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

R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy

PE 0604756N: Ship Self Def (Engage: Hard Kill)

DATE: April 2013

BA 5: System Development & Demonstration (SDD)

APPROPRIATION/BUDGET ACTIVITY

|                                       |                    | ( - /   |                      |                 |                   |                  |         |         |         |         |                     |               |  |
|---------------------------------------|--------------------|---------|----------------------|-----------------|-------------------|------------------|---------|---------|---------|---------|---------------------|---------------|--|
| COST (\$ in Millions)                 | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO ## | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Cost To<br>Complete | Total<br>Cost |  |
| Total Program Element                 | 590.348            | 20.041  | 64.079               | 50.209          | -                 | 50.209           | 82.731  | 109.465 | 70.286  | 173.386 | Continuing          | Continuing    |  |
| 0167: 5in Rolling Airframe<br>Missile | 202.339            | 1.250   | 1.297                | 1.321           | -                 | 1.321            | 1.346   | 1.343   | 1.369   | 1.393   | Continuing          | Continuing    |  |
| 0173: NATO Sea Sparrow                | 363.226            | 10.791  | 32.005               | 48.888          | -                 | 48.888           | 81.385  | 108.122 | 68.917  | 153.993 | Continuing          | Continuing    |  |
| 3342: Griffin Missile                 | 24.783             | 8.000   | 30.777               | 0.000           | -                 | 0.000            | 0.000   | 0.000   | 0.000   | 0.000   | 0.000               | 63.560        |  |
| 9999: Congressional Adds              | 0.000              | 0.000   | 0.000                | 0.000           | -                 | 0.000            | 0.000   | 0.000   | 0.000   | 18.000  | Continuing          | Continuing    |  |

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

### A. Mission Description and Budget Item Justification

This program element provides funding for the development of systems that fulfill a portion of the third phase of the Ship Self Defense: Engage Hard Kill. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming Anti-Ship Cruise Missiles (ASCM). Missile and system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (0173), Rolling Airframe Missile (RAM) (0167), Phalanx CIWS SeaRAM (9853A), Griffin, Javelin and Spike missile (3342). Missile improvements include improved kinematic performance plus advanced seeker and low elevation fusing/warhead capability improvements. System improvements include incorporation of Phalanx detection capability into RAM system (SeaRAM), future concepts studies and self-destructing ammunition, and Future Phalanx Next Generation Improvements. New system developments include integration of Griffin missile into Patrol Coastal (PC) and Littoral Combat Ship Missile Module, and development and/or qualification of shoulder launched missile system.

| B. Program Change Summary (\$ in Millions)            | FY 2012 | FY 2013 | FY 2014 Base | FY 2014 OCO | FY 2014 Total |
|---|---------|---------|--------------|-------------|---------------|
| Previous President's Budget                           | 6.631   | 64.079  | 30.412       | -           | 30.412        |
| Current President's Budget                            | 20.041  | 64.079  | 50.209       | -           | 50.209        |
| Total Adjustments                                     | 13.410  | 0.000   | 19.797       | -           | 19.797        |
| <ul> <li>Congressional General Reductions</li> </ul>  | -       | -       |              |             |               |
| <ul> <li>Congressional Directed Reductions</li> </ul> | -       | -       |              |             |               |
| <ul> <li>Congressional Rescissions</li> </ul>         | -       | -       |              |             |               |
| <ul> <li>Congressional Adds</li> </ul>                | -       | -       |              |             |               |
| <ul> <li>Congressional Directed Transfers</li> </ul>  | -       | -       |              |             |               |
| Reprogrammings  | 13.573  | 0.000   |              |             |               |
| SBIR/STTR Transfer                                    | -0.163  | 0.000   |              |             |               |
| Program Adjustments                                   | 0.000   | 0.000   | 19.924       | -           | 19.924        |
| Rate/Misc Adjustments                                 | 0.000   | 0.000   | -0.127       | -           | -0.127        |
| ,   |         |         |              | -<br>-      |               |

PE 0604756N: Ship Self Def (Engage: Hard Kill)

Navy

**UNCLASSIFIED** 

Page 1 of 24 R-1 Line #122

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

| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy  |  | DATE: April 2013                                |
|---|--|---|
| APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)   | R-1 ITEM NOMENCLATURE PE 0604756N: Ship Self Def (Engage: Ha | rd Kill)  |
| Change Summary Explanation FY 2012 Reprogramming increase provides \$8.0M funding for System (GMS) and \$5.6M for Stalker. FY 2014 increase provided for ESSM Blk 2 Upgrade | or Patrol Coastal (PC) Ship and Littoral Combat Ship N       | Missile Module integration with Griffin Missile |
|   |  |   |
|   |  |   |
|   |  |   |
|   |  |   |
|   |  |   |
|   |  |   |
|   |  |   |

PE 0604756N: Ship Self Def (Engage: Hard Kill)

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE **PROJECT** 1319: Research, Development, Test & Evaluation, Navy PE 0604756N: Ship Self Def (Engage: Hard | 0167: 5in Rolling Airframe Missile BA 5: System Development & Demonstration (SDD) Kill)

| COST (\$ in Millions)                 | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO ## | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Cost To<br>Complete | Total<br>Cost |
|---------------------------------------|--------------------|---------|----------------------|-----------------|-------------------|------------------|---------|---------|---------|---------|---------------------|---------------|
| 0167: 5in Rolling Airframe<br>Missile | 202.339            | 1.250   | 1.297                | 1.321           | -                 | 1.321            | 1.346   | 1.343   | 1.369   | 1.393   | 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

### A. Mission Description and Budget Item Justification

The Rolling Airframe Missile (RAM) program is an International cooperative program with the government of the Federal Republic of Germany. The purpose of this program is to develop, test, and field a surface-to-air self-defense system utilizing a dual mode, passive Radio Frequency/Infrared RAM. The baseline system (Block 0) provides a self-defense system to counter anti-ship cruise missiles (ASCM). RAM Block 0/1 provide defense capability against active and passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the utilization of passive Radio Frequency and Infrared seekers and a maritime optimized fuse. The RAM Block 1A software update and the Mk 49 MOD 3 Launcher upgrade program provide an additional asymmetric capability against helicopters, aircraft and surface craft. The RAM Block 2 upgrade program is a Cooperative requirement of the U.S. and Federal Republic of Germany, as agreed to in an International Memorandum of Understanding (MOU), and allows RAM to counter emerging highly maneuverable ASCM threats utilizing advanced seeksers while maintaining all the proven capabilities of RAM Block 0/1/1A's accurate terminal guidance, proven lethality, and no shipboard post launch dependence. Funding supports formal Developmental and Operational Testing (DT/OT) scheduled through FY16, data analysis, operational/test driven studies, support of Combat System performance analysis and identification of operationally relevant improvements.

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)   | FY 2012 | FY 2013 | FY 2014 |
|--|---------|---------|---------|
| Title: Rolling Airframe Missile Block 2 Development and Test   | 1.135   | 1.218   | 1.242   |
| Articles:  | 0       | 0       | 0       |
| FY 2012 Accomplishments: Funded Block 2 test and associated efforts to acheive Milestone C and Low Rate Inital Production decision.  |         |         |         |
| FY 2013 Plans: Fund Block 2 Integrated Operational Test and Evaluation (Development and Operational) IT-C1 and IT-C3 testing, analysis, incorporation of any changes and associated efforts to acheive Inital Operational Capability decision. |         |         |         |
| FY 2014 Plans: Funds ongoing Integrated Operational Test and Evaluation (Development and Operational) IT-C2 testing, testing, analysis, incorporation of any changes and associated efforts to acheive Full Rate Production decision.          |         |         |         |
| Title: Rolling Airframe Missile Block 2 Travel   | 0.115   | 0.079   | 0.079   |

PE 0604756N: Ship Self Def (Engage: Hard Kill)

UNCLASSIFIED Page 3 of 24

R-1 Line #122

DATE: April 2013

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

| Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy |  | DATE: April 2013   |                         |
|---|--|--------------------|-------------------------|
| APPROPRIATION/BUDGET ACTIVITY                           | R-1 ITEM NOMENCLATURE                    | <b>PROJECT</b>     |                         |
| 1319: Research, Development, Test & Evaluation, Navy    | PE 0604756N: Ship Self Def (Engage: Hard | 0167: <i>5in R</i> | olling Airframe Missile |
| BA 5: System Development & Demonstration (SDD)          | Kill)                                    |                    |                         |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)   | FY 2012 | FY 2013 | FY 2014 |
|--|---------|---------|---------|
| Articles:  | 0       | 0       | 0       |
| FY 2012 Accomplishments: Funded Program Office travel to support program and testing efforts as required by program schedule.                          |         |         |         |
| FY 2013 Plans: Funds Program Office travel to support program/testing as required by program schedule and in accordance with travel reduction mandate. |         |         |         |
| FY 2014 Plans: Funds Program Office travel to support program/testing as required by program schedule and in accordance with travel reduction mandate. |         |         |         |
| Accomplishments/Planned Programs Subtotals   | 1.250   | 1.297   | 1.321   |

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

|                        |         |         | FY 2014     | FY 2014    | FY 2014      |         |         |         |         | Cost To         |                   |
|------------------------|---------|---------|-------------|------------|--------------|---------|---------|---------|---------|-----------------|-------------------|
| <u>Line Item</u>       | FY 2012 | FY 2013 | <b>Base</b> | <u>000</u> | <u>Total</u> | FY 2015 | FY 2016 | FY 2017 | FY 2018 | <b>Complete</b> | <b>Total Cost</b> |
| • OPN 5238: <i>RAM</i> | 3.128   | 1.185   | 0.491       |            | 0.491        | 0.764   | 1.769   | 1.546   | 1.571   | Continuing      | Continuing        |
| • WPN 2242: <i>RAM</i> | 66.197  | 66.769  | 67.596      |            | 67.596       | 82.878  | 84.296  | 85.757  | 106.798 | Continuing      | Continuing        |

### Remarks

# D. Acquisition Strategy

The RAM Program uses directed sole source contracts with Raytheon Missile Systems Company, Tucson, AZ.

## E. Performance Metrics

Successfully achieve Milestone C. Successfully achieve Development/Operational Milestones.

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

Page 4 of 24

DATE: April 2013 Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE

PE 0604756N: Ship Self Def (Engage: Hard | 0167: 5in Rolling Airframe Missile Kill)

**PROJECT** 

| Product Developme                  | roduct Development (\$ in Millions) |                                    |                    |       | FY 2012       |       | FY 2013       |       | FY 2014<br>Base |       | FY 2014<br>OCO |       |            |               |                                |
|------------------------------------|-------------------------------------|------------------------------------|--------------------|-------|---------------|-------|---------------|-------|-----------------|-------|----------------|-------|------------|---------------|--------------------------------|
| Cost Category Item                 | Contract<br>Method<br>& Type        | Performing<br>Activity & Location  | All Prior<br>Years | Cost  | Award<br>Date | Cost  | Award<br>Date | Cost  | Award<br>Date   | Cost  | Award<br>Date  | Cost  | Cost To    | Total<br>Cost | Target<br>Value of<br>Contract |
| Primary Hardware<br>Development    | SS/CPFF                             | Raytheon:Tucson/<br>Louisville     | 7.434              | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | 0.000      | 7.434         |                                |
| Primary Hardware Dev<br>Support    | WR                                  | China Lake:CA                      | 1.266              | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | 0.000      | 1.266         |                                |
| Block 1 Eng/Interface<br>Support   | SS/CPFF                             | Raytheon:Tucson/<br>Louisville     | 0.400              | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | 0.000      | 0.400         |                                |
| Block 1 MOD 3 Interface<br>Support | C/CPFF                              | JHU/APL:MD                         | 0.981              | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | 0.000      | 0.981         |                                |
| Block 2 Upgrade                    | SS/CPAF                             | Raytheon:Tucson/<br>Louisville     | 134.529            | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | 0.000      | 134.529       |                                |
| Block 2 Upgrade                    | WR                                  | China Lake/ NRL/<br>Dahlgren:CA/VA | 15.244             | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | 0.000      | 15.244        |                                |
| Block 2 Upgrade                    | C/CPFF                              | JHU/APL:md                         | 1.300              | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | 0.000      | 1.300         |                                |
| Block 2 Product Support            | WR                                  | China Lake/NRL/<br>Dahlgren:CA/VA  | 3.577              | 0.000 |               | 0.000 |               | 0.000 |                 | -     |                | 0.000 | Continuing | Continuing    | Continuing                     |
|                                    | Subtotal 164.73                     |                                    |                    |       |               | 0.000 |               | 0.000 |                 | 0.000 |                | 0.000 |            |               |                                |

| Support (\$ in Millions | s)                           |                                   |                    | FY 2012 |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               | FY 2014<br>Total |                     |               |                                |
|-------------------------|------------------------------|-----------------------------------|--------------------|---------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|---------------|--------------------------------|
| Cost Category Item      | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost    | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Studies and Analyses    | Various                      | various:various                   | 1.210              | 0.000   |               | 0.000   |               | 0.000           |               | -              |               | 0.000            | Continuing          | Continuing    | Continuing                     |
|                         | Subtotal 1.210               |                                   |                    | 0.000   |               | 0.000   |               | 0.000           |               | 0.000          |               | 0.000            |                     |               |                                |

| Test and Evaluation | est and Evaluation (\$ in Millions) |                                   |                    |       |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               | FY 2014<br>Total |                     |               |                                |
|---------------------|-------------------------------------|-----------------------------------|--------------------|-------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|---------------|--------------------------------|
| Cost Category Item  | Contract<br>Method<br>& Type        | Performing<br>Activity & Location | All Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Test Support        | C/CPFF                              | Raytheon:Tucson                   | 13.787             | 1.083 | Jan 2012      | 0.736   | Nov 2012      | 0.646           | Nov 2013      | -              |               | 0.646            | 0.000               | 16.252        |                                |
| FOT&E               | WR                                  | China Lake/PHD:CA/<br>CA          | 4.674              | 0.000 |               | 0.000   |               | 0.000           |               | -              |               | 0.000            | 0.000               | 4.674         |                                |

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

**UNCLASSIFIED** Page 5 of 24

DATE: April 2013 Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE

PE 0604756N: Ship Self Def (Engage: Hard | 0167: 5in Rolling Airframe Missile Kill)

**PROJECT** 

| Test and Evaluation | est and Evaluation (\$ in Millions) |                                   |                    |       |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               |       |            |               |                                |
|---------------------|-------------------------------------|-----------------------------------|--------------------|-------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|-------|------------|---------------|--------------------------------|
| Cost Category Item  | Contract<br>Method<br>& Type        | Performing<br>Activity & Location | All Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost  | Cost To    | Total<br>Cost | Target<br>Value of<br>Contract |
| Test Support        | WR                                  | China Lake/PHD:CA/<br>CA          | 11.059             | 0.052 | Jan 2012      | 0.200   | Dec 2012      | 0.306           | Dec 2013      | -              |               | 0.306 | Continuing | Continuing    | Continuing                     |
| Miscellaneous       | Various                             | various:various                   | 5.733              | 0.000 |               | 0.000   |               | 0.000           |               | -              |               | 0.000 | 0.000      | 5.733         |                                |
| Test Support        | C/CPFF                              | JHU/APL:MD                        | 0.000              | 0.000 |               | 0.282   | Mar 2013      | 0.290           | Dec 2013      | -              |               | 0.290 | 0.000      | 0.572         |                                |
|                     |                                     | Subtotal                          | 35.253             | 1.135 |               | 1.218   |               | 1.242           |               | 0.000          |               | 1.242 |            |               |                                |

| Management Services (\$ in Millions)                 |                              |                                   | FY 2012            |       | FY 2          | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               |       |            |               |                                |
|--|------------------------------|-----------------------------------|--------------------|-------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|-------|------------|---------------|--------------------------------|
| Cost Category Item                                   | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost  | Cost To    | Total<br>Cost | Target<br>Value of<br>Contract |
| Travel   | Allot                        | Program Office:VA                 | 0.998              | 0.115 | Jan 2012      | 0.079   | Oct 2012      | 0.079           | Oct 2013      | -              |               | 0.079 | Continuing | Continuing    | Continuing                     |
| Defense Acquisition<br>Workforce Development<br>Fund | Various                      | various:various                   | 0.147              | 0.000 |               | 0.000   |               | 0.000           |               | -              |               | 0.000 | 0.000      | 0.147         |                                |
| Subtotal 1.145                                       |                              |                                   |                    | 0.115 |               | 0.079   |               | 0.079           |               | 0.000          |               | 0.079 |            |               |                                |

|                     | All Prior<br>Years | FY 2  | 012 | FY 2  | 013 | FY 201 | 4 FY 2014<br>OCO | FY 2014<br>Total | Cost To | Total<br>Cost | Target<br>Value of<br>Contract |
|---------------------|--------------------|-------|-----|-------|-----|--------|------------------|------------------|---------|---------------|--------------------------------|
| Project Cost Totals | 202.339            | 1.250 |     | 1.297 |     | 1.321  | 0.000            | 1.321            |         |               |                                |

Remarks

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

**UNCLASSIFIED** Page 6 of 24

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

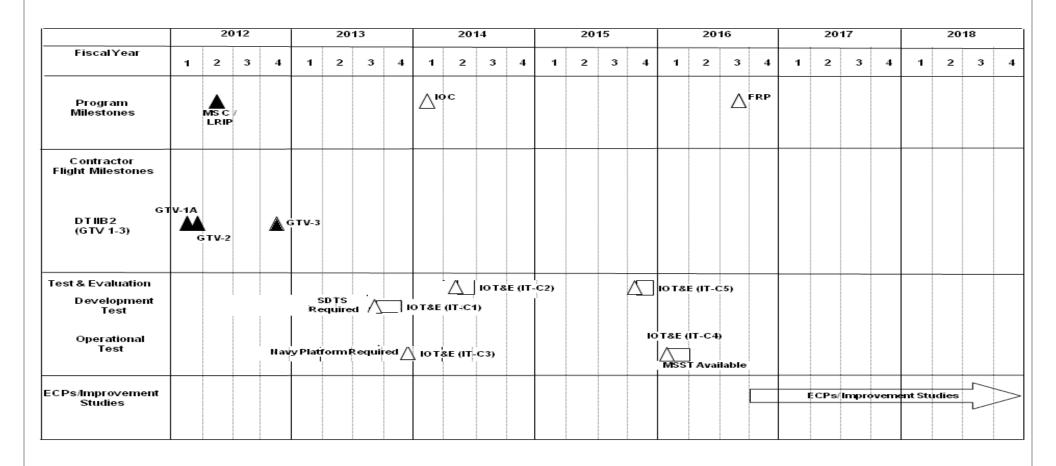
BA 5: System Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

Kill)

**PROJECT** 

PE 0604756N: Ship Self Def (Engage: Hard | 0167: 5in Rolling Airframe Missile



PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

**UNCLASSIFIED** Page 7 of 24

DATE: April 2013 Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE **PROJECT** 1319: Research, Development, Test & Evaluation, Navy PE 0604756N: Ship Self Def (Engage: Hard | 0167: 5in Rolling Airframe Missile BA 5: System Development & Demonstration (SDD) Kill)

## Schedule Details

|                          | Sta     | Start |         |      |  |  |  |
|--------------------------|---------|-------|---------|------|--|--|--|
| Events by Sub Project    | Quarter | Year  | Quarter | Year |  |  |  |
| Proj 0167                |         |       |         |      |  |  |  |
| MS C/LRIP                | 2       | 2012  | 2       | 2012 |  |  |  |
| IOC                      | 1       | 2014  | 1       | 2014 |  |  |  |
| FRP                      | 3       | 2016  | 3       | 2016 |  |  |  |
| GTV-1A Firing            | 1       | 2012  | 1       | 2012 |  |  |  |
| GTV-2 Firing             | 1       | 2012  | 1       | 2012 |  |  |  |
| GTV-3 Firing             | 4       | 2012  | 4       | 2012 |  |  |  |
| IOT&E (IT-C1)            | 3       | 2013  | 3       | 2013 |  |  |  |
| IOT&E (IT-C3)            | 4       | 2013  | 4       | 2013 |  |  |  |
| IOT&E (IT-C2)            | 2       | 2014  | 3       | 2014 |  |  |  |
| IOT&E (IT-C5)            | 4       | 2015  | 4       | 2015 |  |  |  |
| IOT&E (IT-C4)            | 1       | 2016  | 2       | 2016 |  |  |  |
| ECPs/Improvement Studies | 4       | 2016  | 4       | 2018 |  |  |  |

**UNCLASSIFIED** Page 8 of 24

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

R-1 ITEM NOMENCLATURE **PROJECT** APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy PE 0604756N: Ship Self Def (Engage: Hard | 0173: NATO Sea Sparrow BA 5: System Development & Demonstration (SDD)

Kill)

|                            |                    | ,       |                      |                 |                   |                  |         |         |         |         |                     |               |
|----------------------------|--------------------|---------|----------------------|-----------------|-------------------|------------------|---------|---------|---------|---------|---------------------|---------------|
| COST (\$ in Millions)      | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO ## | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Cost To<br>Complete | Total<br>Cost |
| 0173: NATO Sea Sparrow     | 363.226            | 10.791  | 32.005               | 48.888          | -                 | 48.888           | 81.385  | 108.122 | 68.917  | 153.993 | 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

### A. Mission Description and Budget Item Justification

This project encompasses five (5) primary efforts to enhance ship self defense:

- 1. Evolved SEASPARROW Missile (ESSM): A cooperative effort among 10 NATO SEASPARROW Nations and the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable Anti-Ship Cruise Missile (ASCM) threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 Vertical Launch System (VLS) to fire from a single cell with 4 ESSM (QuadPack); and modifications to the NSSMS to provide ESSM capability.
- 2. NATO SEASPARROW MK 91 Rearchitecture: The MK 91 Rearchitecture Program integrates NSSMS into the Ship Self Defense System (SSDS) Architecture to provide ship missile defense utilizing an open architected system Technical Design Agent.
- 3. NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 57 NSSMS radars (MK 9 Track Illuminator System) and launchers (MK 29 Guided Missile Launching System). The program eliminates all MK 57 watch stations, reduces the required system hardware.
- 4. STALKER LONG RANGE Electro Optic(EO)/Infra Red (IR)/Laser Range Finder (LRF) SYSTEM: Detects, acquires, classifies, identifies and determines intent of conventional, asymmetrical and advanced threats supporting Anti-Air Warefare (AAW), Anti-Surface Warefare (ASUW), Anti-terrorism/Force Protection (AT/FP) and Global War on Terrorism. Long Range Visible/Infra Red Sensors and Laser Range Finder provide multi-spectral target imagery and accurate range data in non-benign environments. Classification to the horizon, visual resolution of 1ft @ 10 nm and range resolution/rate within 1 ft/1kt/nm. This effort is in response to the NAVCENT Counter Swarm Urgent Operational Need (UON) to combat Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC).
- 5. ESSM Block 2 Risk Reduction: ESSM Block 2 upgrade is a cooperative effort between U.S Navy and NATO SEASPARROW Consortium Nations. ESSM Block 2 upgrade replaces the largely obsolete guidance section with a dual mode Active/Semi-Active X-Band seeker capable of defeating future threat capabilities within the existing envelope, including; smaller signatures, increased raid sizes, and adverse environments including countermeasures. Threat types include; advanced Anti-Ship Cruise Missile (ASCM)s, Anti-Ship Ballistic Missiles (ASBMs), surface and asymmetrical.

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each) | FY 2012 | FY 2013 | FY 2014 |
|--|---------|---------|---------|
| Title: NATO Sea Sparrow integration testing                                      | 4.936   | 9.356   | 9.207   |

Navy

UNCLASSIFIED Page 9 of 24

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

| FY 2012 Accomplishments:  Conducted US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conducted ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conducted ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provided for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2013 Plans:  Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D4, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2014 Plans:  Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  | PPROPRIATION/BUDGET ACTIVITY 319: Research, Development, Test & Evaluation, Navy A 5: System Development & Demonstration (SDD)  R-1 ITEM NOMENCLATURE PE 0604756N: Ship Self Def (Engage: Har  |                | ECT     | <u>·</u> |         |
|--|--|----------------|---------|----------|---------|
| B. Accomplishments (S in Millions, Article Quantities in Each)  B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)  FY 2012 FY 2013 FY 2012 Accomplishments:  Conducted US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conducted ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conducted ESSM SDSD integration testing on CVN platforms. Conduct US-unique DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provided for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2013 Plans:  Continue ESSM SDSD integration testing on CVN platforms. Conduct US-unique DT/OT firings on SDTS (DT/OT-D7) in support of SDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2014 Plans:  Continue ESSM SDSD integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM D49is integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D7) in support of SDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  Title: NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the exiting MK 57 NSMS radars (MK 9 Track | 319: Research, Development, Test & Evaluation, Navy A 5: System Development & Demonstration (SDD)  PE 0604756N: Ship Self Def (Engage: Hark Kill)  |                |         | oarrow   |         |
| FY 2012 Accomplishments: Conducted US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conducted ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D6) in support of Aegis Modernization Program. Conducted ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provided for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2013 Plans: Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D4, DT/OT-D6), DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2014 Plans: Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM Aegis integration at esting and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D6). DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  Title: NATO SEASPARROW Objective Configuration  Articles:  Description: NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 57 NSSMS radars (MK 9 Track illuminator System) and launchers (MK 29 Guided Missile Launching System). The program elliminates all MK 57 watch stations, reduces the required system hardware.  FY 2013 Plans:  Begin engineering dev | . Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)  |                |         |          |         |
| FY 2012 Accomplishments:  Conducted US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conducted ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conducted ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provided for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2013 Plans: Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D4, DT/OT-D6), DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2014 Plans: Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D4, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  Description: NATO SEASPARROW Objective Configuration  Articles:  Description: NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 57 NSSMS radars (Mk 9 Track illuminator System) and launchers (Mk 29 Guided Missile Launching System). The program eliminates all MK 57 watch stations, reduces the required system hardware.  FY 2013 Plans: Begin engineering development of the OC. Specific efforts in 2013 will include requirements defin |  |                | FY 2012 | FY 2013  | FY 2014 |
| Conducted US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conducted ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conducted ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provided for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2013 Plans: Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D3). Oonduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2014 Plans: Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4) and DT/OT-D5. DT/OT-D5. DT/OT-D5. DT/OT-D5 in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  Title: NATO SEASPARROW Objective Configuration  Articles:  Description: NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 67 NSSMS radars (MK) 9 Track illuminator System) and launchers (Mk  |  | rticles:       | 0       | 0        |         |
| Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2014 Plans: Continue ESSM SSDS integration testing and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  FY 2014 Plans: Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  Title: NATO SEASPARROW Objective Configuration  Articles:  Description: NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 57 NSSMS radars (Mk 9 Track illuminator System) and launchers (Mk 29 Guided Missile Launching System). The program eliminates all MK 57 watch stations, reduces the required system hardware.  FY 2013 Plans:  Begin engineering development of the OC. Specific efforts in 2013 will include requirements definition, completion of the requirements review followed by design definition with the preliminary design review completing in the 4th Quarter of FY 13.   | Conducted US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conducted ESSM Aegis integration and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Moderniz Program. Conducted ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and up evelopment. This provided for the U.S. share of cooperative efforts associated with ESSM engineering studies and other          | ation          |         |          |         |
| Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DT/OT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DT/OT-D4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D7) in support of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative efforts associated with ESSM engineering studies and other development initiatives.  Title: NATO SEASPARROW Objective Configuration  Articles:  Description: NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 57 NSSMS radars (Mk 9 Track illuminator System) and launchers (Mk 29 Guided Missile Launching System). The program eliminates all MK 57 watch stations, reduces the required system hardware.  FY 2013 Plans: Begin engineering development of the OC. Specific efforts in 2013 will include requirements definition, completion of the requirements review followed by design definition with the preliminary design review completing in the 4th Quarter of FY 13.   | Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DDT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DDO4, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-Dupport of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative ef          | 7/OT-<br>7) in |         |          |         |
| Description: NATO SEASPARROW Objective Configuration (OC). The OC Program consists of segmenting and automating the existing MK 57 NSSMS radars (Mk 9 Track illuminator System) and launchers (Mk 29 Guided Missile Launching System). The program eliminates all MK 57 watch stations, reduces the required system hardware.  FY 2013 Plans: Begin engineering development of the OC. Specific efforts in 2013 will include requirements definition, completion of the requirements review followed by design definition with the preliminary design review completing in the 4th Quarter of FY 13.   | Continue ESSM SSDS integration testing on CVN platforms. Conduct US-unique DT/OT firings from SDTS and carriers (DDT-D2, DT/OT-D3). Conduct ESSM Aegis integration testing and DT/OT firings on Cruisers and Destroyers and SDTS (DDOT, DT/OT-D5, DT/OT-D6) in support of Aegis Modernization Program. Conduct ESSM DT/OT firings on SDTS (DT/OT-D) upport of SSDS Open Architecture integration and uplink development. This provides for the U.S. share of cooperative elements. | 7/OT-<br>7) in |         |          |         |
| existing MK 57 NSSMS radars (Mk 9 Track illuminator System) and launchers (Mk 29 Guided Missile Launching System). The program eliminates all MK 57 watch stations, reduces the required system hardware.  FY 2013 Plans:  Begin engineering development of the OC. Specific efforts in 2013 will include requirements definition, completion of the requirements review followed by design definition with the preliminary design review completing in the 4th Quarter of FY 13.  | Title: NATO SEASPARROW Objective Configuration   | rticles:       | 0.000   |          | 16.98   |
| Begin engineering development of the OC. Specific efforts in 2013 will include requirements definition, completion of the requirements review followed by design definition with the preliminary design review completing in the 4th Quarter of FY 13.   | xisting MK 57 NSSMS radars (Mk 9 Track illuminator System) and launchers (Mk 29 Guided Missile Launching System).  |                |         |          |         |
| FY 2014 Plans:   | legin engineering development of the OC. Specific efforts in 2013 will include requirements definition, completion of the  | i.             |         |          |         |
|  | Y 2014 Plans:  |                |         |          |         |

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy UNCLASSIFIED
Page 10 of 24

| Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy  |  | DA            | <b>ГЕ:</b> April 2013 |         |
|--|--|---------------|-----------------------|---------|
| APPROPRIATION/BUDGET ACTIVITY  | R-1 ITEM NOMENCLATURE  | PROJECT       |                       |         |
| 1319: Research, Development, Test & Evaluation, Navy   | PE 0604756N: Ship Self Def (Engage: Hard   | 0173: NATO S  | ea Sparrow            |         |
| BA 5: System Development & Demonstration (SDD)   | Kill)  |               |                       |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article   | · · · · · · · · · · · · · · · · · · ·  | FY 201        | 2 FY 2013             | FY 2014 |
| The OC FY14 RDTE funding is allocated to the systems engineering with the NSSMS MK 9 radar automation, including associated SSE  |  | d             |                       |         |
| Title: NATO Sea Sparrow Combat System Integration Technical Di   |  | 0.2<br>icles: | 255 0.263<br>0 0      |         |
| FY 2012 Accomplishments:  Provided funding for the TDA for the engineering support for comb  | at system performance and risk mitigation.   |               |                       |         |
| FY 2013 Plans: Technical directive agent for the NSSM / MK 91 REACH. Provide systems and risk mitigation.  | engineering support in the integration with other combat   |               |                       |         |
| <b>FY 2014 Plans:</b> Technical directive agent for the NSSM / MK 91 REACH. Provides systems and risk mitigation.  | s engineering support in the integration with other combat   |               |                       |         |
| Title: STALKER LONG RANGE EO/IR/LRF SYSTEM   | Artı   | 5.6<br>icles: | 5.483<br>0 0          |         |
| <b>Description:</b> STALKER LONG RANGE EO/IR/LRF SYSTEM: Det conventional, asymmetrical and advanced threats supporting AAW, Visible/Infra Red Sensors and Laser Range Finder provide multi-spenvironments. Classification to the horizon, visual resolution of 1ft effort is in response to the NAVCENT Counter Swarm Urgent Oper Attack Craft (FAC/FIAC). Stalker will replace the Lowlight Level Te | , ASUW, AT/FP and Global War On Terrorism. Long Range<br>bectral target imagery and accurate range data in non-beni<br>@ 10 nm and range resolution/rate within 1 ft/1kt/nm. This<br>rational Need (UON) to combat Fast Attack Craft/Fast Insh | e<br>gn       |                       |         |
| FY 2012 Accomplishments:  A letter contract was awarded in August to Ball to procure 3 Stalke applicable data package. The contract contained an option for 5 a These 8 prototype units are expected to begin delivery in May 201:   | dditional units exercised in January.  |               |                       |         |
| FY 2013 Plans: Test Stalker Long Range EO/IR/LRF system on multiple ship confidifferent Concept of Operations (CONOPS). Determine optimum prochanges in capability required for common system for LHA/LHD are during developmental testing to avoid costly engineering changes.  | production configuration of controllers, video distribution, and CVN missions. Identify capability and configuration chai  | ıd            |                       |         |
| FY 2014 Plans:   |  |               |                       |         |

PE 0604756N: Ship Self Def (Engage: Hard Kill)

Navy

UNCLASSIFIED

Page 11 of 24 R-1 Line #122

| Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy | DATE: April 2013                         |                  |               |
|---|--|------------------|---------------|
| APPROPRIATION/BUDGET ACTIVITY                           | R-1 ITEM NOMENCLATURE                    | <b>PROJECT</b>   |               |
| 1319: Research, Development, Test & Evaluation, Navy    | PE 0604756N: Ship Self Def (Engage: Hard | 0173: <i>NAT</i> | O Sea Sparrow |
| BA 5: System Development & Demonstration (SDD)          | Kill)                                    |                  |               |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)  | FY 2012 | FY 2013 | FY 2014 |
|---|---------|---------|---------|
| Transition Active/Passive Dual Imaging Sensor (AP/DIS IR) improvement to Stalker to improve environmetal performance via active/passive Short Wave Infra Red. System improves maritime target identification with increased range and resolution at night and through haze penetration/clutter reduction.   |         |         |         |
| Title: Evolved SEASPARROW Blk 2 Risk Reduction  Articles:   | 0.000   | 8.000   | 20.000  |
| FY 2013 Plans: Perform Risk Reduction with consortium partners to reduce technology risk, determine and mature the appropriate set of technologies to be integrated into a full system.   |         |         |         |
| FY 2014 Plans: Complete Risk Reduction Phase and enter into Engineering Manufacturing Development (EMD) 2015 with an 2020 IOC. Tasks include items such as: conducting critical experiments and analyses required to mature design to support PDR; procurement of long lead laboratory and test assets required to support EMD; transitioning of design activities from Risk Reduction to EMD, and the start of EMD contract. |         |         |         |
| Accomplishments/Planned Programs Subtotals  | 10.791  | 32.005  | 48.888  |

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

|                             |         | -       | FY 2014     | FY 2014 | FY 2014      |         |         |         |         | <b>Cost To</b> |                   |
|-----------------------------|---------|---------|-------------|---------|--------------|---------|---------|---------|---------|----------------|-------------------|
| <u>Line Item</u>            | FY 2012 | FY 2013 | <b>Base</b> | OCO     | <u>Total</u> | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Complete       | <b>Total Cost</b> |
| • WPN 2307: <i>ESSM</i>     | 48.486  | 58.194  | 76.773      |         | 76.773       | 120.371 | 132.509 | 134.524 | 135.112 | 337.546        | 1,844.304         |
| • OPN 5237: <i>NATO SEA</i> | 8.926   | 8.960   | 60.403      |         | 60.403       | 28.564  | 40.636  | 31.637  | 32.179  | Continuing     | Continuing        |
| SPARROW                     |         |         |             |         |              |         |         |         |         |                |                   |

# Remarks

## D. Acquisition Strategy

ESSM is a directed sole source contract to Raytheon Missile Systems Company. The MK 29 ESSM Launcher Upgrade and REARC/SSDS Integration effort was a directed sole source contract to Raytheon Company Integrated Defense System.

## E. Performance Metrics

Successfully complete Developmental Test/Operational testing.

PE 0604756N: Ship Self Def (Engage: Hard Kill)

**UNCLASSIFIED** Page 12 of 24

R-1 Line #122

Navy

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 5: System Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604756N: Ship Self Def (Engage: Hard | 0173: NATO Sea Sparrow

Kill)

**PROJECT** 

DATE: April 2013

| Product Developmen                 | nt (\$ in M                  | illions)                          |                    | FY 2  | 2012          | FY 2013 |               |        | FY 2014<br>Base |       | 2014<br>CO    | FY 2014<br>Total |         |               |                                |
|------------------------------------|------------------------------|-----------------------------------|--------------------|-------|---------------|---------|---------------|--------|-----------------|-------|---------------|------------------|---------|---------------|--------------------------------|
| Cost Category Item                 | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost   | Award<br>Date   | Cost  | Award<br>Date | Cost             | Cost To | Total<br>Cost | Target<br>Value of<br>Contract |
| ESSM-Primary Hardware Development  | C/CPAF                       | Raytheon:Tucson                   | 143.356            | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 143.356       |                                |
| ESSM-Primary Hardware Development  | C/CPAF                       | Raytheon:Tuscon                   | 3.746              | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 3.746         | 3.74                           |
| Amphib Self-Defense PRA<br>Imp     | Various                      | various:various                   | 1.996              | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 1.996         | 11.20                          |
| Ancillary Hardware<br>Development  | SS/CPAF                      | Lockhead/<br>UDLP:various         | 46.706             | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 46.706        | 46.70                          |
| Systems Engineering                | Various                      | various:various                   | 22.622             | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 22.622        | 22.62                          |
| MK 29/ESSM Launcher upgrade        | C/CPAF                       | Raytheon<br>Sys:Tucson            | 8.521              | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 8.521         | 8.52                           |
| NATO-Primary Hdw Dev               | SS/CPAF                      | Raytheon<br>Sys:Tucson            | 30.627             | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 30.627        | 30.62                          |
| Software Development/<br>Test      | SS/CPAF                      | Raytheon<br>Sys:Tucson            | 7.691              | 0.000 |               | 0.000   |               | 0.000  |                 | -     |               | 0.000            | 0.000   | 7.691         |                                |
| Systems Engineering/<br>Firing Spt | WR                           | Corona:CA                         | 6.640              | 0.600 | Nov 2011      | 0.685   | Dec 2012      | 0.893  | Dec 2013        | -     |               | 0.893            | 0.000   | 8.818         |                                |
| NATO OC - Hardware                 | SS/CPAF                      | Raytheon:RI                       | 0.000              | 0.000 |               | 1.000   | Nov 2012      | 0.000  |                 | -     |               | 0.000            | 0.000   | 1.000         |                                |
| NATO OC System<br>Engineering      | SS/CPAF                      | Raytheon:RI                       | 0.000              | 0.000 |               | 1.653   | Nov 2012      | 2.679  | Nov 2013        | -     |               | 2.679            | 0.000   | 4.332         |                                |
| NATO OC - Software                 | SS/CPAF                      | Raytheon:RI                       | 0.000              | 0.000 |               | 4.938   | Nov 2012      | 12.749 | Feb 2014        | -     |               | 12.749           | 0.000   | 17.687        |                                |
| Stalker System<br>Engineering      | SS/CPAF                      | Ball:CO                           | 0.000              | 0.000 |               | 3.233   | Nov 2012      | 1.428  | Dec 2013        | -     |               | 1.428            | 0.000   | 4.661         |                                |
| Stalker Hardware<br>Engineering    | SS/CPAF                      | Ball:CO                           | 7.500              | 5.600 | Nov 2011      | 1.250   | Nov 2012      | 0.000  |                 | -     |               | 0.000            | 0.000   | 14.350        |                                |
| Stalker Software<br>Engineering    | SS/CPAF                      | Ball:CO                           | 2.000              | 0.000 |               | 0.500   | Nov 2012      | 0.500  | Dec 2013        | -     |               | 0.500            | 0.000   | 3.000         |                                |
| ESSM Blk 2 Risk reduction          | SS/<br>FFPLOE                | Raytheon<br>Sys:Tuscon            | 0.000              | 0.000 |               | 8.000   | Nov 2012      | 20.000 | Dec 2013        | -     |               | 20.000           | 0.000   | 28.000        |                                |
|                                    | •                            | Subtotal                          | 281.405            | 6.200 |               | 21.259  |               | 38.249 |                 | 0.000 |               | 38.249           | 0.000   | 347.113       |                                |

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

**UNCLASSIFIED** Page 13 of 24

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy

**R-1 ITEM NOMENCLATURE** 

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy

PE 0604756N: Ship Self Def (Engage: Hard | 0173: NATO Sea Sparrow

DATE: April 2013

BA 5: System Development & Demonstration (SDD)

APPROPRIATION/BUDGET ACTIVITY

Kill)

FY 2014 FY 2014 FY 2014 Support (\$ in Millions) FY 2012 FY 2013 oco Base Total Contract Target Method Performing All Prior Award Award Award Award **Cost To** Total Value of **Cost Category Item** Date Complete & Type Activity & Location Years Cost Cost Date Cost Date Cost Date Cost Contract Cost Integrated Logistics WR NSWC PHD:CA 3.568 0.000 0.000 0.000 0.000 0.000 3.568 Support Engr Support1 WR various:various 4.207 0.000 0.000 0.000 0.000 0.000 4.207 MK 29/ESSM Launcher Dahlgren/PHD:VA/ WR 0.375 0.000 0.000 0.000 0.000 0.000 0.375 Support Engr Support2 WR various:various 0.195 0.000 0.000 0.000 0.000 0.000 0.195 0.195 Dahlgren/PHD:VA/ NATO-MK 91/SSDS Integ WR 0.834 0.000 0.000 0.000 0.000 0.000 0.834 Enar Support3 WR various:various 6.364 0.000 0.000 0.000 0.000 0.000 6.364 NATO System TDA SS/FP APL:MD 1.220 0.155 Dec 2011 0.272 Nov 2012 0.272 Dec 2013 0.272 Continuing Continuing Continuing Nov 2012 NATO OC SS/FFP API ·MD 0.000 0.000 0.300 0.300 Dec 2013 0.300 0.000 0.600 Stalker -ISFA/TDA/RM&A 0.000 0.300 Nov 2012 0.300 Dec 2013 0.300 0.600 SS/FFP various:various 0.000 0.000 NATO Engr Support OC WR various:various 0.000 0.000 0.400 Nov 2012 0.500 Dec 2013 0.500 0.000 0.900 Subtotal 16.763 0.155 1.272 1.372 0.000 1.372

| Test and Evaluation (           | (\$ in Milli                 | ons)   |                    | FY 2  | 2012          | FY 2  | 2013          |       | 2014<br>ise   | FY 2014 FY 2014<br>OCO Total |               |       |            |               |                                |
|---------------------------------|------------------------------|--|--------------------|-------|---------------|-------|---------------|-------|---------------|------------------------------|---------------|-------|------------|---------------|--------------------------------|
| Cost Category Item              | Contract<br>Method<br>& Type | Performing<br>Activity & Location                | All Prior<br>Years | Cost  | Award<br>Date | Cost  | Award<br>Date | Cost  | Award<br>Date | Cost                         | Award<br>Date | Cost  | Cost To    | Total<br>Cost | Target<br>Value of<br>Contract |
| Developmental Test & Evaluation | WR                           | NSWC CL:CA                                       | 15.698             | 1.217 | Oct 2011      | 1.568 | Dec 2012      | 1.694 | Jan 2014      | -                            |               | 1.694 | Continuing | Continuing    | Continuing                     |
| OPEVAL/TECHEVAL/Test Firings    | WR                           | Corona, IHD,<br>Dahlgren, SNSWC,<br>PHD):various | 11.878             | 0.000 |               | 2.310 | Nov 2012      | 2.391 | Jan 2014      | -                            |               | 2.391 | 0.000      | 16.579        |                                |
| Developmental Test & Evaluation | SS/FFP                       | APL:MD   | 2.979              | 0.510 | Oct 2011      | 0.659 | Oct 2012      | 0.789 | Feb 2014      | -                            |               | 0.789 | Continuing | Continuing    | Continuing                     |
| ESSM Test & Evaluation          | C/CPAF                       | Raytheon:Tuscon                                  | 7.998              | 2.026 | Nov 2011      | 3.056 | Nov 2012      | 2.473 | Feb 2014      | -                            |               | 2.473 | Continuing | Continuing    | Continuing                     |
| Developmental Test & Evaluation | WR                           | Dahlgren:VA                                      | 0.418              | 0.000 |               | 0.000 |               | 0.000 |               | -                            |               | 0.000 | 0.000      | 0.418         | 0.836                          |
| ESSM Test & Evaluation          | WR                           | Dahlgren/PHD:VA/<br>CA                           | 0.000              | 0.543 | Nov 2011      | 0.560 | Nov 2012      | 0.592 | Feb 2014      | -                            |               | 0.592 | 0.000      | 1.695         |                                |

PE 0604756N: Ship Self Def (Engage: Hard Kill)

**UNCLASSIFIED** Page 14 of 24

R-1 Line #122

Navy

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY

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

# R-1 ITEM NOMENCLATURE

PE 0604756N: Ship Self Def (Engage: Hard | 0173: NATO Sea Sparrow Kill)

**PROJECT** 

DATE: April 2013

| Test and Evaluation         | (\$ in Milli                 | ons)                              |                    | FY 2012 |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               | FY 2014<br>Total |         |               |                                |
|-----------------------------|------------------------------|-----------------------------------|--------------------|---------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------|---------------|--------------------------------|
| Cost Category Item          | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost    | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To | Total<br>Cost | Target<br>Value of<br>Contract |
| NATO OC - Test & Evaluation | WR                           | Dahlgren/PHD:VA/<br>CA            | 0.000              | 0.000   |               | 0.469   | Nov 2012      | 0.572           | Nov 2013      | -              |               | 0.572            | 0.000   | 1.041         |                                |
| Stalker - Test & eval       | WR                           | TBD:TBD                           | 0.000              | 0.000   |               | 0.200   | Nov 2012      | 0.200           | Mar 2014      | -              |               | 0.200            | 0.000   | 0.400         |                                |
|                             | Subtotal 38.971              |                                   |                    | 4.296   |               | 8.822   |               | 8.711           |               | 0.000          |               | 8.711            |         |               |                                |

| Management Service                                   | lanagement Services (\$ in Millions) |                                   |                    |       |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               | FY 2014<br>Total |            |               |                                |
|--|--------------------------------------|-----------------------------------|--------------------|-------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|------------|---------------|--------------------------------|
| Cost Category Item                                   | Contract<br>Method<br>& Type         | Performing<br>Activity & Location | All Prior<br>Years | Cost  | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To    | Total<br>Cost | Target<br>Value of<br>Contract |
| ESSM-ENGR SPT  | WR                                   | various:various                   | 4.913              | 0.000 |               | 0.000   |               | 0.000           |               | -              |               | 0.000            | 0.000      | 4.913         |                                |
| ESSM-PM SPT  | WR                                   | various:various                   | 0.498              | 0.000 |               | 0.000   |               | 0.000           |               | -              |               | 0.000            | 0.000      | 0.498         | 0.498                          |
| ESSM-Support and<br>Performing Activity              | Allot                                | PHD/NAWC CL/<br>APL:CA/MD         | 13.951             | 0.000 |               | 0.256   | Dec 2012      | 0.300           | Oct 2013      | -              |               | 0.300            | Continuing | Continuing    | Continuing                     |
| ESSM-Travel  | Allot                                | Program Office:VA                 | 2.782              | 0.140 | Nov 2011      | 0.105   | Oct 2012      | 0.075           | Oct 2013      | -              |               | 0.075            | Continuing | Continuing    | Continuing                     |
| ESSM-Misc  | Various                              | various:various                   | 2.065              | 0.000 |               | 0.100   | Jun 2013      | 0.101           | Nov 2013      | -              |               | 0.101            | 0.000      | 2.266         | 2.065                          |
| NATO Travel/Misc                                     | Various                              | various:various                   | 1.831              | 0.000 |               | 0.191   | Oct 2012      | 0.080           | Oct 2013      | -              |               | 0.080            | 0.000      | 2.102         |                                |
| Defense Acquisition<br>Workforce Development<br>Fund | Various                              | various:various                   | 0.047              | 0.000 |               | 0.000   |               | 0.000           |               | -              |               | 0.000            | 0.000      | 0.047         |                                |
|  | Subtotal 26.087                      |                                   |                    |       |               | 0.652   |               | 0.556           |               | 0.000          |               | 0.556            |            |               |                                |

|                     | All Prior |         |         | FY 2014 | FY 2014 | FY 2014 | Cost To  | Total | Target<br>Value of |
|---------------------|-----------|---------|---------|---------|---------|---------|----------|-------|--------------------|
|                     | Years     | FY 2012 | FY 2013 | Base    | OCO     | Total   | Complete | Cost  | Contract           |
| Project Cost Totals | 363.226   | 10.791  | 32.005  | 48.888  | 0.000   | 48.888  |          |       |                    |

### Remarks

Various used for multiple vendors and location under threshold.

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

Page 15 of 24

R-1 Line #122

**UNCLASSIFIED** 

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

APPROPRIATION/BUDGET ACTIVITY

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

R-1 ITEM NOMENCLATURE PROJECT

Kill)

PE 0604756N: Ship Self Def (Engage: Hard | 0173: NATO Sea Sparrow

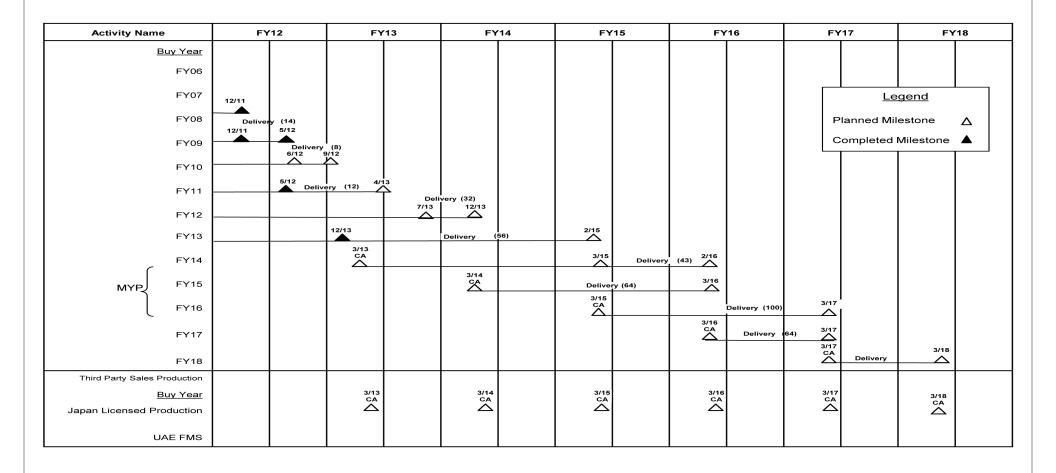


Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY

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

DATE: April 2013

R-1 ITEM NOMENCLATURE
PE 0604756N: Ship Self Def (Engage: Hard Kill)

O173: NATO Sea Sparrow

## Schedule Details

|  | Sta     | art  | En      | t    |  |
|--|---------|------|---------|------|--|
| Events by Sub Project                    | Quarter | Year | Quarter | Year |  |
| Proj 0173                                |         |      |         |      |  |
| Platform Intergration DT/OT              | 1       | 2012 | 2       | 2016 |  |
| Expiration of Production MOU             | 1       | 2012 | 1       | 2012 |  |
| MOU Extension                            | 2       | 2012 | 3       | 2014 |  |
| Page/Group/Row: FY 08 FRP DELIVERIES     | 1       | 2012 | 1       | 2012 |  |
| Page/Group/Row: FY 09 FRP DELIVERIES     | 1       | 2012 | 3       | 2012 |  |
| Page/Group/Row: FY 10 FRP DELIVERIES     | 3       | 2012 | 3       | 2013 |  |
| Page/Group/Row: FY 11 FRP DELIVERIES     | 4       | 2013 | 1       | 2014 |  |
| Page/Group/Row: FY 12 FRP CONTRACT AWARD | 1       | 2012 | 1       | 2012 |  |
| Page/Group/Row: FY 12 FRP DELIVERIES     | 1       | 2014 | 3       | 2014 |  |
| Page/Group/Row: FY 13 FRP CONTRACT AWARD | 1       | 2013 | 1       | 2013 |  |
| Page/Group/Row: FY 13 FRP DELIVERIES     | 1       | 2015 | 1       | 2016 |  |
| Page/Group/Row: FY 14 FRP CONTRACT AWARD | 1       | 2014 | 1       | 2014 |  |
| Page/Group/Row: FY14 FRP DELIVERIES      | 1       | 2016 | 3       | 2016 |  |
| Page/Group/Row: FY 15 FRP CONTRACT AWARD | 1       | 2015 | 1       | 2015 |  |
| Page/Group/Row: FY15 FRP DELIVERIES      | 1       | 2017 | 3       | 2017 |  |
| Page/Group/Row: FY 16 FRP CONTRACT AWARD | 1       | 2016 | 1       | 2016 |  |
| Page/Group/Row: FY 17 FRP CONTRACT AWARD | 1       | 2018 | 1       | 2018 |  |

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

UNCLASSIFIED
Page 17 of 24

DATE: April 2013

| APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE PROJECT  | PROJECT                                 |            | ATURE        | NOMENCL     | R-1 ITEM  |  |   |       |             |                                |  |  |  |  |
|--|---|------------|--------------|-------------|-----------|--|---|-------|-------------|--------------------------------|--|--|--|--|
| 1319: Research, Development, Test & Evaluation, Navy  PE 0604756N: Ship Self Def (Engage: Hard   3342: Griffin Missile | d 3342: Griffin                         | gage: Hard | elf Def (Eng | 56N: Ship S | PE 060475 |  |   |       |             |                                |  |  |  |  |
| BA 5: System Development & Demonstration (SDD) Kill)   | , |            |              |             |           |  |   | (SDD) | monstratior | BA 5: System Development & Der |  |  |  |  |
| COST (\$ in Millions)  All Prior Years   | 6 FY 2017                               | FY 2016    |              |             |           |  | COST (\$ in Millions)  All Prior  FY 2014 |       |             |                                |  |  |  |  |

| COST (\$ in Millions)      | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO ## | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Cost To<br>Complete | Total<br>Cost |
|----------------------------|--------------------|---------|----------------------|-----------------|-------------------|------------------|---------|---------|---------|---------|---------------------|---------------|
| 3342: Griffin Missile      | 24.783             | 8.000   | 30.777               | 0.000           | -                 | 0.000            | 0.000   | 0.000   | 0.000   | 0.000   | 0.000               | 63.560        |
| Quantity of RDT&E Articles | 0                  | 0       | 0                    | 0               |                   | 0                | 0       | 0       | 0       | 0       |                     |               |

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

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navv

## A. Mission Description and Budget Item Justification

The purpose of this program is to develop and deliver Counter-Swarm Small Boat defense capabilities for the Surface Fleet. There are two (2) primary efforts supporting this mission area listed below:

- 1. Rapid Deployment Capabilities (RDCs)
- Cyclone Patrol Coastal(PC) with Griffin Missile System (GMS)
- Littoral Combat Ship (LCS) Missile Module with Griffin Missile System
- 2. Shoulder Launched Missile System

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)  | FY 2012 | FY 2013 | FY 2014 |
|---|---------|---------|---------|
| Title: Griffin Missile System (GMS) Rapid Deployment Capabilities (RDCs)  | 7.000   | 8.100   | 0.000   |
| Articles:   | 0       | 0       |         |
| FY 2012 Accomplishments:  |         |         |         |
| Completed Launcher design, production and integration including restrained fire mitigation testing and environmental testing.   |         |         |         |
| Developed Weapons control system and battle management system and software modifications. Conducted end-to-end system   |         |         |         |
| testing in software integration lab. Procured test missiles, performed test planning and preparations, installation and checkout.   |         |         |         |
| Planned procurement for forward deployed PC hardware.   |         |         |         |
| FY 2013 Plans:  |         |         |         |
| Conduct Guided Test Vehicle (GTV)/structural test firing of Griffin missile and Quick Reaction Assessment (QRA) with Commander Operational Test and Evaluation Force (COMOPTEVFOR). Complete lead PC design, develop training and logistics |         |         |         |
| support, obtain safety approvals for system deployment and formulate the OCONUS AIT plan. Continue procurement planning for   |         |         |         |
| forward deployed PC hardware. Hardware and software upgrade will be implemented based on results of operational assessment.   |         |         |         |
| Title: Shoulder Launched Missile Systems  | 0.000   | 22.677  | 0.000   |
| Articles:   |         | 0       |         |
| FY 2013 Plans:  |         |         |         |
|   |         |         |         |

PE 0604756N: Ship Self Def (Engage: Hard Kill)

**UNCLASSIFIED** 

Page 18 of 24 R-1 Line #122

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

| Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy | DATE: April 2013                         |                       |
|---|--|-----------------------|
| APPROPRIATION/BUDGET ACTIVITY                           | R-1 ITEM NOMENCLATURE                    | PROJECT               |
| 1319: Research, Development, Test & Evaluation, Navy    | PE 0604756N: Ship Self Def (Engage: Hard | 3342: Griffin Missile |
| BA 5: System Development & Demonstration (SDD)          | Kill)                                    |                       |

| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)  | FY 2012 | FY 2013 | FY 2014 |
|---|---------|---------|---------|
| Perform environmental and safety qualification. Complete Electromagnetic Vulnerability/Electromagnetic Interference (EMV/ EMI) validation. Develop training curriculum and logistics support plan for existing missiles. Missile modifications, launcher development, architecture and warhead upgrade analysis for developmental missiles. |         |         |         |
| Title: LCS Increment 1 with Griffin Missile   | 1.000   | 0.000   | 0.000   |
| Articles:   | 0       |         |         |
| FY 2012 Accomplishments: Procured two (2) Griffin test missiles for LCS and performed LCS missile module modifications in preparation for the July 2013 test.   |         |         |         |
| Accomplishments/Planned Programs Subtotals  | 8.000   | 30.777  | 0.000   |

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

|                               | •       | <b></b> | FY 2014     | FY 2014 | FY 2014      |         |         |         |         | Cost To         |                   |
|-------------------------------|---------|---------|-------------|---------|--------------|---------|---------|---------|---------|-----------------|-------------------|
| <u>Line Item</u>              | FY 2012 | FY 2013 | <b>Base</b> | 000     | <u>Total</u> | FY 2015 | FY 2016 | FY 2017 | FY 2018 | <b>Complete</b> | <b>Total Cost</b> |
| WPN/2264: Stand Off Precision | 7.680   | 0.000   | 6.278       |         | 6.278        | 0.445   | 0.445   | 0.445   | 0.454   | 0.000           | 23.427            |
| Guided Munitions (SOPGM)      |         |         |             |         |              |         |         |         |         |                 |                   |
| OPN/5543: Items Less Than \$5 | 9.600   | 0.000   | 5.793       |         | 5.793        | 4.367   | 2.927   | 0.000   | 0.000   | 0.000           | 32.287            |
| Million                       |         |         |             |         |              |         |         |         |         |                 |                   |
| OMN/1D4D: Griffin Missile     | 0.000   | 0.000   | 1.567       |         | 1.567        | 6.795   | 6.895   | 6.995   | 7.120   | 0.000           | 29.372            |
| System Budget                 |         |         |             |         |              |         |         |         |         |                 |                   |

### Remarks

Navy

### **D. Acquisition Strategy**

RDCs consist of Griffin Missile System (GMS) integrated on Patrol Coastal and LCS. The Program Office manages development and integration of the GMS on surface ships. GMS consists of Griffin B Block II Missile procured via Raytheon sole source contract with U.S. Army Joint Attack Munitions System (JAMS) program office; BriteStar EO/IR Laser Designator procured by Navy Surface Weapon Center (NSWC) Crane on a FFP contract with Forward Looking Infra Red Systems. The Missile Launcher and Battle Management System are developed at NSWC Dahlgren and NSWC Corona. NSWC China Lake develops the shoulder launcher for Spike missile, Javelin missiles are procured through MARCOSYSCOM program office.

#### **E. Performance Metrics**

Successful completion of Quick Reaction Assessment (QRA) for Griffin Missile System Mar 2013. Qualification of Javelin missile for use aboard Military Sealift Command ships.

PE 0604756N: Ship Self Def (Engage: Hard Kill)

Page 19 of 24

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy

R-1 ITEM NOMENCLATURE **PROJECT** 

0.000

0.000

0.000

0.000

2.498

2.498

DATE: April 2013

1319: Research, Development, Test & Evaluation, Navy

APPROPRIATION/BUDGET ACTIVITY

BA 5: System Development & Demonstration (SDD)

PE 0604756N: Ship Self Def (Engage: Hard | 3342: Griffin Missile

Kill)

| Product Development (\$ in Millions)   |                              |                                   | FY 2012            |       | FY 2013       |        | FY 2014<br>Base |            | FY 2014<br>OCO |       | FY 2014<br>Total |                  |                     |               |                                |
|--|------------------------------|-----------------------------------|--------------------|-------|---------------|--------|-----------------|------------|----------------|-------|------------------|------------------|---------------------|---------------|--------------------------------|
| Cost Category Item                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost  | Award<br>Date | Cost   | Award<br>Date   | Cost       | Award<br>Date  | Cost  | Award<br>Date    | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| GMS - PC Integration                   | WR                           | PHD:CA                            | 1.097              | 1.306 | Nov 2012      | 0.410  | Nov 2012        | 0.000      |                | -     |                  | 0.000            | 0.000               | 2.813         |                                |
| GMS - PC Integration                   | WR                           | Dahlgren:VA                       | 6.188              | 4.406 | Nov 2012      | 3.599  | Nov 2012        | 0.000      |                | -     |                  | 0.000            | 0.000               | 14.193        |                                |
| Shoulder Launch Missile<br>Development | WR                           | China Lake:CA                     | 4.254              | 0.150 | Nov 2012      | 22.677 | Nov 2012        | 0.000      |                | -     |                  | 0.000            | 0.000               | 27.081        |                                |
| GMS - PC Integration                   | WR                           | Crane:IN                          | 4.171              | 0.510 | Nov 2012      | 0.000  |                 | 0.000      |                | -     |                  | 0.000            | 0.000               | 4.681         |                                |
| GMS - PC Integration                   | MIPR                         | JAMS:AL                           | 3.906              | 0.209 | Nov 2012      | 1.275  | Jan 2013        | 0.000      |                | -     |                  | 0.000            | 0.000               | 5.390         |                                |
| GMS - PC Integration                   | WR                           | Corona:CA                         | 0.476              | 0.413 | Nov 2012      | 0.120  | Dec 2012        | 0.000      |                | -     |                  | 0.000            | 0.000               | 1.009         |                                |
| GMS - PC Integration                   | WR                           | Pt Mugu:CA                        | 0.704              | 0.000 |               | 0.000  |                 | 0.000      |                | -     |                  | 0.000            | 0.000               | 0.704         |                                |
| GMS - PC Integration                   | WR                           | Indian Head:MD                    | 0.000              | 0.030 | Nov 2012      | 0.000  |                 | 0.000      |                | -     |                  | 0.000            | 0.000               | 0.030         |                                |
| GMS - PC Integration                   | WR                           | SPAWAR:CA                         | 0.195              | 0.198 | Nov 2012      | 0.055  | Jan 2013        | 0.000      |                | -     |                  | 0.000            | 0.000               | 0.448         |                                |
| GMS - PC Integration                   | Various                      | Various:Various                   | 2.400              | 0.556 | Nov 2012      | 1.757  | Feb 2013        | 0.000      |                | -     |                  | 0.000            | 0.000               | 4.713         |                                |
|  |                              | Subtotal                          | 23.391             | 7.778 |               | 29.893 |                 | 0.000      |                | 0.000 |                  | 0.000            | 0.000               | 61.062        |                                |
| Management Servic                      | es (\$ in M                  | illions)                          |                    | FY 2  | 2012          | FY 2   | 2013            | FY 2<br>Ba | 2014<br>ise    | FY 2  |                  | FY 2014<br>Total |                     |               |                                |
| Cost Category Item                     | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost  | Award<br>Date | Cost   | Award<br>Date   | Cost       | Award<br>Date  | Cost  | Award<br>Date    | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |

|     |                   | All Prior |       |     |        |      | FY 2014 | FY 2014 | FY 2014 | Cost To  | Total  | Target<br>Value of |
|-----|-------------------|-----------|-------|-----|--------|------|---------|---------|---------|----------|--------|--------------------|
|     |                   | Years     | FY 2  | 012 | FY 2   | 2013 | Base    | OCO     | Total   | Complete |        | Contract           |
| Pro | oject Cost Totals | 24.783    | 8.000 |     | 30.777 |      | 0.000   | 0.000   | 0.000   | 0.000    | 63.560 |                    |

0.884

0.884 Feb 2013

0.000

0.000

Remarks

Support

Program Management

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

Various

Various: Various

Subtotal

1.392

1.392

0.222 Nov 2012

0.222

**UNCLASSIFIED** Page 20 of 24

R-1 Line #122

0.000

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

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 5: System Development & Demonstration (SDD)

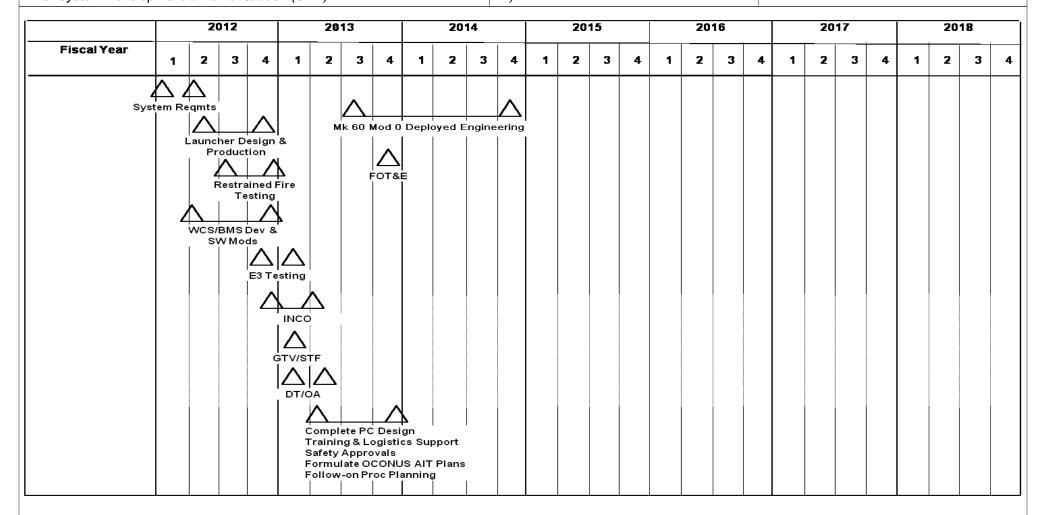
R-1 ITEM NOMENCLATURE

PE 0604756N: Ship Self Def (Engage: Hard | 3342: Griffin Missile

Kill)

PROJECT

3342: Griffin Missile



DATE: April 2013 Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE **PROJECT** 

1319: Research, Development, Test & Evaluation, Navy PE 0604756N: Ship Self Def (Engage: Hard | 3342: Griffin Missile Kill)

BA 5: System Development & Demonstration (SDD)

## Schedule Details

|  | St      | End  |         |      |  |
|--|---------|------|---------|------|--|
| Events by Sub Project                                      | Quarter | Year | Quarter | Year |  |
| Proj 3342  |         |      |         |      |  |
| System Requirements  | 1       | 2012 | 2       | 2012 |  |
| Launcher Design & Production                               | 2       | 2012 | 4       | 2012 |  |
| Restrained Fire Testing                                    | 3       | 2012 | 4       | 2012 |  |
| WCS/BMS Dev and SW Mods                                    | 2       | 2012 | 4       | 2012 |  |
| E3 Testing   | 4       | 2012 | 1       | 2013 |  |
| INCO   | 4       | 2012 | 1       | 2013 |  |
| GTV/STF  | 1       | 2013 | 1       | 2013 |  |
| DT/OA  | 1       | 2013 | 2       | 2013 |  |
| Complete PC Design, Trng, Safety, AIT Plans, Proc Planning | 2       | 2013 | 4       | 2013 |  |
| Mk 60 Mod 0 Deployed Engineering                           | 3       | 2013 | 4       | 2014 |  |
| FOT&E  | 4       | 2013 | 4       | 2013 |  |

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

Page 22 of 24

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604756N: Ship Self Def (Engage: Hard 9999: Congressional Adds

BA 5: System Development & Demonstration (SDD)

| DA 3. System Development & Del | monstration        | (300)   |                      |                 | rxiii)            |                  |         |         |         |         |                     |               |
|--------------------------------|--------------------|---------|----------------------|-----------------|-------------------|------------------|---------|---------|---------|---------|---------------------|---------------|
| COST (\$ in Millions)          | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO ## | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Cost To<br>Complete | Total<br>Cost |
| 9999: Congressional Adds       | 0.000              | 0.000   | 0.000                | 0.000           | -                 | 0.000            | 0.000   | 0.000   | 0.000   | 18.000  | 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

### A. Mission Description and Budget Item Justification

Congressional Add.

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

N/A

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

N/A

Remarks

# D. Acquisition Strategy

Not required for Congressional Adds.

## **E. Performance Metrics**

Not required for Congressional Adds.

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

Page 23 of 24

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

DATE: April 2013 Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy PE 0604756N: Ship Self Def (Engage: Hard | 9999: Congressional Adds BA 5: System Development & Demonstration (SDD)

Kill)

**PROJECT** 

| Product Development (\$ in Millions) |                              |                                   |                    | FY 2012 |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               | FY 2014<br>Total |            |               |                              |
|--------------------------------------|------------------------------|-----------------------------------|--------------------|---------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|------------|---------------|------------------------------|
| Cost Category Item                   | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost    | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To    | Total<br>Cost | Target<br>Value o<br>Contrac |
| TBD                                  | TBD                          | TBD:TBD                           | 0.000              | 0.000   |               | 0.000   |               | 0.000           |               | -              |               | 0.000            | Continuing | Continuing    | Continuir                    |
|                                      |                              | Subtotal                          | 0.000              | 0.000   |               | 0.000   |               | 0.000           |               | 0.000          |               | 0.000            |            |               |                              |
|                                      |                              |                                   | All Prior<br>Years | FY 2012 |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               | FY 2014<br>Total | Cost To    | Total<br>Cost | Target<br>Value o<br>Contrac |
|                                      |                              | Project Cost Totals               | 0.000              | 0.000   |               | 0.000   |               | 0.000           |               | 0.000          |               | 0.000            | •          |               |                              |

Remarks

PE 0604756N: Ship Self Def (Engage: Hard Kill) Navy

Page 24 of 24