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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0305231N: MQ-8 UAV							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	67.048	108.248	99.600	-	99.600	49.200	12.200	13.400	-	0.000	349.696
2768: VTUAV	67.048	108.248	99.600	-	99.600	49.200	12.200	13.400	-	0.000	349.696

A. Mission Description and Budget Item Justification

MQ-8 Unmanned Aerial Vehicle Joint Military Intelligence Program.

The MQ-8 (popular name "Fire Scout") Vertical Take-off Unmanned Aerial Vehicle (VTUAV) provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8 can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The MQ-8 launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, the incorporation of weapons, the incorporation of an electro-optical/infra-red/laser designator-laser range finder modular mission payload, radar and other specialty payloads. Interoperability is achieved through the use of the Tactical Control System software in the ground control station, and through the use of the Tactical Common Data Link. The data from the MQ-8 will be provided through standard Department of Defense Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	10.665	108.248	77.630	-	77.630
Current President's Budget	67.048	108.248	99.600	-	99.600
Total Adjustments	56.383	-	21.970	-	21.970
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	56.437	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	21.853	-	21.853
• Rate/Misc Adjustments	-	-	0.117	-	0.117
• Congressional General Reductions Adjustments	-0.054	-	-	-	-

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0305231N: MQ-8 UAV
<u>Change Summary Explanation</u> Technical: Navy VTUAV restructured to transition on-going Rapid Deployment Capability (RDC) initiatives for MQ-8C Endurance Upgrade, radar, weapons, and Special Operations Forces ISR payloads into VTUAV program. Schedule: Acquisition milestones have been adjusted due to technical changes: - Moved MQ-8 Full Rate Production (FRP) from 2Q FY15 to 4Q FY12. - MQ-8 Engineering Change Proposal (ECP) Initial Operational Capability deleted due to Rapid Deployment Capability (RDC) process. - Littoral Combat Ship Integration added to System Development. - System Development efforts updated to reflect Radar, Weapons and other payloads RDC. - Weapons Review name changed to MQ-8C RDC to support radar, weapons, and SOF Intelligence, Surveillance and Reconnaissance payloads. - With transition of ongoing payload initiatives, reviews for System Readiness Review, Preliminary Design Review, Critical Design Review and Quick Reaction Assessments. - Specialty Payloads Review added to support ongoing payload initiatives. - With the change in FRP from 2Q FY15 to 4Q FY12 award and delivery dates have been adjusted. - Production milestones and deliveries were updated to reflect MQ-8 RDC and FRP milestones.		

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0305231N: MQ-8 UAV				PROJECT 2768: VTUAV			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
2768: VTUAV	67.048	108.248	99.600	-	99.600	49.200	12.200	13.400	-	0.000	349.696
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The MQ-8 (popular name "Fire Scout") Vertical Take-off Unmanned Aerial Vehicle (VTUAV) provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8 can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including voice relay). The MQ-8 launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, the incorporation of weapons, the incorporation of an electro-optical/infra-red laser designator-laser range finder modular mission payload, radar and other specialty payloads. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8 will be provided through standard DoD Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance system architectures and protocols.

The MQ-8 system is composed of air frames, avionics, software and associated spares and support equipment, electro-optical/infra-red/laser designator-range finder payloads, radar, weapons, automatic identification system, other payloads, Ground Control Stations (with TCS), aircraft and control station TCDL elements, and a Unmanned Aerial Vehicle Common Automatic Recovery System for automatic takeoff and landing from ships. The MQ-8 system will support the Surface Warfare, Mine Countermeasures Warfare and Anti-Submarine Warfare mission modules while operating on Littoral Combat Ship. The system will also be integrated on select surface combatants that are air capable and can host MQ-8 ancillary equipment. A limited number of land based control stations supplement the system to support shore based operations, such as predeployment, acceptance flights and expeditionary operations. These assets will also support depot level maintenance/post maintenance activities. MQ-8B aircraft with payload modification and Navy FFG and DDG ships will be used to support Special Operations Forces (SOF) Intelligence Surveillance and Reconnaissance (ISR) Joint Urgency of Need Statment and Navy Urgency of Need Statment near-term Rapid Deployment Capabilities.

MQ-8C endurance modification is an Rapid Deployment Capability (RDC) in response to a Special Operations Command Joint Urgent Operational Needs Statement (JUONS) to the existing system and in response to SOF, endorsed by US Africa Command, request for a sea based medium range, persistent ISR unmanned air system. Fire Scout will increase endurance, procure additional aircraft, and modify 12 additional ships in the Fiscal Year Defense Plan (FYDP) to support multiple orbits through FY19. The fundamental concept of the MQ-8C RDC is to leverage over 85% of the Fire Scout system hardware and 95% of the software. The MQ-8C RDC will use the existing Ground Control Station, Command and Control (C2) links, avionics, payloads, and logistics and FFG/DDG ships previously modified for Fire Scout. Three aircraft with spares will support developmental testing with a focus on flight quantities and performance along with hardware integration and software testing. The MQ-8C RDC will rehost the avionics, software and Command and Control (C2) sub-systems into a new airframe. A new airframe will provide the extended endurance and payload capacity to support the JUONS requirements for orbital coverage in specific Areas of Responsibility. The MQ-8C RDC will retain the baseline targeting capability with an Electro-Optic/Infrared payload and be compatible with the existing ground control stations and C2 architecture for operations at sea or from an expeditionary base ashore. The MQ-8C effort will also assess/integrate payloads that are specific to the SOF mission including electronic warfare, signals

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0305231N: MQ-8 UAV	PROJECT 2768: VTUAV		
intelligence and radar. The program will carry forward the payloads, such as Brite Star II, Coastal Battlefield Reconnaissance and Analysis, Automated Identification System, specialty payloads, weapons and radar planned for on-going MQ-8B RDCs. The MQ-8C increased endurance and payload capacity may allow the Navy to fully meet the Littoral Combat Ship (LCS) mission requirements with fewer aircraft lowering the Fire Scout's total ownership cost.					
A weapons Rapid Deployment Capability (RDC) and a radar RDC for Fire Scout is also part of the program in response to a Navy Urgent Operational Needs Statement.					
The Vertical Take-off Unmanned Aerial Vehicle (VTUAV) program is post Milestone C (MS C), which was approved in May 2007. MS C authorized entry into Low Rate Initial Production. A total of seven air vehicles and three control stations were previously purchased with Research Development Test & Evaluation funds under System Design and Development.					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2011	FY 2012	FY 2013
Title: Hardware and System Development			46.162	92.000	73.270
Articles:			0	0	0
FY 2011 Accomplishments: Continue incremental integration of MQ-8 Air Vehicles to support the Engineering and Manufacturing Development program. Start integration of radar. Continue integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload. Continue to support Littoral Combat Ship (LCS) integration. Integrate MQ-8 onto USS HALYBURTON and conduct testing with specialty payloads to deploy the system land base in Operation Enduring Freedom. Start Weapon integration RDC.					
FY 2012 Plans: Begin MQ-8C RDC integration. Continue development and testing of Special Operations Forces (SOF) provided payloads. Continue integration of the radar, weapons, specialty payloads, and COBRA payload. Complete Vertical Take-off Unmanned Air Vehicle (VTUAV) systems development. Continue to support LCS integration. Continue Weapons requirement development, integration and a Quick Reaction Assessment as required for RDC designated programs.					
FY 2013 Plans: Continue MQ-8C RDC, Weapons RDC, radar and other payload integration, continue LCS testing, and continue other air capable ship class integration and testing.					
Title: Development/Operational Testing			5.600	6.300	6.930
Articles:			0	0	0
FY 2011 Accomplishments: Continue Integrated Test Team Testing. Continue Continue Littoral Combat Ship (LCS) integration efforts.					
FY 2012 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2011	FY 2012	FY 2013	
Complete Operation Evaluation of MQ-8B baseline. Continue VTUAV SOF system payloads. Continue LCS integration efforts. ? Continue Weapons and radar integration efforts.											
FY 2013 Plans: Continue MQ-8C Rapid Developmental Capability (RDC) Developmental Testing. Start Radar Developmental Testing and prepare for Quick Reaction Assessment testing. Continue LCS and other Class Ship integration and testing. Continue Weapons RDC testing.											
Title: Engineering and Technical Services								15.286	9.948	19.400	
Articles:								0	0	0	
FY 2011 Accomplishments: Continue engineering management, program technical management, and management support for the VTUAV system. These include transportation of system assets, program office personnel travel, and contract support services. Continue to support LCS integration and payloads integration.											
FY 2012 Plans: Continue engineering, program technical management, and logistics support for the VTUAV system and RDC efforts. These include transportation of system assets, program office personnel travel, and contract support services. Continue to support LCS integration. Continue payloads integration. Continue Weapons integration, systems engineering, and test and evaluation. Continue Engineering and Logistics to Transition Weapons, Radar, and SOF payloads RDC.											
FY 2013 Plans: Continue engineering, program technical management, and logistics support for the VTUAV system. These include transportation of system assets, program office personnel travel, and contract support services. Continue to support LCS and other Class Ship integration and payload integration. Continue Weapons integration, weapons studies, systems engineering, and test and evaluation. Continue MQ-8C RDC integration. Continue payload and system studies.											
Accomplishments/Planned Programs Subtotals								67.048	108.248	99.600	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RD TEN, 0305204N: Tactical Unmanned Aerial Vehicles	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	562.137
• APN, 044300: MQ-8 UAV	58.732	191.986	124.573	0.000	124.573	129.003	114.750	124.510	94.990	1,176.542	2,277.003
• APN, 060510: MQ-8 UAV Spares	3.468	3.631	9.222	0.000	9.222	34.870	34.813	32.783	16.922	99.990	268.109

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<u>D. Acquisition Strategy</u> Continue incremental integration of MQ-8 System to support the Engineering and Manufacturing Development program and RDC efforts. Continue the MQ-8 program, payload integration, weaponization and Littoral Combat Ship and other Ship Class integration support. Full Rate Production and Initial Operational Capability will follow completion of Operation Test and Evaluation.		
<u>E. Performance Metrics</u> Successfully achieve Initial Operational Capability. Successfully achieve Coastal Battlefield Reconnaissance and Analysis integration. Successfully achieve Radar Sensor RDC. Successfully achieve Ship Integration. Successfully achieve weaponization RDC. Successfully support interim Special Operations Forces mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy											DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0305231N: MQ-8 UAV				PROJECT 2768: VTUAV						
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	SS/FFP	Northrop Grumman Corp:San Diego, CA	81.622	75.000	Nov 2011	70.270	Nov 2012	-		70.270	14.100	240.992	240.992	
Primary Hardware Development	SS/FFP	Raytheon Corp:Falls Church, VA	7.000	5.000	Nov 2011	3.000	Nov 2012	-		3.000	2.700	17.700	17.700	
Subtotal			88.622	80.000		73.270		-		73.270	16.800	258.692	258.692	
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	
Integrated Logistics Support	Various	Various:Various	1.165	1.700	Nov 2011	5.600	Nov 2012	-		5.600	3.900	12.365		
Subtotal			1.165	1.700		5.600		-		5.600	3.900	12.365		
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	WR	NAWCAD:PAXRV, MD	-	7.000	Nov 2011	5.430	Nov 2012	-		5.430	6.900	19.330		
Operational Test & Evaluation	WR	NAWCAD:PAXRV, MD	0.650	0.600	Nov 2011	1.500	Nov 2012	-		1.500	2.800	5.550		
Prior Years T&E	Various	Various:Various	0.342	-		-		-		-	0.000	0.342		
Subtotal			0.992	7.600		6.930		-		6.930	9.700	25.222		
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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	
Government Engineering Support	WR	NAWCAD:PAXRV, MD	24.465	14.248	Nov 2011	8.300	Nov 2012	-		8.300	13.100	60.113		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy											DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>				PROJECT 2768: <i>VTUAV</i>						

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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
Program Management Support	Various	Various:Various	0.370	3.600	Nov 2011	5.200	Nov 2012	-		5.200	11.200	20.370	
Travel	WR	NAVAIR:PAXRV, MD	0.277	0.400	Nov 2011	0.300	Nov 2012	-		0.300	1.600	2.577	
Contractor Engineering Support	Various	Various:Various	0.600	0.700	Nov 2011	-		-		-	0.000	1.300	
Subtotal			25.712	18.948		13.800		-		13.800	25.900	84.360	

Remarks Travel contract type is TO.													
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	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	116.491	108.248		99.600		-		99.600	56.300	380.639	

Remarks											
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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2768				
Milestones: Initial Operational Capability	3	2012	3	2012
Milestones: Full Rate Production MQ-8B	4	2012	4	2012
Systems Development: RDC MQ-8B: Radar RDC	2	2012	3	2013
Systems Development: RDC MQ-8B: Radar Integration Preliminary Design	1	2011	1	2012
Systems Development: RDC MQ-8C: MQ-8C Radar, Weapons, and other payloads	2	2012	1	2015
Systems Development: Engineering and Manufacturing Development: VTUAV	1	2011	3	2012
Systems Development: Engineering and Manufacturing Development: Coastal Battlefield Reconnaissance and Analysis Integration	1	2011	2	2012
Systems Development: Engineering and Manufacturing Development: Littoral Combat Ship Integration	1	2011	4	2013
Systems Development: Engineering and Manufacturing Development: Payload, Obsolescence, Software, Analysis, and SOF RDC	1	2011	2	2015
Reviews: MQ-8C RDC: System Readiness Review	1	2012	1	2012
Reviews: MQ-8C RDC: Preliminary Design Review	2	2012	2	2012
Reviews: MQ-8C RDC: Critical Design Review	3	2012	3	2012
Reviews: MQ-8C RDC: Quick Reaction Assessment 1 Endurance MQ-8C	4	2013	4	2013
Reviews: MQ-8C RDC: Quick Reaction Assessment 2 MQ-8C radar, weapons, and payloads	1	2015	1	2015
Test & Evaluation (T&E): Specialty Payloads Review	1	2011	4	2014
Test & Evaluation (T&E): Integrated Payload T&E: Coastal Battlefield Reconnaissance and Analysis IT-D-1	4	2011	4	2011
Test & Evaluation (T&E): MQ-8 Operational Evaluation: MQ-8 OT-C1	2	2012	3	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy			DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0305231N: MQ-8 UAV		PROJECT 2768: VTUAV	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Test & Evaluation (T&E): MQ-8 Operational Evaluation: Littoral Combat Ship Integration Review	1	2011	4	2013
Production Milestones: Contract Awards: Low Rate Initial Production (LRIP) Aircraft Procurement, Navy (APN) Contract Award V	4	2011	4	2011
Production Milestones: Contract Awards: Rapid Deployment Capability (RDC) MQ-8C I	3	2012	3	2012
Production Milestones: Contract Awards: Rapid Deployment Capability (RDC) MQ-8C II	1	2013	1	2013
Production Milestones: Contract Awards: Rapid Deployment Capability (RDC) MQ-8C III	1	2014	1	2014
Production Milestones: Contract Awards: Full Rate Production (FRP) MQ-8B I	1	2015	1	2015
Production Milestones: Contract Awards: Full Rate Production (FRP) MQ-8B II	1	2016	1	2016
Deliveries: Air Vehicles - LRIP II APN	1	2011	1	2011
Deliveries: Air Vehicles - LRIP III APN	2	2011	4	2011
Deliveries: Air Vehicles - LRIP IV APN	1	2012	1	2013
Deliveries: Air Vehicles - LRIP V APN	3	2013	4	2013
Deliveries: Air Vehicles - RDC MQ-8C I	1	2014	3	2014
Deliveries: Air Vehicles - RDC MQ-8C II	4	2014	2	2015
Deliveries: Air Vehicles - RDC MQ-8C III	3	2015	2	2016
Deliveries: Air Vehicles - FRP MQ-8B I	3	2016	2	2017
Deliveries: Air Vehicles - FRP MQ-8B II	3	2017	4	2017