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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Navy **Date:** February 2015

| <b>Appropriation/Budget Activity</b><br>1319: Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P) |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0603261N / Tactical Airborne Reconnaissance |                      |                |                |                |                |                         |                   |
|--|--------------------|----------------|----------------|---------------------|--|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| <b>COST (\$ in Millions)</b>   | <b>Prior Years</b> | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016 Base</b> | <b>FY 2016 OCO</b>   | <b>FY 2016 Total</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b> | <b>FY 2020</b> | <b>Cost To Complete</b> | <b>Total Cost</b> |
| Total Program Element  | 58.744             | 5.257          | 5.270          | 3.087               | -  | 3.087                | 3.652          | 3.600          | 3.563          | 3.617          | Continuing              | Continuing        |
| 2467: UAV Conops   | 58.744             | 5.257          | 5.270          | 3.087               | -  | 3.087                | 3.652          | 3.600          | 3.563          | 3.617          | Continuing              | Continuing        |

## A. Mission Description and Budget Item Justification

This program element funds efforts to develop Concept of Operations in support of the Navy's overall Unmanned Aircraft Systems (UAS) Strategy integrating UAS into the Chief of Naval Operations Navy Vision of Sea Power 21 (Sea Shield, Sea Strike, Sea Basing and FORCEnet). Also funds Navy's contribution supporting the Joint Technology Center/System Integration Laboratory providing experimentation for Unmanned Aerial Vehicle technology assessment, insertion, demonstration, transfer as well as simulation and exercise support.

This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

The FY 2016 funding request was reduced by \$337 thousand to account for the availability of prior year execution balances.

| <b>B. Program Change Summary (\$ in Millions)</b> | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016 Base</b> | <b>FY 2016 OCO</b> | <b>FY 2016 Total</b> |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget                       | 5.257          | 5.275          | 3.451               | -                  | 3.451                |
| Current President's Budget                        | 5.257          | 5.270          | 3.087               | -                  | 3.087                |
| Total Adjustments                                 | -              | -0.005         | -0.364              | -                  | -0.364               |
| • Congressional General Reductions                | -              | -0.005         |                     |                    |                      |
| • Congressional Directed Reductions               | -              | -              |                     |                    |                      |
| • Congressional Rescissions                       | -              | -              |                     |                    |                      |
| • Congressional Adds                              | -              | -              |                     |                    |                      |
| • Congressional Directed Transfers                | -              | -              |                     |                    |                      |
| • Reprogrammings                                  | -              | -              |                     |                    |                      |
| • SBIR/STTR Transfer                              | -              | -              |                     |                    |                      |
| • Program Adjustments                             | -              | -              | -3.451              | -                  | -3.451               |
| • Rate/Misc Adjustments                           | -              | -              | 3.087               | -                  | 3.087                |

## Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy  |             |         |         |              |   |               |         |             |  | Date: February 2015 |                  |               |
| Appropriation/Budget Activity<br>1319 / 4  |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0603261N / Tactical Airborne Reconnaissance |               |         |             | Project (Number/Name)<br>2467 / UAV Conops |                     |                  |               |
| COST (\$ in Millions)  | Prior Years | FY 2014 | FY 2015 | FY 2016 Base | FY 2016 OCO   | FY 2016 Total | FY 2017 | FY 2018     | FY 2019                                    | FY 2020             | Cost To Complete | Total Cost    |
| 2467: UAV Conops   | 58.744      | 5.257   | 5.270   | 3.087        | -   | 3.087         | 3.652   | 3.600       | 3.563                                      | 3.617               | Continuing       | Continuing    |
| Quantity of RDT&E Articles   |             | -       | -       | -            | -   | -             | -       | -           | -  | -                   |                  |               |
| A. Mission Description and Budget Item Justification   |             |         |         |              |   |               |         |             |  |                     |                  |               |
| The Naval Unmanned Aircraft Systems (UAS) Strategy employs a family of UAS to perform tactical, persistent and penetrating Intelligence, Surveillance, and Reconnaissance in support of Naval and Joint missions from forward bases/platforms and naval ships.   |             |         |         |              |   |               |         |             |  |                     |                  |               |
| In support of the Navy's overall UAS strategy, this program develops Concept of Operations (CONOPS) that integrate UAS into the Chief of Naval Operations Navy Vision of Sea Power 21 (Sea Shield, Sea Strike, Sea Basing and FORCEnet). By providing fleet input based on current operations with UAS in a simulated combat environment, this CONOPS development investment is the foundation of how the Carrier Strike Group and the Expeditionary Strike Group will operate a combined Manned and Unmanned Naval Air Force. This program establishes the common architecture, including Command & Control, for all unmanned systems to support and inform CONOPS development. This effort provides for a cross-program view of Naval Unmanned Systems and is the entry point for OSD and other services for commonality and interoperability. Specifically: |             |         |         |              |   |               |         |             |  |                     |                  |               |
| - Provides studies and demonstrations in support of the Naval UAS Family of Systems (FoS) CONOPS development.  |             |         |         |              |   |               |         |             |  |                     |                  |               |
| - Horizontally integrates across the Naval UAS FoS for the Naval Aviation Enterprise through interoperability and common system solutions.   |             |         |         |              |   |               |         |             |  |                     |                  |               |
| - Develops the Naval UAS FoS Architecture to support integration into the Naval Unmanned Systems Cross Functional Team.  |             |         |         |              |   |               |         |             |  |                     |                  |               |
| - Provides Naval support for development of Standards across Department of Defense (DoD) UAS and North Atlantic Treaty Organization, emphasizing standardization and interoperability.   |             |         |         |              |   |               |         |             |  |                     |                  |               |
| - Conducts CONOPS studies, demonstrations, and exercises for Vehicle Control, Targeting, and Weapons, Sensor and Payload Employment.   |             |         |         |              |   |               |         |             |  |                     |                  |               |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)   |             |         |         |              |   |               |         | FY 2014     | FY 2015                                    | FY 2016 Base        | FY 2016 OCO      | FY 2016 Total |
| Title: Studies and Demonstrations  |             |         |         |              |   |               |         | 1.031       | 1.253                                      | 1.530               | -                | 1.530         |
|  |             |         |         |              |   |               |         | Articles: - | -  | -                   | -                | -             |
| Description: Studies and demonstrations to develop CONOPS for manned-unmanned integration of UAS and aircraft systems. Build a UAS simulation environment for Modeling and Simulation of common UAS components in representative battlespace architectures.  |             |         |         |              |   |               |         |             |  |                     |                  |               |
| FY 2014 Accomplishments:<br>Conducted a study and developed an approach to demonstrate the capabilities of existing Visual Information (VI) Programs of Record, and emerging VI systems to meet current Navy Operational tasking (OPTASK) orders   |             |         |         |              |   |               |         |             |  |                     |                  |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy  |  |   |            | Date: February 2015                        |             |               |
| Appropriation/Budget Activity<br>1319 / 4  |  | R-1 Program Element (Number/Name)<br>PE 0603261N / Tactical Airborne Reconnaissance |            | Project (Number/Name)<br>2467 / UAV Conops |             |               |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)   |  | FY 2014   | FY 2015    | FY 2016 Base                               | FY 2016 OCO | FY 2016 Total |
| and Joint Urgent Operational Needs (JUONS) for tactical VI to the fleet. This approach has been approved by Fleet Forces Command to be demonstrated as part of Trident Warrior 15.<br><b>FY 2015 Plans:</b><br>Continue development of the UAS modeling and simulation of Fleet Concept of Operations scenarios. Demonstrate Manned/Unmanned interoperability.<br><b>FY 2016 Base Plans:</b><br>Continue to conduct studies, demonstrations, and testing to validate the Naval Interoperability profiles within the context of Integrated Warfare Capabilities.<br><b>FY 2016 OCO Plans:</b><br>N/A  |  |   |            |  |             |               |
| <b>Title:</b> Architecture Support/Common Ground Station<br><b>Articles:</b><br><b>Description:</b> Develop a Joint Service revision and configuration management of UAS interoperability profiles and Joint Common Ground Station Architecture and related government engineering support.<br><b>FY 2014 Accomplishments:</b><br>Continue to develop a Joint Service revision and configuration management of UAS interoperability profiles and Joint Common Ground Station Architecture and related government engineering support.<br><b>FY 2015 Plans:</b><br>Continue to develop a Joint Service revision and configuration management of UAS interoperability profiles and Joint Common Ground Station Architecture and related government engineering support.<br><b>FY 2016 Base Plans:</b><br>N/A<br><b>FY 2016 OCO Plans:</b><br>N/A |  | 2.000<br>-  | 1.824<br>- | -<br>-                                     | -<br>-      | -<br>-        |
| <b>Title:</b> Naval Interoperability & Standardization<br><b>Articles:</b>   |  | 2.226<br>-  | 2.193<br>- | 1.557<br>-                                 | -<br>-      | 1.557<br>-    |

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| Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy   |  |  |         | Date: February 2015                               |             |               |
| Appropriation/Budget Activity<br>1319 / 4   |  | R-1 Program Element (Number/Name)<br>PE 0603261N / <i>Tactical Airborne Reconnaissance</i> |         | Project (Number/Name)<br>2467 / <i>UAV Conops</i> |             |               |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>   |  |  |         |   |             |               |
|   |  | FY 2014  | FY 2015 | FY 2016 Base                                      | FY 2016 OCO | FY 2016 Total |
| <p><b>Description:</b> Increase Naval Unmanned Systems interoperability emphasizing Naval, Joint Service, and international standardization.</p> <p><b>FY 2014 Accomplishments:</b><br/>Developed and released the following Naval Interoperability Profiles (NIOPs) documentation: Vehicle Management Advanced Command &amp; Control, Payload Management Advanced Command &amp; Control, Motion Imagery, Full Motion Video, and Standard Common Data Link.</p> <p><b>FY 2015 Plans:</b><br/>Continue to develop Unmanned Systems Interoperability profiles and Navy implementation conventions for Naval UAS FoS Architecture. Support OSD Joint Service and NATO coalition interoperability efforts. Provide government engineering support, program office travel, and contract support services.</p> <p><b>FY 2016 Base Plans:</b><br/>Continue to develop Unmanned Systems Naval Interoperability Profiles in support of Integrated Warfare Capability Packages. Support OSD Joint Service and NATO coalition interoperability efforts. Provide government engineering support, program office travel, and contract support services.</p> <p><b>FY 2016 OCO Plans:</b><br/>N/A</p> |  |  |         |   |             |               |
| Accomplishments/Planned Programs Subtotals  |  | 5.257  | 5.270   | 3.087   | -           | 3.087         |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>  |  |  |         |   |             |               |
| N/A   |  |  |         |   |             |               |
| <b>Remarks</b>  |  |  |         |   |             |               |
| <b>D. Acquisition Strategy</b>  |  |  |         |   |             |               |
| The program office will leverage existing Government facilities (e.g., Joint Technology Center/System Integration Laboratory and Naval Unmanned Aircraft Systems (UAS) Program of Record assets as available) to develop and demonstrate Naval UAS Concept of Operations. Government engineering support will be used for Standards Development, Architectural Analysis, Modeling and Simulation efforts and testing.   |  |  |         |   |             |               |
| <b>E. Performance Metrics</b>   |  |  |         |   |             |               |
| UAS operations and interoperability for systems delivered to the warfighter are continually improved upon increasing the level of integration, standardization and effective employment in maritime battle space dominance.   |  |  |         |   |             |               |

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|--|------------------------|--------------------------------|-------------|---------|------------|--|------------|--------------|------------|---|------------|---------------------|------------------|------------|--------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy |                        |                                |             |         |            |  |            |              |            |   |            | Date: February 2015 |                  |            |                          |
| Appropriation/Budget Activity<br>1319 / 4              |                        |                                |             |         |            | R-1 Program Element (Number/Name)<br>PE 0603261N / <i>Tactical Airborne Reconnaissance</i> |            |              |            | Project (Number/Name)<br>2467 / <i>UAV Conops</i> |            |                     |                  |            |                          |
| Product Development (\$ in Millions)                   |                        |                                |             | FY 2014 |            | FY 2015  |            | FY 2016 Base |            | FY 2016 OCO                                       |            | FY 2016 Total       |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost   | Award Date | Cost         | Award Date | Cost  | Award Date | Cost                | Cost To Complete | Total Cost | Target Value of Contract |
| Ship Integration                                       | C/CPFF                 | L-3 Titan : Marlton, NJ        | 8.777       | 0.919   | Jan 2014   | 0.856  | Jan 2015   | -            |            | -   |            | -                   | -                | 10.552     | 10.552                   |
| Systems Engineering                                    | WR                     | NAWCAD : Pax River, MD         | 2.935       | 0.551   | Dec 2013   | 0.243  | Dec 2014   | -            |            | -   |            | -                   | -                | 3.729      | -                        |
| Prior year Prod Dev no longer funded in the FYDP       | Various                | Various : Various              | 3.350       | -       |            | -  |            | -            |            | -   |            | -                   | -                | 3.350      | -                        |
| Subtotal   |                        |                                | 15.062      | 1.470   |            | 1.099  |            | -            |            | -   |            | -                   | -                | 17.631     | -                        |
| Support (\$ in Millions)                               |                        |                                |             | FY 2014 |            | FY 2015  |            | FY 2016 Base |            | FY 2016 OCO                                       |            | FY 2016 Total       |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost   | Award Date | Cost         | Award Date | Cost  | Award Date | Cost                | Cost To Complete | Total Cost | Target Value of Contract |
| Development Support                                    | Various                | Various : Various              | 13.894      | 0.191   | Dec 2013   | 0.145  | Dec 2014   | -            |            | -   |            | -                   | -                | 14.230     | 14.230                   |
| Software Development                                   | MIPR                   | JTC/SIL : Redstone Arsenal, AL | 9.531       | -       |            | 1.824  | Jan 2015   | -            |            | -   |            | -                   | -                | 11.355     | 11.355                   |
| Software Development                                   | MIPR                   | TACOM : Warren, MI             | 0.000       | 1.745   | Jan 2014   | -  |            | -            |            | -   |            | -                   | -                | 1.745      | 1.745                    |
| Studies & Demonstrations                               | WR                     | NAWCAD : Pax River, MD         | 3.646       | 0.574   | Dec 2013   | 0.234  | Dec 2014   | 0.234        | Dec 2015   | -   |            | 0.234               | Continuing       | Continuing | Continuing               |
| Standards Development                                  | C/CPFF                 | Engility : Lexington Park, MD  | 0.000       | -       |            | -  |            | 1.235        | Jan 2016   | -   |            | 1.235               | -                | 1.235      | 1.235                    |
| Prior year Support no longer funded in the FYDP        | Various                | Various : Various              | 2.830       | -       |            | -  |            | -            |            | -   |            | -                   | -                | 2.830      | -                        |
| Subtotal   |                        |                                | 29.901      | 2.510   |            | 2.203  |            | 1.469        |            | -   |            | 1.469               | -                | -          | -                        |
| Test and Evaluation (\$ in Millions)                   |                        |                                |             | FY 2014 |            | FY 2015  |            | FY 2016 Base |            | FY 2016 OCO                                       |            | FY 2016 Total       |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost   | Award Date | Cost         | Award Date | Cost  | Award Date | Cost                | Cost To Complete | Total Cost | Target Value of Contract |
| Prior year Test & Eval no longer funded in the FYDP    | Various                | Various : Various              | 2.627       | -       |            | -  |            | -            |            | -   |            | -                   | -                | 2.627      | -                        |
| Subtotal   |                        |                                | 2.627       | -       |            | -  |            | -            |            | -   |            | -                   | -                | 2.627      | -                        |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Navy</b> |  |  |  |  |  |   |  |  |  |  |  | <b>Date:</b> February 2015 |  |  |  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                  |  |  |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0603261N / <i>Tactical Airborne Reconnaissance</i> |  |  |  | <b>Project (Number/Name)</b><br>2467 / <i>UAV Conops</i> |  |                            |  |  |  |

  

| <b>Management Services (\$ in Millions)</b>          |                                   |   |                    | <b>FY 2014</b> |                   | <b>FY 2015</b> |                   | <b>FY 2016 Base</b> |                   | <b>FY 2016 OCO</b> |                   | <b>FY 2016 Total</b> |                         |                   |                                 |
|--|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Program Management Support                           | Various                           | Various : Various                         | 3.503              | 0.540          | Dec 2013          | 0.540          | Dec 2014          | 0.322               | Jan 2016          | -                  |                   | 0.322                | -                       | 4.905             | 4.905                           |
| Government Engineering Support                       | WR                                | NAWCAD : Pax River, MD                    | 6.105              | 0.687          | Dec 2013          | 1.423          | Dec 2014          | 1.291               | Dec 2015          | -                  |                   | 1.291                | Continuing              | Continuing        | Continuing                      |
| Travel   | WR                                | NAVAIR HQ : Pax River, MD                 | 0.496              | 0.050          | Nov 2013          | 0.005          | Nov 2014          | 0.005               | Nov 2015          | -                  |                   | 0.005                | Continuing              | Continuing        | Continuing                      |
| Prior year Mgmt Services no loner funded in the FYDP | Various                           | Various : Various                         | 1.050              | -              |                   | -              |                   | -                   |                   | -                  |                   | -                    | -                       | 1.050             | -                               |
| <b>Subtotal</b>                                      |                                   |   | 11.154             | 1.277          |                   | 1.968          |                   | 1.618               |                   | -                  |                   | 1.618                | -                       | -                 | -                               |

  

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| <b>Remarks</b><br>Travel contract type is TO. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                            | <b>Prior Years</b> | <b>FY 2014</b> | <b>FY 2015</b> | <b>FY 2016 Base</b> | <b>FY 2016 OCO</b> | <b>FY 2016 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|----------------------------|--------------------|----------------|----------------|---------------------|--------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Project Cost Totals</b> | 58.744             | 5.257          | 5.270          | 3.087               | -                  | 3.087                | -                       | -                 | -                               |

  

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| <b>Remarks</b> |  |  |  |  |  |  |  |  |  |
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PE 0603261N: *Tactical Airborne Reconnaissance*  
Navy

R-1 Line #31

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| Appropriation/Budget Activity<br>1319 / 4 | R-1 Program Element (Number/Name)<br>PE 0603261N / <i>Tactical Airborne<br/>Reconnaissance</i> | Project (Number/Name)<br>2467 / <i>UAV Conops</i> |
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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Navy |   |  | <b>Date:</b> February 2015 |
| <b>Appropriation/Budget Activity</b><br>1319 / 4              | <b>R-1 Program Element (Number/Name)</b><br>PE 0603261N / <i>Tactical Airborne Reconnaissance</i> | <b>Project (Number/Name)</b><br>2467 / <i>UAV Conops</i> |                            |

Schedule Details

| Events by Sub Project  | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| <b>UAV CONOPS</b>  |         |      |         |      |
| Naval Interoperability and Standardization: Naval UASs interoperability on Joint Service and International Standardization | 1       | 2014 | 4       | 2020 |