        |            | -                                 |            | 0.000            | 0.000            | 24.732     |                          |
| Subtotal   |                        |                                | 24.947          | 1.183   |            | 1.187  |            | 1.334        |            | 0.000                             |            | 1.334            |                  |            |                          |
| Test and Evaluation (\$ 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 |
| Operational Test & Eval  | WR                     | NAWC-WD:China Lake, CA         | 18.335          | 0.192   | Nov 2011   | 0.189  | Nov 2012   | 0.000        |            | -                                 |            | 0.000            | Continuing       | Continuing | Continuing               |
| Subtotal   |                        |                                | 18.335          | 0.192   |            | 0.189  |            | 0.000        |            | 0.000                             |            | 0.000            |                  |            |                          |
| Management Services (\$ 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 |
| Travel   | WR                     | Various:Various                | 0.401           | 0.000   | Nov 2011   | 0.006  | Nov 2012   | 0.005        | Jan 2014   | -                                 |            | 0.005            | Continuing       | Continuing | Continuing               |
| Subtotal   |                        |                                | 0.401           | 0.000   |            | 0.006  |            | 0.005        |            | 0.000                             |            | 0.005            |                  |            |                          |
| Remarks<br>Contract Type for Travel is TO  |                        |                                |                 |         |            |  |            |              |            |                                   |            |                  |                  |            |                          |
|  |                        |                                | All Prior Years | FY 2012 |            | FY 2013  |            | FY 2014 Base |            | FY 2014 OCO                       |            | FY 2014 Total    | Cost To Complete | Total Cost | Target Value of Contract |
| Project Cost Totals  |                        |                                | 43.683          | 1.375   |            | 1.382  |            | 1.339        |            | 0.000                             |            | 1.339            |                  |            |                          |
| Remarks  |                        |                                |                 |         |            |  |            |              |            |                                   |            |                  |                  |            |                          |

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PE 0205601N: *Harm Improvement*  
Navy

R-1 Line #181

### R-1 ITEM NOMENCLATURE

PE 0205601N: *Harm Improvement*1780: *HARM Improvement*[illegible]

2014PB - 0205601N - 1780

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Navy   |  | <b>DATE:</b> April 2013                         |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> | <b>PROJECT</b><br>1780: <i>HARM Improvement</i> |

Schedule Details

| Events by Sub Project  | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| <b><i>HARM IMPROVEMENT</i></b>   |         |      |         |      |
| Acquisition Milestones: Radar System Evaluation: Radar System Evaluation - Foreign Military Assessment | 1       | 2012 | 4       | 2018 |
| Test & Evaluation: Lazer Guided Zuni (LGZ)   | 2       | 2012 | 2       | 2013 |

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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 7: Operational Systems Development |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |               |         |         | PROJECT<br>2185: AARGM |                  |                  |            |
| 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 |
| 2185: AARGM  | 650.369         | 6.504   | 6.995                | 12.247       | -  | 12.247        | 6.749   | 5.971   | 5.057                  | 5.125            | Continuing       | Continuing |
| Quantity of RDT&E Articles   | 0               | 0       | 0                    | 0            |  | 0             | 0       | 0       | 0                      | 0                |                  |            |

<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

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

Advanced Anti-Radiation Guided Missile (AARGM) transitioned a Phase III Small Business Innovative Research program to develop and demonstrate a multi-mode guidance section on a HARM airframe to System Development and Demonstration (SD&D) in FY 2003. The AARGM SD&D program was designed to integrate multi-mode guidance (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning System (GPS)/Inertial Navigation System) on the HARM AGM-88 missile. AARGM weapon system capabilities include: active MMW terminal guidance, counter shutdown, expanded threat coverage, enhanced ARH, netted targeting real-time feed via Integrated Broadcast System (IBS) prior to missile launch, Weapon Impact Assessment (WIA) transmitted prior to detonation, GPS/point-to-point weapon navigation, and weapon employment with impact avoidance zone/missile impact zones.

In June 2003, a successful Milestone B transitioned AARGM to a SD&D Acquisition Category 1C program. ATK Missile Systems Company was awarded the AARGM SD&D contract valued at \$222.6M. In May 2004, the contract baseline was increased to \$231.9M to accelerate incorporation of an embedded IBS-Receiver, enabling the warfighter to directly receive National intelligence data, increasing overall pilot situational awareness. Recent modifications have changed the current baseline to \$232.3M.

The AARGM program includes 40 SD&D test articles with the follow on of 1,879 production modification kits (1,871 All-Up-Rounds (AURs)/Captive Air Training Missiles (CATMs) and 8 spares). Milestone C was achieved 4Q FY 2008, followed by a combined FY08/FY09 Low Rate Initial Production (LRIP) contract award in 1Q FY 2009. Developmental testing was completed in 2009. Initial Operational Test and Evaluation (IOT&E) was completed in 3Q FY 2012. LRIP III contract was awarded 1Q FY 2012, and deliveries began 1Q FY 2013. Full Rate Production (FRP) decision was received 20 Aug 2012 with FRP contract award on 10 Sep 2012, and deliveries beginning in Dec 2014.

The AARGM Block 1 Upgrade program began in FY 2012 and consists of improvements and enhancements through software changes, which will enable the AGM-88E AUR, as well as the Common Munitions Built-in Test (BIT) Reprogramming Equipment (CMBRE) box 4 and 5 to correct IOT&E deficiencies and complete CPD requirements. Block 1 will improve counter measure identification, and will complete development of Target of Opportunity, MMW, IBS-R capabilities, Navigation, and WIA messages.

Follow on Test and Evaluation (FOT&E/OT-D) in conjunction with Block 1 Upgrade will complete tactics development and support promulgation of Operational Tactics Guide (OTG). FOT&E will test Block 1 upgrade changes; complete development and integration testing of Phase III equipment (integral IBS-R and IBS-R antenna);

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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 7: Operational Systems Development   | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement | PROJECT<br>2185: AARGM |            |            |
| complete development and integration testing of any future capability requirements, and continue tactics development. Additionally, FOT&E may include AGM-88E extension to objective aircraft.<br><br>In FY 2012-FY 2018, the AGM-88E AARGM program plans to develop and demonstrate the capability to engage and destroy non-traditional and Overseas Contingency Operations targets through the Destruction of Enemy Air Defenses (DEAD) missions. These developments continue Future Naval Capability Science and Technology investments by the Office of Naval Research initiated in FY 2006.  |  |                        |            |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)   |  | FY 2012                | FY 2013    | FY 2014    |
| <b>Title:</b> Threat Data Library<br><br><b>Articles:</b><br><br><b>FY 2012 Accomplishments:</b><br>Continued to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continued test and assessment of threat systems. Continued to update AARGM Threat Data Library.<br><br><b>FY 2014 Plans:</b><br>As part of the AGM-88E Block 1 Upgrade, continue effort to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continue test and assessment of threat systems. Develop threat data for new target sets.   |  | 2.797<br>0             | 0.000      | 1.383<br>0 |
| <b>Title:</b> AARGM Derivative Program (ADP)<br><br><b>Articles:</b><br><br><b>FY 2012 Accomplishments:</b><br>Continued to develop the capability to carry-out Destruction of Enemy Defenses (DEAD) missions and to attack non-traditional and Overseas Contingency Operations (OCO) targets. Also developed new propulsion systems and data links to support warfighter needs against advancing threat systems as part of Block 1 Upgrade. Continued updates to targets.<br><br><b>FY 2013 Plans:</b><br>Continue to develop the capability to carry-out DEAD missions and to attack non-traditional and OCO targets. As part of Block 1 Upgrade, continue to develop new propulsion systems and data links to support warfighter needs against advancing threat systems. Continue updates to targets.<br><br><b>FY 2014 Plans:</b><br>As part of the Block 1 Upgrade to AGM-88E, continue to develop the capability to carry-out DEAD missions and to attack non-traditional and OCO targets. Also develop new propulsion systems and data links to support warfighter needs against advancing threat systems. Develop additional target sets capability. |  | 3.707<br>0             | 3.091<br>0 | 1.000<br>0 |
| <b>Title:</b> Follow-on Test and Evaluation (FOT&E)<br><br><b>Articles:</b>  |  | 0.000                  | 0.200<br>0 | 9.864<br>0 |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Navy   |                |                |                         |                        |  |                |                | <b>DATE:</b> April 2013              |                |                             |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i>  |                |                |                         |                        | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> |                |                | <b>PROJECT</b><br>2185: <i>AARGM</i> |                |                             |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>  |                |                |                         |                        |  |                |                | <b>FY 2012</b>                       | <b>FY 2013</b> | <b>FY 2014</b>              |                   |
| <b>FY 2013 Plans:</b><br>Begin FOT&E for AARGM.  |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| <b>FY 2014 Plans:</b><br>Continue FOT&E for AARGM Block 1 utilizing COMOPTEVFOR requirements for suitable and effective for desired flights, targets and locations.  |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| <b>Title:</b> Capabilities Procurement Document (CPD) Requirements<br><br><div style="text-align: right;"><b>Articles:</b></div>   |                |                |                         |                        |  |                |                | 0.000                                | 3.704<br>0     | 0.000                       |                   |
| <b>FY 2013 Plans:</b><br>Block 1 Upgrade includes development of Key Performance Parameter (KPP-3) and Integrated Broadcast Service-Receiver requirements in accordance with the CPD.  |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>  |                |                |                         |                        |  |                |                | 6.504                                | 6.995          | 12.247                      |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>   |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| <b>Line Item</b>   | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014<br/>Base</b> | <b>FY 2014<br/>OCO</b> | <b>FY 2014<br/>Total</b>   | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017</b>                       | <b>FY 2018</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • WPN 2327: <i>HARM Mods</i>   | 76.561         | 86.721         | 111.902                 |                        | 111.902  | 126.154        | 157.852        | 160.620                              | 189.696        | 283.185                     | 1,355.780         |
| <b>Remarks</b>   |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| <b>D. Acquisition Strategy</b>   |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| The AARGM program started as a Phase I Small Business Innovative Research (SBIR), Advanced Technology Program, evolved into a Phase III SBIR program, and transitioned into a System Development and Demonstration (SD&D) Acquisition Category 1C program in June 2003. The AARGM SD&D fulfills U.S. Navy operational requirements and incorporates AARGM Advanced Technology Development and Quick Bolt Advanced Concept Technology Demonstration- demonstrated system requirements. Government responsibilities for SD&D have included monitoring, technical assessment, and validation of contractor technology development and testing. Milestone C was achieved 4Q FY 2008, followed by a combined FY08/FY09 Low Rate Initial Production (LRIP) contract award in 1Q FY 2009. LRIP I deliveries commenced 3Q FY 2010. Full Rate Production (FRP) decision was received 20 Aug 2012 with FRP contract award on 10 Sep 2012 and deliveries beginning in Dec 2014. Block 1 IOC anticipated for 4Q FY 2015. |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| <b>E. Performance Metrics</b>  |                |                |                         |                        |  |                |                |                                      |                |                             |                   |
| Achieved Milestone C in 2008. Completed Developmental Testing in 2009. Successfully completed Operational Test Readiness Review in 2010. Successfully completed Operational Test in 3Q FY 2012. Full Rate Production approval was granted in 4Q FY 2012, and deliveries will commence in FY 2014.  |                |                |                         |                        |  |                |                |                                      |                |                             |                   |

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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 7: Operational Systems Development |                        |                                |                 |         |            | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |            |              |            | PROJECT<br>2185: AARGM |            |                  |                  |            |                          |
| 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 Hardware Development   | WR                     | NSMA:Arlington, VA             | 0.768           | 0.705   | Nov 2011   | 0.000  |            | 0.000        |            | -                      |            | 0.000            | 7.161            | 8.634      |                          |
| Systems Engineering  | WR                     | NAWC-WD:China Lake, CA         | 60.599          | 4.090   | Nov 2011   | 4.010  | Nov 2012   | 5.295        | Nov 2013   | -                      |            | 5.295            | 14.612           | 88.606     |                          |
| Systems Engineering  | WR                     | NAWC-AD:Patuxent River, MD     | 0.000           | 0.000   | Mar 2012   | 0.000  |            | 0.000        |            | -                      |            | 0.000            | 0.000            | 0.000      |                          |
| Software Development   | WR                     | SPAWAR:San Diego, CA           | 0.000           | 0.263   | Apr 2012   | 0.000  |            | 0.000        |            | -                      |            | 0.000            | 0.000            | 0.263      |                          |
| Prior year Prod Dev cost no longer funded in the FYDP  | Various                | Various:Various                | 527.894         | 0.000   |            | 0.000  |            | 0.000        |            | -                      |            | 0.000            | 0.000            | 527.894    |                          |
| Subtotal   |                        |                                | 589.261         | 5.058   |            | 4.010  |            | 5.295        |            | 0.000                  |            | 5.295            | 21.773           | 625.397    |                          |
| 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 |
| Studies and Analyses   | Various                | Various:Various                | 0.711           | 0.000   |            | 0.000  |            | 0.000        |            | -                      |            | 0.000            | 0.100            | 0.811      |                          |
| Prior year Support cost no longer funded in the FYDP   | Various                | Various:Various                | 6.436           | 0.000   |            | 0.000  |            | 0.000        |            | -                      |            | 0.000            | 0.000            | 6.436      |                          |
| Subtotal   |                        |                                | 7.147           | 0.000   |            | 0.000  |            | 0.000        |            | 0.000                  |            | 0.000            | 0.100            | 7.247      |                          |
| Test and Evaluation (\$ 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 |
| Development Test & Evaluation  | WR                     | NAWC-WD:China Lake, CA         | 22.040          | 0.395   | Nov 2011   | 1.623  | Nov 2012   | 1.657        | Nov 2013   | -                      |            | 1.657            | 1.286            | 27.001     |                          |
| Operational Test & Evaluation  | WR                     | COMOPTEVFOR:Norfolk, VA        | 9.797           | 0.182   | Nov 2011   | 0.773  | Nov 2012   | 4.734        | Nov 2013   | -                      |            | 4.734            | 2.213            | 17.699     |                          |
|  |                        |                                |                 |         |            |  |            |              |            |                        |            |                  |                  |            |                          |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy  |                        |                                |                 |         |            |                               |            |              |            |             |            | DATE: April 2013 |                  |            |                          |
|---|------------------------|--------------------------------|-----------------|---------|------------|-------------------------------|------------|--------------|------------|-------------|------------|------------------|------------------|------------|--------------------------|
| APPROPRIATION/BUDGET ACTIVITY   |                        |                                |                 |         |            | R-1 ITEM NOMENCLATURE         |            |              |            | PROJECT     |            |                  |                  |            |                          |
| 1319: Research, Development, Test & Evaluation, Navy<br>BA 7: Operational Systems Development |                        |                                |                 |         |            | PE 0205601N: Harm Improvement |            |              |            | 2185: AARGM |            |                  |                  |            |                          |
| Test and Evaluation (\$ 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 |
| Development Test & Evaluation   | MIPR                   | NSA:Ft. Meade, MD              | 0.000           | 0.240   | Apr 2012   | 0.000                         |            | 0.000        |            | -           |            | 0.000            | 0.000            | 0.240      |                          |
| Ship Shock Testing  | WR                     | NSWC:Carderock, MD             | 0.000           | 0.010   | Apr 2012   | 0.000                         |            | 0.000        |            | -           |            | 0.000            | 0.000            | 0.010      |                          |
| Development Test & Evaluation   | MIPR                   | DITCO:Ft. Huachuca, AZ         | 0.000           | 0.034   | Nov 2011   | 0.000                         |            | 0.000        |            | -           |            | 0.000            | 0.000            | 0.034      |                          |
| Development Test & Evaluation   | SS/IDIQ                | ATK:Woodland Hills, CA         | 0.000           | 0.505   | Feb 2012   | 0.000                         |            | 0.000        |            | -           |            | 0.000            | 0.000            | 0.505      | 0.505                    |
| Prior year T&E cost no longer funded in the FYDP  | Various                | Various:Various                | 7.185           | 0.000   |            | 0.000                         |            | 0.000        |            | -           |            | 0.000            | 0.000            | 7.185      |                          |
| Subtotal  |                        |                                | 39.022          | 1.366   |            | 2.396                         |            | 6.391        |            | 0.000       |            | 6.391            | 3.499            | 52.674     |                          |
| Management Services (\$ 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 |
| Program Management Support  | Various                | Various:Various                | 3.076           | 0.015   | Feb 2012   | 0.147                         | Feb 2013   | 0.115        | Feb 2014   | -           |            | 0.115            | 0.200            | 3.553      |                          |
| Travel  | WR                     | NAVAIR HQ:Patuxent River, MD   | 1.613           | 0.044   | Nov 2011   | 0.017                         | Nov 2012   | 0.014        | Jan 2014   | -           |            | 0.014            | Continuing       | Continuing | Continuing               |
| Government Engineering Support  | WR                     | NAWC AD:Patuxent River, MD     | 0.000           | 0.021   | Dec 2011   | 0.425                         | Nov 2012   | 0.432        | Nov 2013   | -           |            | 0.432            | Continuing       | Continuing | Continuing               |
| Prior year Mgmt cost no longer funded in the FYDP   | Various                | Various:Various                | 10.250          | 0.000   |            | 0.000                         |            | 0.000        |            | -           |            | 0.000            | 0.000            | 10.250     |                          |
| Subtotal  |                        |                                | 14.939          | 0.080   |            | 0.589                         |            | 0.561        |            | 0.000       |            | 0.561            |                  |            |                          |
| Remarks   |                        |                                |                 |         |            |                               |            |              |            |             |            |                  |                  |            |                          |
| Contract Type for Travel is TO  |                        |                                |                 |         |            |                               |            |              |            |             |            |                  |                  |            |                          |
|   |                        |                                |                 |         |            |                               |            |              |            |             |            |                  |                  |            |                          |

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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 7: Operational Systems Development |                 |         |  |         | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |              |  |             |  | PROJECT<br>2185: AARGM |                  |            |                          |
|  | All Prior Years | FY 2012 |  | FY 2013 |  | FY 2014 Base |  | FY 2014 OCO |  | FY 2014 Total          | Cost To Complete | Total Cost | Target Value of Contract |
| Project Cost Totals  | 650.369         | 6.504   |  | 6.995   |  | 12.247       |  | 0.000       |  | 12.247                 |                  |            |                          |

**Remarks**

Note: RDTE funding for MDAP 368 is \$648.6 and includes funding in FY11 and prior. FY12 RDTE funding through FYDP for AARGM (PU 2185) is not considered MDAP and will not agree with SAR nor DAES submissions.

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PE 0205601N: *Harm Improvement*  
Navy

R-1 Line #181

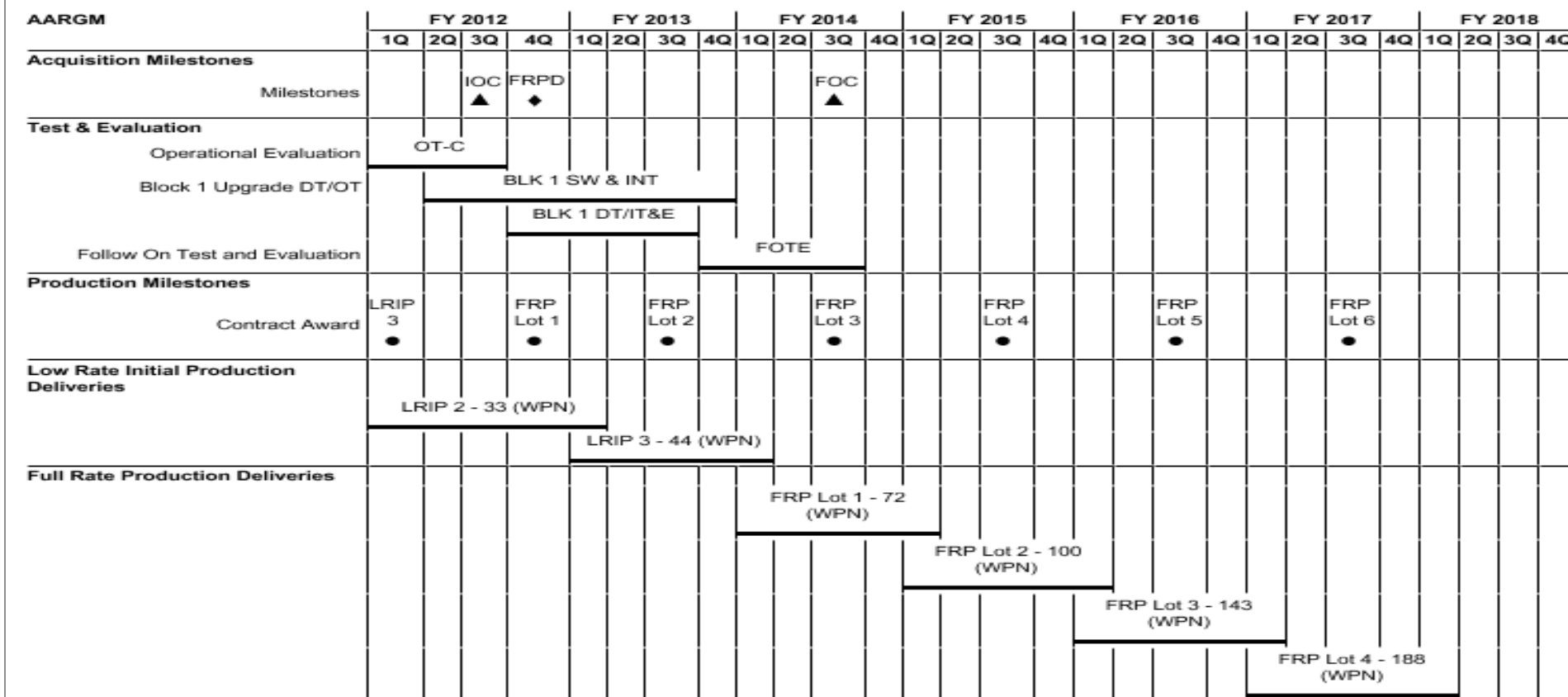
**APPROPRIATION/BUDGET ACTIVITY**

1319: Research, Development, Test & Evaluation, Navy  
BA 7: Operational Systems Development

## R-1 ITEM NOMENCLATURE

PE 0205601N: *Harm Improvement*

|         |  |
|---------|--|
| PROJECT |  |
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2185: *AARGM*

2014OSD - 0205601N - 2185

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|---|--|--------------------------------------|-------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Navy   |  |                                      | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> | <b>PROJECT</b><br>2185: <i>AARGM</i> |                         |

**Schedule Details**

| <b>Events by Sub Project</b>   | <b>Start</b>   |             | <b>End</b>     |             |
|--|----------------|-------------|----------------|-------------|
|  | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| <b>AARGM</b>   |                |             |                |             |
| Acquisition Milestones: Milestones: Initial Operational Capability   | 3              | 2012        | 3              | 2012        |
| Acquisition Milestones: Milestones: Full Rate Production Decision  | 4              | 2012        | 4              | 2012        |
| Acquisition Milestones: Milestones: Full Operational Capability  | 3              | 2014        | 3              | 2014        |
| Test & Evaluation: Operational Evaluation: Operational Evaluation Restart                                  | 1              | 2012        | 3              | 2012        |
| Test & Evaluation: Block 1 Upgrade DT/OT: Block 1 Software Development and Integration                     | 2              | 2012        | 4              | 2013        |
| Test & Evaluation: Block 1 Upgrade DT/OT: Block 1 Upgrade Development Test/ Integrated Test and Evaluation | 4              | 2012        | 3              | 2013        |
| Test & Evaluation: Follow On Test and Evaluation: Follow On Test and Evaluation                            | 4              | 2013        | 3              | 2014        |
| Production Milestones: Contract Award: Low Rate Initial Production 3                                       | 1              | 2012        | 1              | 2012        |
| Production Milestones: Contract Award: Full Rate Production Lot 1  | 4              | 2012        | 4              | 2012        |
| Production Milestones: Contract Award: Full Rate Production Lot 2  | 3              | 2013        | 3              | 2013        |
| Production Milestones: Contract Award: Full Rate Production Lot 3  | 3              | 2014        | 3              | 2014        |
| Production Milestones: Contract Award: Full Rate Production Lot 4  | 3              | 2015        | 3              | 2015        |
| Production Milestones: Contract Award: Full Rate Production Lot 5  | 3              | 2016        | 3              | 2016        |
| Production Milestones: Contract Award: Full Rate Production Lot 6  | 3              | 2017        | 3              | 2017        |
| Low Rate Initial Production Deliveries: Low-Rate Initial Production 2 Delivery (WPN)                       | 1              | 2012        | 1              | 2013        |
| Low Rate Initial Production Deliveries: Low Rate Initial Production 3 Delivery (WPN)                       | 1              | 2013        | 1              | 2014        |
| Full Rate Production Deliveries: Full Rate Production Deliveries - Lot 1 (WPN)                             | 1              | 2014        | 1              | 2015        |
| Full Rate Production Deliveries: Full Rate Production Deliveries - Lot 2 (WPN)                             | 1              | 2015        | 1              | 2016        |
| Full Rate Production Deliveries: Full Rate Production Deliveries - Lot 3 (WPN)                             | 1              | 2016        | 1              | 2017        |
| Full Rate Production Deliveries: Full Rate Production Deliveries - Lot 4 (WPN)                             | 1              | 2017        | 1              | 2018        |

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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 7: Operational Systems Development   |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |               |         |         | PROJECT<br>3056: Advanced Precision Kill Weapons System |                  |                  |            |
| 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 |
| 3056: Advanced Precision Kill Weapons System   | 0.000           | 2.969   | 0.000                | 0.000        | -  | 0.000         | 0.000   | 0.000   | 0.000   | 0.000            | 0.000            | 2.969      |
| 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   |                 |         |                      |              |  |               |         |         |   |                  |                  |            |
| Beginning in FY 2014, a new Program Element (PE) was established (BA 7 - 0605555N) for the Direct and Time Sensitive Strike Program Office to support research, development, test and evaluation of Strike Weapons employed from a multitude of fixed and rotary wing aircraft in support of offensive and defensive land and sea based targets across multiple mission areas. This project unit has been transferred to PE 0605555N.  |                 |         |                      |              |  |               |         |         |   |                  |                  |            |
| A. Mission Description and Budget Item Justification   |                 |         |                      |              |  |               |         |         |   |                  |                  |            |
| Advanced Precision Kill Weapons System (APKWS) II was an Army System Development & Demonstration (SD&D) program to develop a low cost Semi Active Laser precision guidance section for existing 2.75-inch unguided rockets. APKWS II will provide an inexpensive, small, lightweight precision-kill weapon that is effective against soft and lightly armored targets, and which enhances crew survivability with increased standoff range. APKWS II offers precision, maximum stored kills per aircraft sortie, minimum collateral damage potential, and increased effectiveness over legacy unguided rockets. The guidance package can be assembled with existing unguided rocket components (warhead and rocket motors) and can be fired from 2.75-inch Rocket Launcher. SD&D program was completed 3Q FY 2010, and Milestone C was approved in 3Q FY 2010. The Low Rate Initial Production (LRIP) 1 contract was awarded to BAE Systems in 4Q FY 2010. The LRIP II contract option was awarded to BAE Systems in 2Q FY 2011. |                 |         |                      |              |  |               |         |         |   |                  |                  |            |
| The Fixed Wing Joint Capability Technology Demonstration (JCTD) is a joint USN and USAF effort sponsored by OSD and U.S. Central Command which will modify the APKWS II from the Program of Record (POR) and conduct a demonstration on USMC AV-8B and USAF A-10 aircraft. Effort is funded with OSD funds in FY 2010 and will be funded from this program element in FY 2012.   |                 |         |                      |              |  |               |         |         |   |                  |                  |            |
| Initial operational capability was declared in March 2012 in Afghanistan supporting Operation Enduring Freedom.  |                 |         |                      |              |  |               |         |         |   |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)   |                 |         |                      |              |  |               |         |         | FY 2012   | FY 2013          | FY 2014          |            |
| Title: APKWS SD&D  |                 |         |                      |              |  |               |         |         | 2.969   | 0.000            | 0.000            |            |
|  |                 |         |                      |              |  |               |         |         | Articles: 0   |                  |                  |            |
| FY 2012 Accomplishments:<br>APKWS POR - Full-Rate Production decision and contract.  |                 |         |                      |              |  |               |         |         |   |                  |                  |            |

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|---|----------------|----------------|-------------------------|--|--------------------------|----------------|---|----------------|----------------|-----------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Navy  |                |                |                         |  |                          |                | <b>DATE:</b> April 2013   |                |                |                             |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i>   |                |                |                         | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> |                          |                | <b>PROJECT</b><br>3056: <i>Advanced Precision Kill Weapons System</i> |                |                |                             |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>   |                |                |                         |  |                          |                | <b>FY 2012</b>  | <b>FY 2013</b> | <b>FY 2014</b> |                             |                   |
| APKWS JCTD - Technology demonstration and Military Utility Assessment.  |                |                |                         |  |                          |                |   |                |                |                             |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>   |                |                |                         |  |                          |                | 2.969   | 0.000          | 0.000          |                             |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>  |                |                |                         |  |                          |                |   |                |                |                             |                   |
| <b>Line Item</b>  | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014<br/>Base</b> | <b>FY 2014<br/>OCO</b>   | <b>FY 2014<br/>Total</b> | <b>FY 2015</b> | <b>FY 2016</b>  | <b>FY 2017</b> | <b>FY 2018</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • PANMC/015100: <i>Airborne<br/>Rockets (APKWS portion only)</i>  | 29.273         | 42.844         | 32.722                  |  | 32.722                   | 47.940         | 58.405  | 36.335         | 37.106         | Continuing                  | Continuing        |
| <b>Remarks</b>  |                |                |                         |  |                          |                |   |                |                |                             |                   |
| <b>D. Acquisition Strategy</b>  |                |                |                         |  |                          |                |   |                |                |                             |                   |
| The Navy assumed the APKWS II program from the Army. The previously competed SD&D Army contract to prime contractor was transferred to the Navy for continued management. The program was through Milestone B and meeting cost schedule and technical performance requirements. The Navy funded the remainder of the program to complete SD&D. The LRIP I contract was awarded to BAE Systems in 4Q FY 2010. The LRIP II contract was awarded to BAE Systems in 2Q FY 2011. |                |                |                         |  |                          |                |   |                |                |                             |                   |
| <b>E. Performance Metrics</b>   |                |                |                         |  |                          |                |   |                |                |                             |                   |
| APKWS II Milestone C approved in April 2010.  |                |                |                         |  |                          |                |   |                |                |                             |                   |
| APKWS II LRIP I awarded in July 2010.   |                |                |                         |  |                          |                |   |                |                |                             |                   |
| APKWS II LRIP II awarded in January 2011.   |                |                |                         |  |                          |                |   |                |                |                             |                   |
| APKWS II Fixed Wing Joint Capability Technology Demonstration Military Utility Assessment is scheduled for FY 2012.   |                |                |                         |  |                          |                |   |                |                |                             |                   |
| APKWS FRP Approved May 2012   |                |                |                         |  |                          |                |   |                |                |                             |                   |

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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: Research, Development, Test & Evaluation, Navy<br>BA 7: Operational Systems Development |                                   |   |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: Harm Improvement |                   |                     |                   |                    |                   | <b>PROJECT</b><br>3056: Advanced Precision Kill Weapons System |                         |                   |                                 |
| <b>Product Development (\$ 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> |
| JCTD  | C/CPIF                            | BAE:New Hampshire                         | 0.000                  | 1.000          | Apr 2012          | 0.000   |                   | 0.000               |                   | -                  |                   | 0.000  | 0.000                   | 1.000             | 1.000                           |
| Systems Engineering   | WR                                | NAWC-AD:Patuxent River, MD                | 0.000                  | 0.325          | Oct 2011          | 0.000   |                   | 0.000               |                   | -                  |                   | 0.000  | 0.000                   | 0.325             |                                 |
| Systems Engineering   | WR                                | NAWC-WD:China Lake, CA                    | 0.000                  | 1.215          | Nov 2011          | 0.000   |                   | 0.000               |                   | -                  |                   | 0.000  | 0.000                   | 1.215             |                                 |
| <b>Subtotal</b>   |                                   |   | 0.000                  | 2.540          |                   | 0.000   |                   | 0.000               |                   | 0.000              |                   | 0.000  | 0.000                   | 2.540             |                                 |
| <b>Remarks</b><br>Joint Capability Technology Demonstration   |                                   |   |                        |                |                   |   |                   |                     |                   |                    |                   |  |                         |                   |                                 |
| <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> |
| HWIL Lab Testing  | WR                                | Not Specified:Huntsville, AL              | 0.000                  | 0.075          | Jul 2012          | 0.000   |                   | 0.000               |                   | -                  |                   | 0.000  | 0.000                   | 0.075             |                                 |
| Maritime Demonstration Testing  | WR                                | NAWC-WD:Point Mugu, CA                    | 0.000                  | 0.117          | Dec 2011          | 0.000   |                   | 0.000               |                   | -                  |                   | 0.000  | 0.000                   | 0.117             |                                 |
| <b>Subtotal</b>   |                                   |   | 0.000                  | 0.192          |                   | 0.000   |                   | 0.000               |                   | 0.000              |                   | 0.000  | 0.000                   | 0.192             |                                 |
| <b>Remarks</b><br>HWIL - Hardware in the Loop   |                                   |   |                        |                |                   |   |                   |                     |                   |                    |                   |  |                         |                   |                                 |
| <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> |
| Program Management Support  | WR                                | NAWC-AD:Patuxent River                    | 0.000                  | 0.104          | Jun 2012          | 0.000   |                   | 0.000               |                   | -                  |                   | 0.000  | 0.000                   | 0.104             |                                 |
| Program Support   | C/FP                              | Tecolote:Patuxent River                   | 0.000                  | 0.117          | Jan 2012          | 0.000   |                   | 0.000               |                   | -                  |                   | 0.000  | 0.000                   | 0.117             | 0.117                           |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Navy | <b>DATE:</b> April 2013 |
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|---|--|---|
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> | <b>PROJECT</b><br>3056: <i>Advanced Precision Kill Weapons System</i> |
|---|--|---|

| Management Services (\$ 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 |
| Travel                               | WR                     | Various:Various                | 0.000           | 0.016   | Nov 2011   | 0.000   |            | 0.000        |            | -           |            | 0.000         | 0.000            | 0.016      |                          |
| <b>Subtotal</b>                      |                        |                                | 0.000           | 0.237   |            | 0.000   |            | 0.000        |            | 0.000       |            | 0.000         | 0.000            | 0.237      |                          |

**Remarks**  
Contract Type for travel is TO

|                            | All Prior Years | FY 2012 |  | FY 2013 |  | FY 2014 Base |  | FY 2014 OCO |  | FY 2014 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|-----------------|---------|--|---------|--|--------------|--|-------------|--|---------------|------------------|------------|--------------------------|
| <b>Project Cost Totals</b> | 0.000           | 2.969   |  | 0.000   |  | 0.000        |  | 0.000       |  | 0.000         | 0.000            | 2.969      |                          |

**Remarks**

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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 7: Operational Systems Development  |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |               |         |         | PROJECT<br>3212: MEDUSA JCTD |            |                  |            |
| 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 |
| 3212: MEDUSA JCTD   | 28.867          | 0.900   | 3.100                | 0.000        | -  | 0.000         | 0.000   | 0.000   | 0.000                        | 0.000      | 0.000            | 32.867     |
| 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  |                 |         |                      |              |  |               |         |         |                              |            |                  |            |
| Beginning in FY 2014, a new Program Element (PE) was established (BA 7 - 0605555N) for the Direct and Time Sensitive Strike Program Office to support research, development, test and evaluation of Strike Weapons employed from a multitude of fixed and rotary wing aircraft in support of offensive and defensive land and sea based targets across multiple mission areas. This project unit has been transferred to PE 0605555N.   |                 |         |                      |              |  |               |         |         |                              |            |                  |            |
| A. Mission Description and Budget Item Justification  |                 |         |                      |              |  |               |         |         |                              |            |                  |            |
| The Medusa Joint Capability Technology Demonstration (JCTD) will demonstrate the Low Cost Guided Imaging Rockets (LOGIR) technology currently being developed at the Naval Air Warfare Center Weapons Division China Lake on the MH-60S. LOGIR provides "fire and forget" capability to 2.75-inch rockets in support of Sea Shield Pillar, increases platform lethality against Fast Attack Craft (FAC)/Fast Inshore Attack Craft (FIAC) threat, provides a low-cost Imaging InfraRed precision guidance section for the existing 2.75-inch unguided rockets and provides maximum precision kills per sortie, low cost, minimum collateral damage, increased efficiency, and increased standoff. Initial Program documentation (i.e. Performance Spec, Capabilities Development Document) will be developed within the scope of the JCTD. |                 |         |                      |              |  |               |         |         |                              |            |                  |            |
| Digital Rocket Launcher (DRL) provides 2.75 inch-rocket capability on MH-60R/S in support of Sea Shield Pillar, increases lethality against FAC/FIAC threat. The addition of the APKWS guidance section for the existing 2.75 inch unguided rockets provides maximum precision kills per sortie, minimum collateral damage, increased efficiency, and increased standoff.   |                 |         |                      |              |  |               |         |         |                              |            |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)  |                 |         |                      |              |  |               |         |         | FY 2012                      | FY 2013    | FY 2014          |            |
| Title: MEDUSA JCTD<br><br>Articles:<br><br>FY 2012 Accomplishments:<br>Funding was provided for required documentation of hardware, software, and tools suitable for starting up new/future efforts: updated Platform to Launcher and Launcher to Weapon Initial Capabilities Document and implemented critical upgrades to Modeling and Simulation tools developed during the JCTD.  |                 |         |                      |              |  |               |         |         | 0.900<br>0                   | 0.000      | 0.000            |            |
|   |                 |         |                      |              |  |               |         |         |                              |            |                  |            |
| Title: Digital Rocket Launcher<br><br>Articles:<br><br>FY 2013 Plans:   |                 |         |                      |              |  |               |         |         | 0.000                        | 3.100<br>0 | 0.000            |            |
|   |                 |         |                      |              |  |               |         |         |                              |            |                  |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Navy  |  | <b>DATE:</b> April 2013  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i>   |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> | <b>PROJECT</b><br>3212: <i>MEDUSA JCTD</i> |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>   |  | <b>FY 2012</b>   | <b>FY 2013</b>                             |
| Funding will be used for the development of a DRL for 2.75 rockets. Delivery order with Arnold Defence & Electronics will be awarded for Test asset manufacturing. Electronic circuit boards will be assembled, and test plan completed. Aircraft integration, qualification testing and all additional test requirements to include shipboard certification testing will be completed. Class I Engineering Change Proposal will be created and completed. Naval Air Training and Operating Procedures Standardization (NATOPS) manuals, support equipment, maintenance plan and training will be updated to include DRL. |  |  |  |
| <b>Accomplishments/Planned Programs Subtotals</b>   |  | 0.900  | 3.100                                      |
| <b>C. Other Program Funding Summary (\$ in Millions)</b><br>N/A   |  |  |  |
| <b>Remarks</b>  |  |  |  |
| <b>D. Acquisition Strategy</b><br>The MEDUSA Joint Capability Technology Demonstration was performed in FY09-FY11. The DRL is a Rapid Deployment Capability with Early Operational Capability in FY14 which will be a combination of procurement from government and contractor sources for the final product.  |  |  |  |
| <b>E. Performance Metrics</b><br>Integration and Demonstration is scheduled to continue until 2Q FY12. Performance Spec and Capability Development Document will be completed in 4Q FY12.   |  |  |  |

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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 7: Operational Systems Development |                        |                                |                 |         |            | R-1 ITEM NOMENCLATURE<br>PE 0205601N: Harm Improvement |            |              |            | PROJECT<br>3212: MEDUSA JCTD |            |                  |                  |            |                          |
| 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 |
| Systems Engineering  | WR                     | NAWC-WD:China Lake, CA         | 7.878           | 0.900   | Jun 2012   | 0.000  |            | 0.000        |            | -                            |            | 0.000            | 0.000            | 8.778      |                          |
| Product Development (DRL)  | C/CPFF                 | Lockheed Martin:Owego, NY      | 2.000           | 0.000   |            | 0.514  | Jan 2013   | 0.000        |            | -                            |            | 0.000            | 0.000            | 2.514      | 2.514                    |
| Systems Engineering (DRL)  | WR                     | NAWC-AD:Patuxent River, MD     | 0.781           | 0.000   |            | 0.255  | Nov 2012   | 0.000        |            | -                            |            | 0.000            | 0.000            | 1.036      |                          |
| Systems Engineering (DRL)  | Various                | NSWC:Indian Head, MD           | 2.673           | 0.000   |            | 0.400  | Dec 2012   | 0.000        |            | -                            |            | 0.000            | 0.000            | 3.073      |                          |
| Prior year Prod Dev cost no longer funded in the FYDP  | Various                | Various:Various                | 10.383          | 0.000   |            | 0.000  |            | 0.000        |            | -                            |            | 0.000            | 0.000            | 10.383     |                          |
| Subtotal   |                        |                                | 23.715          | 0.900   |            | 1.169  |            | 0.000        |            | 0.000                        |            | 0.000            | 0.000            | 25.784     |                          |
| Test and Evaluation (\$ 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 |
| Test & Evaluation (DRL)  | WR                     | NSWC:Indian Head, MD           | 0.000           | 0.000   |            | 0.400  | Feb 2013   | 0.000        |            | -                            |            | 0.000            | 0.000            | 0.400      |                          |
| Test & Evaluation (DRL)  | WR                     | NAWC-WD:China Lake, CA         | 0.000           | 0.000   |            | 0.750  | Jan 2013   | 0.000        |            | -                            |            | 0.000            | 0.000            | 0.750      |                          |
| Test & Evaluation (DRL)  | WR                     | NAWC-AD:Patuxent River, MD     | 0.000           | 0.000   |            | 0.400  | Dec 2012   | 0.000        |            | -                            |            | 0.000            | 0.000            | 0.400      |                          |
| Prior year T&E costs no longer funded in the FYDP  | Various                | Various:Various                | 4.464           | 0.000   |            | 0.000  |            | 0.000        |            | -                            |            | 0.000            | 0.000            | 4.464      |                          |
| Subtotal   |                        |                                | 4.464           | 0.000   |            | 1.550  |            | 0.000        |            | 0.000                        |            | 0.000            | 0.000            | 6.014      |                          |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Navy   |  |  |  |  |  |  |  |  |  |  |  |  | <b>DATE:</b> April 2013 |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i> |  |  |  |  |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> |  |  |  | <b>PROJECT</b><br>3212: <i>MEDUSA JCTD</i> |  |                         |  |  |

| <b>Management Services (\$ in Millions)</b>        |   |   |                            | <b>FY 2012</b> |                       | <b>FY 2013</b> |                       | <b>FY 2014<br/>Base</b> |                       | <b>FY 2014<br/>OCO</b> |                       | <b>FY 2014<br/>Total</b> |                             |                       |   |
|--|---|---|----------------------------|----------------|-----------------------|----------------|-----------------------|-------------------------|-----------------------|------------------------|-----------------------|--------------------------|-----------------------------|-----------------------|---|
| <b>Cost Category Item</b>                          | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b> | <b>All Prior<br/>Years</b> | <b>Cost</b>    | <b>Award<br/>Date</b> | <b>Cost</b>    | <b>Award<br/>Date</b> | <b>Cost</b>             | <b>Award<br/>Date</b> | <b>Cost</b>            | <b>Award<br/>Date</b> | <b>Cost</b>              | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
| Government Engineering Support                     | WR  | NAWC-AD:Patuxent River, MD                    | 0.000                      | 0.000          |                       | 0.350          | Dec 2012              | 0.000                   |                       | -                      |                       | 0.000                    | 0.000                       | 0.350                 |   |
| Travel   | WR  | NAVAIR:Patuxent River, MD                     | 0.021                      | 0.000          |                       | 0.031          | Dec 2012              | 0.000                   |                       | -                      |                       | 0.000                    | 0.000                       | 0.052                 |   |
| Prior year Mgmt costs no longer funded in the FYDP | Various                                   | Various:Various                               | 0.667                      | 0.000          |                       | 0.000          |                       | 0.000                   |                       | -                      |                       | 0.000                    | 0.000                       | 0.667                 |   |
| <b>Subtotal</b>                                    |   |   | 0.688                      | 0.000          |                       | 0.381          |                       | 0.000                   |                       | 0.000                  |                       | 0.000                    | 0.000                       | 1.069                 |   |

**Remarks**  
 Contract Type for Travel is TO.

|                            | <b>All Prior<br/>Years</b> | <b>FY 2012</b> |  | <b>FY 2013</b> |  | <b>FY 2014<br/>Base</b> |  | <b>FY 2014<br/>OCO</b> |  | <b>FY 2014<br/>Total</b> | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
|----------------------------|----------------------------|----------------|--|----------------|--|-------------------------|--|------------------------|--|--------------------------|-----------------------------|-----------------------|---|
| <b>Project Cost Totals</b> | 28.867                     | 0.900          |  | 3.100          |  | 0.000                   |  | 0.000                  |  | 0.000                    | 0.000                       | 32.867                |   |

**Remarks**  
 NOTE: This project has been moved to a new PE - 0605555N - all Cost to Complete information will be reflected under the new PE.

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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 7: Operational Systems Development

## R-1 ITEM NOMENCLATURE

PE 0205601N: Harm Improvement

## PROJECT

3212: MEDUSA JCTD

| Digital Rocket Launcher (DRL) & MEDUSA JCTD          | 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 |
| Acquisition Milestones                               |                     |                  |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Milestones   |                     |                  |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| System Development & Demonstration                   |                     |                  |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Capability Development Document and Performance Spec |                     |                  |           | CDD & Perf Spec (MEDUSA)<br>▼ |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| DRL Design   | DRL Design          |                  |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Technical Readiness Review (DRL)                     |                     |                  |           | TRR<br>■                      |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Interim Flight Clearance (DRL)                       |                     |                  | IFC<br>▼  |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Test & Evaluations Milestones                        |                     |                  |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Integration & Demonstration                          | Int & Demo (MEDUSA) |                  |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Regression Test                                      | RGT (MEDUSA)<br>▼   |                  |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Captive Carry Test                                   |                     | CC (MEDUSA)<br>▼ |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| A/C Software Development and Software Test (DRL)     |                     |                  | A/C Test  |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Vibration Testing (DRL)                              |                     |                  | Test<br>▼ |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| 1st Ground Launch Test (DRL)                         |                     | Ground Test<br>▼ |           |                               |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |

2014PB - 0205601N - 3212

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Navy   |  |  | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy</i><br>BA 7: <i>Operational Systems Development</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0205601N: <i>Harm Improvement</i> | <b>PROJECT</b><br>3212: <i>MEDUSA JCTD</i> |                         |

**Schedule Details**

| <b>Events by Sub Project</b>   | <b>Start</b>   |             | <b>End</b>     |             |
|--|----------------|-------------|----------------|-------------|
|  | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| <b><i>Digital Rocket Launcher (DRL) &amp; MEDUSA JCTD</i></b>  |                |             |                |             |
| System Development & Demonstration: Capability Development Document and Performance Spec: Capability Development Document (and Performance Spec MEDUSA-JCTD) | 4              | 2012        | 4              | 2012        |
| System Development & Demonstration: DRL Design: DRL Design   | 1              | 2012        | 2              | 2012        |
| System Development & Demonstration: Technical Readiness Review (DRL): Technical Readiness Review (DRL)   | 4              | 2012        | 4              | 2012        |
| System Development & Demonstration: Interim Flight Clearance (DRL): interim flight clearance (DRL)   | 3              | 2012        | 3              | 2012        |
| Test & Evaluations Milestones: Integration & Demonstration: Integration & Demonstration (MEDUSA-JCTD)  | 1              | 2012        | 2              | 2012        |
| Test & Evaluations Milestones: Regression Test: Regression Test (MEDUSA JCTD)  | 1              | 2012        | 1              | 2012        |
| Test & Evaluations Milestones: Captive Carry Test: Captive Carry Tests (MEDUSA JCTD)   | 2              | 2012        | 2              | 2012        |
| Test & Evaluations Milestones: A/C Software Development and Software Test (DRL): A/C Software Development and Software Test (DRL)                            | 3              | 2012        | 3              | 2012        |
| Test & Evaluations Milestones: Vibration Testing (DRL): Vibration Testing (DRL)  | 3              | 2012        | 3              | 2012        |
| Test & Evaluations Milestones: 1st Ground Launch Test (DRL): 1st Ground Launch Test (DRL)  | 2              | 2012        | 2              | 2012        |