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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	438.199	529.250	548.482	-	548.482	681.775	228.229	165.480	233.161	Continuing	Continuing
4020: <i>BAMS UAS</i>	438.199	529.250	548.482	-	548.482	681.775	228.229	165.480	233.161	Continuing	Continuing

A. Mission Description and Budget Item Justification

RQ-4 Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS)

The BAMS RQ-4 is a High Altitude-Long Endurance UAS designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

The RQ-4 air vehicle is based on Northrop Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five orbits inside and outside continental United States, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infra-red and Electronic Support Measures systems. Additionally, the RQ-4 will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCENet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships.

RQ-4 will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported Combatant Command or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture. The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment. Additionally, BAMS UAS will be a FORCENet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy Information Backbone.

This PE includes funding in FY15-16 for future incremental development in support of BAMS Increment 3 signals intelligence (SIGINT) capability.

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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	439.010	529.250	540.992	-	540.992
Current President's Budget	438.199	529.250	548.482	-	548.482
Total Adjustments	-0.811	-	7.490	-	7.490
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.007	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	9.998	-	9.998
• Section 219 Reprogramming	-0.794	-	-	-	-
• Rate/Misc Adjustments	-	-	-2.508	-	-2.508
• Congressional General Reductions Adjustments	-0.010	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4020: <i>BAMS UAS</i>	438.199	529.250	548.482	-	548.482	681.775	228.229	165.480	233.161	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

RQ-4 Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS).

RQ-4 is a High Altitude-Long Endurance UAS designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft, and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

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RQ-4 will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported Combatant Command or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture. The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment. Additionally, RQ-4 will be a FORCENet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy Information Backbone.

The RQ-4 system is an evolutionary based acquisition, using an incremental development approach. Two Mission Need Statements (MNSs) support the requirement; 1) BAMS and Littoral Armed ISR MNS, and 2) Long Endurance, Reconnaissance, Surveillance and Target Acquisition Capability MNS. The BAMS UAS Capability Development Document was approved May 2007 by the Joint Requirements Oversight Council.

This PE includes funding in FY15-16 for future incremental development in support of BAMS Increment 3 signals intelligence (SIGINT) capability.

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

	FY 2010	FY 2011	FY 2012
Title: Product Development	416.180	499.042	512.196
Articles:	0	0	0

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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>Description: Awarded contract in FY08 to initiate the Engineering and Manufacturing Development (EMD) phase effort. The Prime Contractor is responsible for overall system development and performance, as well as associated management, engineering and logistics activities.</p> <p>FY 2010 Accomplishments: Continued EMD, including Government engineering support related to EMD.</p> <p>FY 2011 Plans: Continue EMD, including Government engineering support related to EMD.</p> <p>FY 2012 Plans: Continue EMD, including purchase of long lead materials in support of FY13 Low Rate Initial Production vehicles and Government engineering support related to EMD.</p>				
<p>Title: ILS, Support, Studies & Analysis</p> <p align="right">Articles:</p>		11.928 0	12.625 0	14.105 0
<p>Description: Integrated Logistics Support, Studies and Analysis.</p> <p>FY 2010 Accomplishments: Continued integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.</p> <p>FY 2011 Plans: Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.</p> <p>FY 2012 Plans: Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.</p>				
<p>Title: Program Management</p> <p align="right">Articles:</p>		5.434 0	6.600 0	6.854 0
<p>Description: Program Management Support and travel.</p>				

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

	FY 2010	FY 2011	FY 2012
<p><i>FY 2010 Accomplishments:</i> Continued the following: Program Management Support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and Joint and International Cooperation efforts.</p> <p><i>FY 2011 Plans:</i> Continue the following: Program Management Support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and Joint and International Cooperation efforts.</p> <p><i>FY 2012 Plans:</i> Continue the following: Program Management Support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and Joint and International Cooperation efforts.</p>			
<p><i>Title:</i> Test & Evaluation (T&E)</p> <p align="right"><i>Articles:</i></p>	4.657 0	10.983 0	15.327 0
<p><i>Description:</i> T&E efforts.</p> <p><i>FY 2010 Accomplishments:</i> Continued test and evaluation support activities to allow test and fielding of the BAMS UAS.</p> <p><i>FY 2011 Plans:</i> Continue test and evaluation support activities to allow test and fielding of the BAMS UAS.</p> <p><i>FY 2012 Plans:</i> Continue test and evaluation support activities to allow test and fielding of the BAMS UAS.</p>			
Accomplishments/Planned Programs Subtotals	438.199	529.250	548.482

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE/0305205N: <i>BAMS UAS</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	588.909

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• APN-4/044200: <i>RQ-4 UAV</i> <i>(BAMS UAV)</i>	0.000	0.000	0.000	0.000	0.000	48.166	582.210	585.724	609.629	7,851.816	9,677.545
• APN-6/060510: <i>BAMS UAV</i>	0.000	0.000	0.000	0.000	0.000	0.000	29.520	90.326	91.809	1,166.700	1,378.355
• MILCON/0816376N: <i>Broad Area</i> <i>Maritime Surveillance T&E Facility</i>	0.000	42.211	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.211
• MILCON/0815976N: <i>Facilities</i> <i>New Footprint</i>	0.000	0.000	4.482	0.000	4.482	77.930	76.139	108.843	35.224	76.054	378.672

D. Acquisition Strategy

The BAMS UAS is an evolutionary-based acquisition, using an incremental development approach. During the pre-Milestone B phase, the program performed technical risk reduction through studies and demonstrations, EMD contract preparation, and Milestone B documentation development activities. Milestone B occurred on 8 April 2008 and EMD award occurred on 22 April 2008. The EMD contract was based on a competitive selection process for a Prime Contractor.

The BAMS UAS program office is pursuing joint efficiency with the Air Force on the Global Hawk UAS. However, the integration of the BAMS UAS into the Maritime Patrol Reconnaissance Force and the unique maritime sensors employed dictate a Navy-led acquisition program focused on joint efficiencies, where possible.

E. Performance Metrics

Successfully achieve Critical Design Review, Flight Readiness Review, Milestone C, Integrated Test, and Operational Evaluation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	Northrop Grumman: Bethpage, NY	379.674	458.608	Nov 2010	465.498	Nov 2011	-		465.498	1,043.142	2,346.922	2,346.922
Systems Engineering	Various	Various: Various	2.408	0.961	Nov 2010	1.278	Nov 2011	-		1.278	1.071	5.718	
Award Fees	C/CPAF	Northrop Grumman: Bethpage, NY	6.882	10.234	Dec 2011	12.533	Dec 2011	-		12.533	38.452	68.101	68.101
Systems Engineering	WR	NAWC-AD: Patuxent River, MD	25.937	27.916	Nov 2010	31.548	Nov 2011	-		31.548	66.119	151.520	
Systems Engineering	WR	NAWC-WD: China Lake, CA	1.279	1.323	Nov 2010	1.339	Nov 2011	-		1.339	4.428	8.369	
Subtotal			416.180	499.042		512.196		-		512.196	1,153.212	2,580.630	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various: Various	2.825	3.855	Nov 2010	3.933	Nov 2011	-		3.933	26.217	36.830	
Integrated Logistics Support	Various	Various: Various	0.305	0.930	Nov 2010	1.799	Nov 2011	-		1.799	3.761	6.795	
Development Support	MIPR	CECOM: Ft. Monmouth, NJ	3.500	2.570	Dec 2010	2.362	Dec 2011	-		2.362	8.192	16.624	
Integrated Logistics Support	WR	NAWC-AD: Patuxent River, MD	3.521	4.225	Nov 2010	4.955	Nov 2011	-		4.955	15.123	27.824	
Integrated Logistics Support	WR	NAWC-TSD: Orlando, FL	1.009	1.045	Nov 2010	1.056	Nov 2011	-		1.056	4.334	7.444	
Prior Years Support	Various	Various: Various	0.768	-		-		-		-	0.000	0.768	
Subtotal			11.928	12.625		14.105		-		14.105	57.627	96.285	

Remarks
Prior to FY10, BAMS was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh

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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various:Various	1.045	3.876	Nov 2010	6.859	Nov 2011	-		6.859	33.335	45.115	
Developmental Test & Evaluation	WR	NAWC-AD:Patuxent River, MD	3.612	7.107	Nov 2010	8.468	Nov 2011	-		8.468	29.012	48.199	
Operational Test & Evaluation	Various	Not Specified:Not Specified	-	-		-		-		-	22.949	22.949	
Subtotal			4.657	10.983		15.327		-		15.327	85.296	116.263	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	Mitre:McLean, VA	0.514	1.600	Nov 2010	1.700	Nov 2011	-		1.700	3.373	7.187	7.187
Program Management Support	Various	Various:Various	0.783	0.706	Nov 2010	0.722	Nov 2011	-		0.722	1.517	3.728	
Travel	WR	Various:Various	0.322	0.300	Nov 2010	0.350	Nov 2011	-		0.350	0.846	1.818	
Program Management Support	C/CPFF	Ausley:Lexington Park, MD	2.458	2.513	Dec 2010	2.569	Dec 2011	-		2.569	5.010	12.550	12.550
Program Management Support	C/CPFF	Bowhead:Alexandria, VA	1.357	1.481	Dec 2010	1.513	Dec 2011	-		1.513	2.952	7.303	7.303
Subtotal			5.434	6.600		6.854		-		6.854	13.698	32.586	

Remarks
Travel funding vehicle type is TO.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		438.199	529.250		548.482		-	548.482	1,309.833	2,825.764	

Remarks
Prior to FY10, BAMS was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4020				
Acquisition Milestones: Milestone C	3	2013	3	2013
Acquisition Milestones: Full Rate Production	1	2016	1	2016
Acquisition Milestones: Initial Operational Capability	1	2016	1	2016
System Development: Systems Demonstration and Development	1	2010	3	2016
System Development: Reviews: Preliminary Design Review	2	2010	2	2010
System Development: Reviews: Critical Design Review	2	2011	2	2011
System Development: Reviews: Flight Readiness Review	2	2012	2	2012
Test & Evaluation Activities: Integrated Test (Combined/Developmental/Operational)	3	2012	4	2014
Test & Evaluation Activities: Operational Test Readiness Review	1	2015	1	2015
Test & Evaluation Activities: OPEVAL	2	2015	3	2015
Production Milestones: Contracts: Low Rate Initial Production 1 Contract Award	3	2013	3	2013
Production Milestones: Contracts: Low Rate Initial Production 2 Contract Award	3	2014	3	2014
Production Milestones: Contracts: Low Rate Initial Production 3 Contract Award	2	2015	2	2015
Production Milestones: Contracts: Full Rate Production Contract Award	2	2016	2	2016
Production Milestones: Deliveries: System Development and Demonstartion Deliveries	3	2012	4	2012
Production Milestones: Deliveries: Low Rate Initial Production 1 Delivery	4	2014	2	2015
Production Milestones: Deliveries: Low Rate Initial Production 2 Delivery	3	2015	3	2016
Production Milestones: Deliveries: Low Rate Initial Production 3 Delivery	3	2016	4	2016