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

|                                                                                                                                                 |                                                                                                                 |
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| <b>Appropriation/Budget Activity</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy I BA 7: Operational Systems Development</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N / <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i> |
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| COST (\$ in Millions)                                    | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|----------------------------------------------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element                                    | 1,439.664   | 35.309  | 0.000   | 0.000        | -           | 0.000         | 0.000   | 0.000   | 0.000   | 0.000   | 0.000            | 1,474.973  |
| 3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i> | 1,439.664   | 35.309  | 0.000   | 0.000        | -           | 0.000         | 0.000   | 0.000   | 0.000   | 0.000   | 0.000            | 1,474.973  |

**Program MDAP/MAIS Code:** P388

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

The 2005 Quadrennial Defense Review published February 2006 and OSD Advanced Technology & Logistics Executive Committee Memorandum of February 2006 supported direction to restructure the Joint Unmanned Combat Air System (UCAS) program into a new Navy UCAS program. The Navy UCAS program will develop an unmanned, longer-range, carrier-based aircraft capable of being air-refueled to provide greater standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The Navy was directed to demonstrate carrier operations, including Autonomous Aerial Refueling, of a Low Observable (LO) planform UCAS and to mature required technologies to a Technology Readiness Level-6; which, is required for a potential follow on acquisition program.

The Navy UCAS, designed for autonomous launch and recovery as well as operations in the Carrier Control Area, is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, LO planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as Primary Flight Control displays, Landing Safety Officer displays, and Carrier Air Traffic Control Center stations.

The Navy UCAS program will be structured to match program resources to United States Navy objectives and constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. Candidate Technology Maturation efforts include transformational communications, advanced integrated propulsion, aircraft carrier suitable materials, LO sensors and apertures, sense and avoid functionality (in an LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs are being developed as a result of the demonstration. Maturation of candidate technologies support the evaluation of alternatives needed for a future milestone decision.

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2017 Navy | <b>Date:</b> February 2016 |
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| <b>Appropriation/Budget Activity</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy I BA 7: Operational Systems Development</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N I <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i> |
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| <b>B. Program Change Summary (\$ in Millions)</b> | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017 Base</b> | <b>FY 2017 OCO</b> | <b>FY 2017 Total</b> |
|---------------------------------------------------|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget                       | 35.877         | 0.000          | 0.000               | -                  | 0.000                |
| Current President's Budget                        | 35.309         | 0.000          | 0.000               | -                  | 0.000                |
| Total Adjustments                                 | -0.568         | 0.000          | 0.000               | -                  | 0.000                |
| • Congressional General Reductions                | -              | -              |                     |                    |                      |
| • Congressional Directed Reductions               | -              | -              |                     |                    |                      |
| • Congressional Rescissions                       | -              | -              |                     |                    |                      |
| • Congressional Adds                              | -              | -              |                     |                    |                      |
| • Congressional Directed Transfers                | -              | -              |                     |                    |                      |
| • Reprogrammings                                  | -              | -              |                     |                    |                      |
| • SBIR/STTR Transfer                              | -0.568         | 0.000          |                     |                    |                      |

**Change Summary Explanation**

Technical: N/A

Schedule: N/A

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|                                                                    |                    |                |                |                     |                                                                                                          |                      |                |                |                                                                                    |                            |                         |                   |
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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Navy |                    |                |                |                     |                                                                                                          |                      |                |                |                                                                                    | <b>Date:</b> February 2016 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>1319 / 7                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N / Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev |                      |                |                | <b>Project (Number/Name)</b><br>3178 / Unmanned Combat Air System CV-Demo (UCAS-D) |                            |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017 Base</b> | <b>FY 2017 OCO</b>                                                                                       | <b>FY 2017 Total</b> | <b>FY 2018</b> | <b>FY 2019</b> | <b>FY 2020</b>                                                                     | <b>FY 2021</b>             | <b>Cost To Complete</b> | <b>Total Cost</b> |
| 3178: Unmanned Combat Air System CV-Demo (UCAS-D)                  | 1,439.664          | 35.309         | 0.000          | 0.000               | -                                                                                                        | 0.000                | 0.000          | 0.000          | 0.000                                                                              | 0.000                      | 0.000                   | 1,474.973         |
| Quantity of RDT&E Articles                                         |                    | -              | -              | -                   | -                                                                                                        | -                    | -              | -              | -                                                                                  | -                          |                         |                   |

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

The Navy Unmanned Combat Air System (UCAS), designed for autonomous launch and recovery as well as operations in the Carrier Control Area, is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, Low Observable (LO) planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as Primary Flight Control displays, Landing Safety Officer (LSO) displays, and Carrier Air Traffic Control Center (CATCC) stations.

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

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017 Base</b> | <b>FY 2017 OCO</b> | <b>FY 2017 Total</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------------------|--------------------|----------------------|
| <b>Title:</b> Product Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 29.473         | 0.000          | 0.000               | 0.000              | 0.000                |
| <b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -              | -              | -                   | -                  | -                    |
| <b>Description:</b> The primary effort in the Navy UCAS program is design, development, integration and validation of Air Vehicle Segment, MCS and government led Aircraft Carrier Segment leading to a Carrier demonstration of an unmanned, LO planform UCAS system, and development of internal/external interface documents. In addition, design and development of hardware/software to support Autonomous Aerial Refueling (AAR) will be conducted. Shipboard evaluation of the Navy UCAS includes integration of the Navy UCAS with shipboard systems such as Primary Flight Control displays, LSO displays and CATCC stations. |                |                |                     |                    |                      |
| <b>FY 2015 Accomplishments:</b><br>Continued demonstration and integration efforts as directed by Chief of Naval Operations and Secretary of the Navy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                |                     |                    |                      |
| <b>FY 2016 Plans:</b><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                     |                    |                      |
| <b>FY 2017 Base Plans:</b><br>N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                |                     |                    |                      |
| <b>FY 2017 OCO Plans:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                |                     |                    |                      |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Navy |                                                                                                          | <b>Date:</b> February 2016                                                         |
| <b>Appropriation/Budget Activity</b><br>1319 / 7                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N / Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev | <b>Project (Number/Name)</b><br>3178 / Unmanned Combat Air System CV-Demo (UCAS-D) |

| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                                      | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017 Base</b> | <b>FY 2017 OCO</b> | <b>FY 2017 Total</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------------------|--------------------|----------------------|
| N/A                                                                                                                                                                                                                                                                                                                                          |                |                |                     |                    |                      |
| <b>Title:</b> Test and Evaluation Support<br><br><b>Articles:</b><br><br><b>FY 2015 Accomplishments:</b><br>Continued UCAS Demonstration objectives as directed by Chief of Naval Operations and Secretary of the Navy.<br><br><b>FY 2016 Plans:</b><br>N/A<br><br><b>FY 2017 Base Plans:</b><br>N/A<br><br><b>FY 2017 OCO Plans:</b><br>N/A | 4.746          | 0.000          | 0.000               | 0.000              | 0.000                |
|                                                                                                                                                                                                                                                                                                                                              | -              | -              | -                   | -                  | -                    |
| <b>Title:</b> Management<br><br><b>Articles:</b><br><br><b>FY 2015 Accomplishments:</b><br>Government management, engineering, and logistics support.<br><br><b>FY 2016 Plans:</b><br>N/A<br><br><b>FY 2017 Base Plans:</b><br>N/A<br><br><b>FY 2017 OCO Plans:</b><br>N/A                                                                   | 1.090          | 0.000          | 0.000               | 0.000              | 0.000                |
|                                                                                                                                                                                                                                                                                                                                              | -              | -              | -                   | -                  | -                    |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                            | 35.309         | 0.000          | 0.000               | 0.000              | 0.000                |

|                                                          |
|----------------------------------------------------------|
| <b>C. Other Program Funding Summary (\$ in Millions)</b> |
| N/A                                                      |
| <b>Remarks</b>                                           |
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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Navy |                                                                                                                 | <b>Date:</b> February 2016                                                                |
| <b>Appropriation/Budget Activity</b><br>1319 / 7                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N / <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i> | <b>Project (Number/Name)</b><br>3178 / <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i> |

**D. Acquisition Strategy**

In the 2005 Quadrennial Defense Review, the Navy was directed to restructure the Joint Unmanned Combat Air System (UCAS) program and develop an unmanned, longer-range carrier-based aircraft capable of being air-refueled to provide greater aircraft carrier standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The primary goal is risk reduction for carrier integration while developing the critical data necessary to support a potential follow on acquisition milestone decision. The Navy UCAS effort will focus on designing, developing, and evaluating the core capabilities which safely demonstrate carrier interoperability. Currently, primary hardware development for the Navy UCAS effort is being performed under a Federal Acquisition Regulation based, cost plus incentive fee-type contract competitively awarded to a single contractor.

**E. Performance Metrics**

Completed airworthiness and envelope expansion testing. Conducted shore-based carrier suitability testing. Conducted F/A-18D surrogate aircraft testing with Nimitz class aircraft carrier. Conducted at sea flight test of X-47B air vehicles. Demonstrated Autonomous Aerial Refueling.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy |                        |                                   |             |                                                              |            |         |            |                                                    |            |             |            | Date: February 2016 |                  |            |                          |
|--------------------------------------------------------|------------------------|-----------------------------------|-------------|--------------------------------------------------------------|------------|---------|------------|----------------------------------------------------|------------|-------------|------------|---------------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |                                   |             | R-1 Program Element (Number/Name)                            |            |         |            | Project (Number/Name)                              |            |             |            |                     |                  |            |                          |
| 1319 / 7                                               |                        |                                   |             | PE 0604402N / Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev |            |         |            | 3178 / Unmanned Combat Air System CV-Demo (UCAS-D) |            |             |            |                     |                  |            |                          |
| Product Development (\$ in Millions)                   |                        |                                   |             | FY 2015                                                      |            | FY 2016 |            | FY 2017 Base                                       |            | FY 2017 OCO |            | FY 2017 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 |
| Aviation/Ship Integration                              | WR                     | NAWCAD : MD                       | 109.714     | 3.214                                                        | Nov 2014   | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 112.928    | -                        |
| Air Vehicle Integration                                | C/CPIF                 | Northrop Grumman Corporation : CA | 47.730      | 19.664                                                       | Nov 2014   | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 67.394     | 67.394                   |
| Systems Engineering                                    | WR                     | NAWCAD : MD                       | 63.654      | 6.433                                                        | Nov 2014   | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 70.087     | -                        |
| Product Development                                    | Various                | Various : Various                 | 117.236     | 0.162                                                        | Dec 2014   | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 117.398    | -                        |
| Prior year Prod Dev cost no longer funded in the FYDP  | Various                | Various : Various                 | 945.517     | 0.000                                                        |            | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 945.517    | -                        |
| <b>Subtotal</b>                                        |                        |                                   | 1,283.851   | 29.473                                                       |            | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 1,313.324  | -                        |
| Support (\$ in Millions)                               |                        |                                   |             | FY 2015                                                      |            | FY 2016 |            | FY 2017 Base                                       |            | FY 2017 OCO |            | FY 2017 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 Support cost no longer funded in the FYDP   | Various                | Various : Various                 | 20.861      | 0.000                                                        |            | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 20.861     | -                        |
| <b>Subtotal</b>                                        |                        |                                   | 20.861      | 0.000                                                        |            | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 20.861     | -                        |
| Test and Evaluation (\$ in Millions)                   |                        |                                   |             | FY 2015                                                      |            | FY 2016 |            | FY 2017 Base                                       |            | FY 2017 OCO |            | FY 2017 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 |
| Developmental Test & Evaluation                        | WR                     | NAWCAD : MD                       | 49.446      | 4.278                                                        | Nov 2014   | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 53.724     | -                        |
| Test & Evaluation                                      | Various                | Various : Various                 | 1.765       | 0.468                                                        | Nov 2014   | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 2.233      | -                        |
| Prior year T&E cost no longer funded in the FYDP       | Various                | Various : Various                 | 10.297      | 0.000                                                        |            | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 10.297     | -                        |
| <b>Subtotal</b>                                        |                        |                                   | 61.508      | 4.746                                                        |            | 0.000   |            | 0.000                                              |            | -           |            | 0.000               | 0.000            | 66.254     | -                        |

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

|                                                  |                                                                                                          |                                                                                    |
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| <b>Appropriation/Budget Activity</b><br>1319 / 7 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N / Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev | <b>Project (Number/Name)</b><br>3178 / Unmanned Combat Air System CV-Demo (UCAS-D) |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|

| <b>Management Services (\$ in Millions)</b>       |                        |                                |             | FY 2015 |            | FY 2016 |            | FY 2017 Base |            | FY 2017 OCO |            | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---------------------------------------------------|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                                | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Contractor SEPM Support                           | C/CPIF                 | Various : Various              | 25.571      | 0.066   | Jan 2015   | 0.000   |            | 0.000        |            | -           |            | 0.000         | 0.000            | 25.637     | 25.637                   |
| Government Engineering Support                    | WR                     | NAWCAD : MD                    | 26.631      | 0.874   | Nov 2014   | 0.000   |            | 0.000        |            | -           |            | 0.000         | 0.000            | 27.505     | -                        |
| Program Management Support                        | WR                     | NAWCAD : MD                    | 18.496      | 0.150   | Nov 2014   | 0.000   |            | 0.000        |            | -           |            | 0.000         | 0.000            | 18.646     | -                        |
| Prior Year Mgmt cost no longer funded in the FYDP | Various                | Various : Various              | 2.746       | 0.000   |            | 0.000   |            | 0.000        |            | -           |            | 0.000         | 0.000            | 2.746      | -                        |
| <b>Subtotal</b>                                   |                        |                                | 73.444      | 1.090   |            | 0.000   |            | 0.000        |            | -           |            | 0.000         | 0.000            | 74.534     | -                        |

|                            | Prior Years | FY 2015   | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |   |
|----------------------------|-------------|-----------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|---|
| <b>Project Cost Totals</b> |             | 1,439.664 | 35.309  | 0.000        | 0.000       | -             | 0.000            | 0.000      | 1,474.973                | - |

**Remarks**  
FY15 funding continued demonstration and integration efforts as directed by Chief of Naval Operations and Secretary of Navy.

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

|                                                  |                                                                                                                 |                                                                                           |
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| <b>Appropriation/Budget Activity</b><br>1319 / 7 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N / <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i> | <b>Project (Number/Name)</b><br>3178 / <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i> |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| Unmanned Combat Air Vehicle (UCAV) ADV CP/PROTO DEV                   | FY 2015                                                               |    |    |    | FY 2016 |    |    |    | FY 2017 |    |    |    | FY 2018 |    |    |    | FY 2019 |    |    |    | FY 2020 |    |    |    | FY 2021 |    |    |    |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------|----|----|----|---------|----|----|----|---------|----|----|----|---------|----|----|----|---------|----|----|----|---------|----|----|----|---------|----|----|----|
|                                                                       | 1Q                                                                    | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q | 4Q |
| <b>Systems Development</b>                                            |                                                                       |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Ship Integration                                                      | Ship Integration and Installations (Build 2)                          |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Autonomous Aerial Refueling (AAR)                                     | System Integration                                                    |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
|                                                                       | Surrogate/Air Vehicle Flight Test                                     |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| <b>Test &amp; Evaluation</b>                                          |                                                                       |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Surrogate Testing                                                     | Surrogate Testing                                                     |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Airworthiness Testing                                                 |                                                                       |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Land Based Carrier Control Area, Catapult Launch & Arrestment Testing | Land Based Carrier Control Area, Catapult Launch & Arrestment Testing |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
| Sea Trials                                                            | Sea Trials                                                            |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |
|                                                                       | CVN Integration Ops<br>▼                                              |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |         |    |    |    |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Navy |                                                                                                                 | <b>Date:</b> February 2016                                                                |
| <b>Appropriation/Budget Activity</b><br>1319 / 7              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604402N / <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i> | <b>Project (Number/Name)</b><br>3178 / <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i> |

Schedule Details

| Events by Sub Project                                                                                                                                           | Start   |      | End     |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|---------|------|
|                                                                                                                                                                 | Quarter | Year | Quarter | Year |
| <b><i>Unmanned Combat Air Vehicle (UCAV) ADV CP/PROTO DEV</i></b>                                                                                               |         |      |         |      |
| Systems Development: Ship Integration: Build 2                                                                                                                  | 1       | 2015 | 1       | 2015 |
| Systems Development: Autonomous Aerial Refueling (AAR): System Integration - AAR                                                                                | 1       | 2015 | 3       | 2015 |
| Systems Development: Autonomous Aerial Refueling (AAR): Surrogate/Air Vehicle Flight Test - AAR                                                                 | 1       | 2015 | 4       | 2015 |
| Test & Evaluation: Surrogate Testing: Surrogate Testing                                                                                                         | 1       | 2015 | 4       | 2015 |
| Test & Evaluation: Land Based Carrier Control Area, Catapult Launch & Arrestment Testing: Land Based Carrier Control Area, Catapult Launch & Arrestment Testing | 1       | 2015 | 2       | 2016 |
| Test & Evaluation: Sea Trials: Sea Trials                                                                                                                       | 1       | 2015 | 1       | 2015 |
| Test & Evaluation: Sea Trials: CVN Integration Ops                                                                                                              | 1       | 2015 | 1       | 2015 |

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