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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0305231N: MQ-8 UAV							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	25.533	10.665	0.000	10.665	3.638	0.508	0.516	0.524	Continuing	Continuing
2768: VTUAV	0.000	25.533	10.665	0.000	10.665	3.638	0.508	0.516	0.524	Continuing	Continuing
Note Prior to FY10, VTUAV was budgeted in PE 0305204N.											
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-8B 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 and the incorporation of an electro-optical/infrared/ laser designator-laser range finder modular mission payload. Increment 2 is underway providing the multi-mode RADAR capability. 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-8B will be provided through standard DoD Command, Control, Communications, Computers and Intelligence Surveillance, and Reconnaissance (C4ISR).											

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B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	0.000	25.639	0.000	0.000	0.000
Current President's Budget	0.000	25.533	10.665	0.000	10.665
Total Adjustments	0.000	-0.106	10.665	0.000	10.665
• Congressional General Reductions		-0.106			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Program Adjustments	0.000	0.000	10.665	0.000	10.665
Change Summary Explanation					
Technical: Not applicable.					
Schedule:					
Acquisition milestones have been adjusted due to software and flight test delays. IOC and the completion of OT-C1 OPEVAL moved from 4Q FY09 to 2Q FY10, and the completion of VTUAV EMD moved from the end of 4Q FY09 to the end of 2Q FY10. Added Littoral Combat Ship (LCS) Integration to enable VTUAV to integrate, test and deploy onboard LCS 1&2 for the Surface Warfare, Mine Counter-Measures and Anti Submarine Warfare modules. Increment 2 Radar payload procurement starts in FY13 with Increment 2 IOC in FY15. Studies and analysis schedule updated to reflect a continuing effort vice a new start in FY10. COBRA and Radar were a spiral effort. Due to the Sub-Program designation of the Radar upgrade program, the schedule has been updated to show these programs separately. FRP moved 2 months due to delayed OPEVAL entry. Extended deliveries (LRIP II) per updated production estimates from Prime Contractor. New delivery period is from 2Q FY10 to 2Q FY11.					
FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.					

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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 0305231N: MQ-8 UAV				PROJECT 2768: VTUAV			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
2768: VTUAV	0.000	25.533	10.665	0.000	10.665	3.638	0.508	0.516	0.524	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification <p>The MQ-8 (popular name "Fire Scout") 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, and the incorporation of an electro-optical/infrared laser designator-laser range finder modular mission payload. 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 (C4ISR) system architectures and protocols.</p> <p>A MQ-8 system is comprised of air vehicles, electro-optical/infrared/laser designator-rangefinder payloads, Ground Control Stations (with TCS) and Aircraft TC DL integrated for interoperability and a UAV Common Automatic Recovery System (UCARS) for automatic take-off and landings, and associated spares and support equipment. The MQ-8 system will support Surface Warfare, Mine Interdiction Warfare, and Anti-Submarine Warfare mission modules while operating onboard LCS. The System Design 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 ground control stations supplement the system to support shore-based operations, such as predeployment or acceptance functional check flights. These land-based ground control stations will also support depot level maintenance/post-maintenance activities.</p> <p>Development for the program continues with Increment 2 which adds the multi-mode RADAR. Integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload continues. VTUAV development and testing activity will continue to support LCS development.</p> <p>The U.S. Army has selected the MQ-8 as their Class IV UAV for the Future Combat Systems (FCS). Coordination with the U.S. Army FCS Program is on-going to investigate the potential cost savings for both programs where system commonalities and common logistics support can be identified.</p> <p>The VTUAV program received Milestone C approval in May 2007, authorizing Low Rate Initial Production (LRIP).</p>											

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
SD&D Hardware and System Development FY 2010 Plans: Continue incremental integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. Continue integration of MQ-8B Increment 2. Continue combined developmental and operational testing of increment 2. Continue integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload. Continue to support LCS integration. FY 2011 Base Plans: Continue incremental integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. Continue integration of MQ-8B Increment 2. Continue combined developmental and operational testing of increment 2. Continue integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload. Continue to support LCS integration.		0.000	25.300	4.000	0.000	4.000
Development Testing FY 2010 Plans: Continue incremental integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. Continue testing of the VTUAV system and complete OPEVAL. Continue LCS integration efforts. FY 2011 Base Plans: Start increment 2 testing of the VTUAV system. Transition to start OPEVAL in FY12. Continue LCS integration efforts.		0.000	0.137	3.103	0.000	3.103
Engineering and Technical Services		0.000	0.096	3.562	0.000	3.562

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B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2010 Plans: Continue incremental integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. 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 Increment 2 testing.											
FY 2011 Base Plans: 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 Increment 2 testing.											
Accomplishments/Planned Programs Subtotals						0.000	25.533	10.665	0.000	10.665	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• RD TEN, 0305204N: Tactical Unmanned Aerial Vehicles	22.514	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	50.189	90.777	47.484	0.000	47.484	46.242	67.442	89.553	89.485	1,309.849	1,865.872
• APN, 060510: MQ-8 UAV Spares	6.894	2.333	3.488	0.000	3.488	0.982	2.300	0.734	0.744	127.184	158.650
D. Acquisition Strategy											
Continue incremental integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. Continue the MQ-8 program, Increment 2 and LCS integration support. FRP and IOC will follow completion of OPEVAL.											

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<u>E. Performance Metrics</u> Successfully achieve Initial Operational Capability. Successfully continue COBRA Integration. Successfully continue Radar Sensor Integration. Successfully continue LCS Ship Integration. Successfully complete Operational Test.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
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 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	0.000	25.300	Nov 2009	0.000		0.000		0.000	0.000	25.300	25.300	
Primary Hardware Development	SS/FFP	Raytheon Corp Falls Church, VA	0.000	0.000		4.000	Apr 2010	0.000		4.000	0.000	4.000	4.000	
Subtotal			0.000	25.300		4.000		0.000		4.000	0.000	29.300	29.300	
Remarks														
Support (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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 Various	0.000	0.000		2.462	Nov 2010	0.000		2.462	Continuing	Continuing	Continuing	
Subtotal			0.000	0.000		2.462		0.000		2.462				
Remarks														

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Test and Evaluation (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	
Operational Test & Evaluation	WR	NAWCAD PAXRV, MD	0.000	0.050	Nov 2009	3.103	Nov 2010	0.000		3.103	Continuing	Continuing	Continuing	
Operational Test & Evaluation	WR	NAWCWD PAXRV,MD	0.000	0.087	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing	
Subtotal			0.000	0.137		3.103		0.000		3.103				
Remarks														
Management Services (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	NAWCWD China Lake, CA	0.000	0.036	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing	
Government Engineering Support	WR	NAWCAD PAXRV, MD	0.000	0.030	Nov 2009	0.700	Nov 2010	0.000		0.700	Continuing	Continuing	Continuing	
Program Management Support	Various/ Various	Various Various	0.000	0.000		0.370	Nov 2010	0.000		0.370	Continuing	Continuing	Continuing	
Travel	WR	NAVAIR PAXRV, MD	0.000	0.030	Oct 2009	0.030	Oct 2010	0.000		0.030	Continuing	Continuing	Continuing	
Subtotal			0.000	0.096		1.100		0.000		1.100				

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Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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
Remarks Travel contract type is TO.													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	25.533		10.665		0.000		10.665			
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

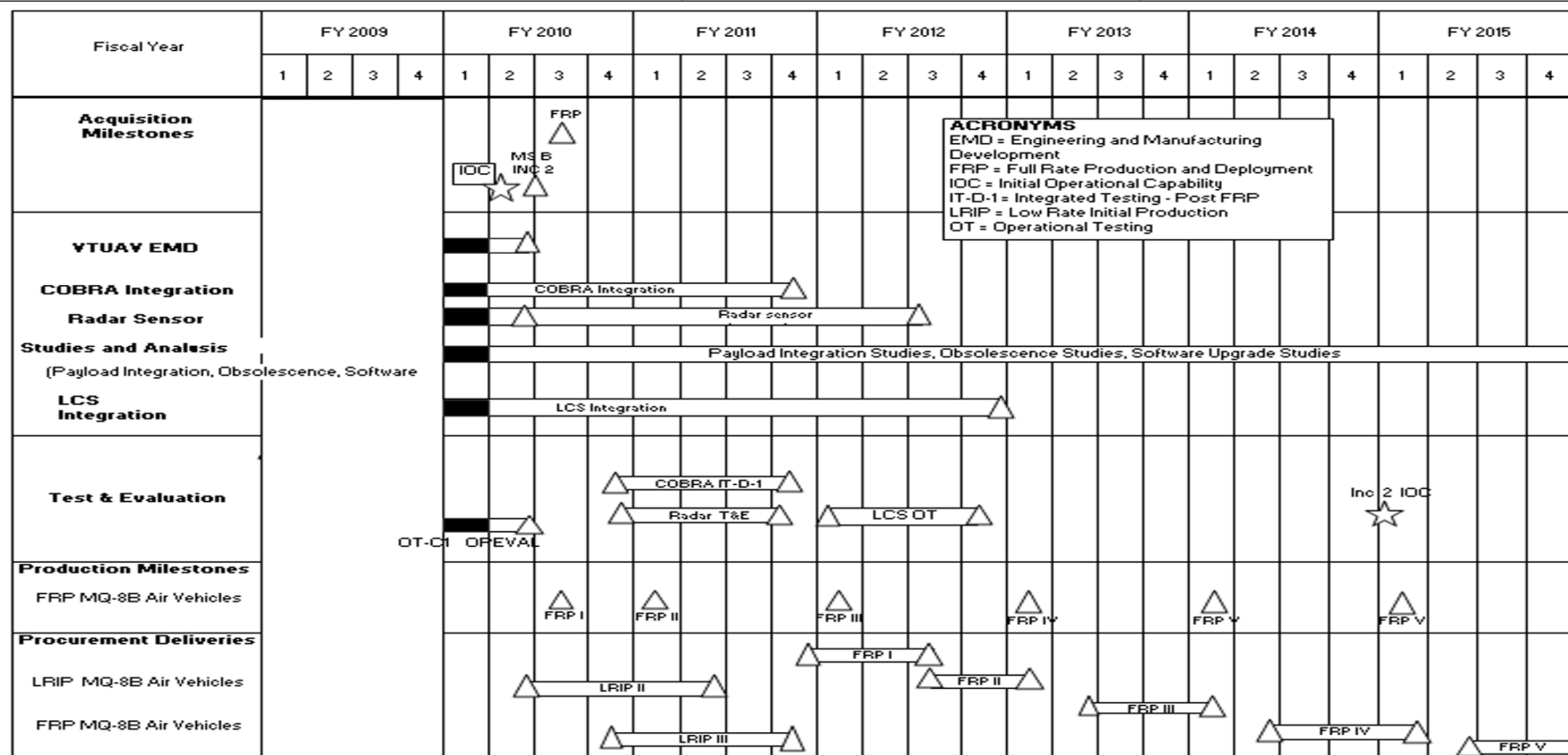
1319: Research, Development, Test & Evaluation, Navy
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305231N: MQ-8 UAV

PROJECT

2768: VTUAV



ACRONYMS
 EMD = Engineering and Manufacturing Development
 FRP = Full Rate Production and Deployment
 IOC = Initial Operational Capability
 IT-D-1 = Integrated Testing - Post FRP
 LRIP = Low Rate Initial Production
 OT = Operational Testing

Remarks: Prior to FY10, VTUAV was budgeted for in PE 0305204N.

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestones	1	2010	4	2015
- Initial Operational Capability (IOC)	2	2010	2	2010
- MS B Inc 2	3	2010	3	2010
- Full Rate Production	3	2010	3	2010
- VTUAV EMD	1	2009	2	2010
- COBRA Integration	1	2010	4	2011
- Radar Sensor Integration	1	2010	3	2012
- Radar Sensor Integration Award	2	2010	2	2010
- Studies & Analysis	1	2010	4	2015
- LCS Integration	1	2010	4	2012
Test & Evaluation Milestones	1	2010	4	2015
- OT-C1 OPEVAL	1	2010	2	2010
- COBRA IT-D-1	4	2010	4	2011
- Radar T&E	4	2010	4	2011
- LCS OT	1	2012	4	2012
- Inc 2 IOC	1	2015	1	2015
FRP Contract awards (I-IV)	3	2010	1	2015
Delivery	1	2010	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010	
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	Start		End	
Event	Quarter	Year	Quarter	Year
- Air Vehicles - FY08 LRIP II	2	2010	2	2011
- Air Vehicles - FY09 LRIP III	4	2010	4	2011
- Air Vehicles - FRP I	4	2011	3	2012
- Air Vehicles - FRP II	3	2012	1	2013
- Air Vehicles - FRP III	2	2013	1	2014
- Air Vehicles - FRP IV	2	2014	1	2015
- Air Vehicles - FRP V	2	2015	4	2015

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