EXHIBIT R-2, RDT&E Budget Item Justification					DATE: February 2008		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					R-1 ITEM NOMENCLATURE 0305204N, TACTICAL UNMANNED AERIAL VEHICLES		
COST ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	120.293	56.787	45.717	53.892	30.093	26.668	19.429
2478 TCS	13.848	9.330	8.844	8.957	9.408	9.585	9.757
2768 VTUAV	100.000	32.752	9.651	26.246	4.995	1.329	1.358
2910 JOINT TECH CENTER/SYSTEMS INTEG LABORATORY	1.664	1.679	1.724	1.747	1.784	1.822	1.863
3192 STUAS		6.105	25.498	16.942	13.906	13.932	6.451
9999 CONGRESSIONAL ADDS	4.781	6.921					

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

TCS (Tactical Control System): TCS is a standards-based system that provides interoperability and commonality for Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interfaces, and Command and Control of Naval Unmanned Air Systems (UASs). Interoperability across the Naval UAS Family of Systems (FoS) is achieved through use of TCS software operating on Ground Control Station hardware utilizing a NATO STANAG-4586 architecture communicating across a Tactical Common Data Link. TCS provides a full range of scaleable UAS capabilities from passive receipt of air vehicle and payload data to full air vehicle and payload command and control. TCS offers the war fighter a common core operating environment to simultaneously receive, process, and disseminate data from different UAS types for reconnaissance, surveillance, and combat assessment. This program supports enhancements and updates to TCS in order to continue to meet supported air vehicle enhancements, incorporation of new technologies that will be used to enhance overall system performance, incorporate new payloads and payload capabilities (such as advanced sensors and weapons), incorporate Multi-Vehicle Control, and incorporate NATO STANAG-4586 and C4I enhancements. TCS software is interoperable and is compliant with the OSD Command and Control, Communications, Intelligence (C3I) Joint Technical Architecture,Distributed Common Ground System standards, and NATO standards.

VTUAV (Vertical Take-Off and Landing Tactical Unmanned Air Vehicle; MQ-8B; popular name 'Fire Scout): 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 VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification,targeting, laser designation and battle management (including communications relay). The VTUAV 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 VTUAV will be provided through standard DoD Command, Control, Communications, Computers and Intelligence Surveillance, and Reconnaissance (C4ISR) system architectures and protocols.

JTC/SIL (Joint Technology Center/System Integration Laboratory): JTC/SIL provides experimentation for UAV technology assessment, insertion, demonstration, transfer, as well as simulation and exercise support.

STUAS (Small Tactical Unmanned Aircraft System) / Tier II UAS: STUAS / Tier II UAS is a new start program in FY08 that will provide persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition (ISR/TA) support for tactical level maneuver decisions and unit level force defense/force protection for Naval ships (multi-ship classes) and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. A notional system may include three air vehicles, one ground station, multi-mission (plug & play) payloads, and associated launch, recovery, and support equipment. This system will support Naval missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Naval units operating from sea/shore in the Global War on Terrorism. This system will also support Marine Corps missions such as close range UAS, enabling enhanced decision-making and improved integration with ground schemes of maneuver. The STUAS/Tier II UAS system will continue to evolve and upgrade capabilities to satisfy capability shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include MAGTF and Navy C2 integration, a common control station with other UASs, SIGINT, SAR, & NBC detecting payloads and weapons integration. Marine Corps RDTEN funding for STUAS/Tier II UAS is in PE 0206313M.

FY2008 funding totals do not include $23.5M previously requested for current FY2008 GWOT requirements.

Congressional Adds. (FY07)

Advanced Airship Flying Laboratory
Capability studies for development of a modernized naval airship featuring contemporary composited, digital flight controls, vectored thrust and remote piloted capabilities that can provide immediate utility for missions requiring heavy lift (logistics and/or sensor suites), long endurance (measured in days vs. hours), and persistent Intelligence, Surveillance, and Reconnaissance (ISR).

UAV Payload-NBC Detection
Naval UAV Payload effort to be used only for the continuation of an industry-based research program for lightweight low power Nuclear, Chemical and Biological (NBC) sensors and isotope identification techniques utilizing Micro-Electro-Mechanical systems (MEMS) technology and innovative detection devices to identify airborne chemical/biological threats and hazardous materials.

UAS Tactical Control System Open Architecture
This initiative includes the open systems migration of unique military standard sensors, electronics, and software system components to lower cost/higher performance commercial equivalent capabilities.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0305204N, TACTICAL UNMANNED AERIAL VEHICLES

Joint Strike Fighter (JSF)
Innovative technology for an open architecture JSF/F/A-18 E/F core processor. This initiative includes the open systems migration of unique military standard sensors, electronics, and software system components to lower cost/higher performance commercial equivalent capabilities.

Congressional Adds. (FY08)

UAS Tactical Control System Open Architecture
This initiative includes the open systems migration of unique military standard sensors, electronics, and software system components to lower cost/higher performance commercial equivalent capabilities.

Micro-munitions Interface for Tactical Unmanned Systems
This initiative is to develop an interface between Unmanned Air Systems (UAS) and micro-munitions, defined as weapons weighing less than 100 pounds. Integration of micro-munitions onto UASs requires a stores/weapons management interface that provides a safe and effective integration between the weapon and the unmanned system.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2007	FY 2008	FY 2009
Previous President's Budget:	119.098	50.185	22.393
Current President's Budget:	120.293	56.787	45.717
Total Adjustments	1.195	6.602	23.324
Summary of Adjustments			
Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.005	-0.398	
Congressional Increases	1.200	7.000	
Economic Assumptions			-0.021
Miscellaneous Adjustments			23.345
Subtotal	1.195	6.602	23.324

Schedule:

TCS - IOC moved from 4Q FY2008 to 1Q FY2009 to align with VTUAV and LCS. Integration with VTUAV and software support for VTUAV moved to align with IOC change. Added additional detail regarding Software Update versions.

VTUAV - MS C and LRIP I contract award moved to 3Q FY2007 to support processing of Capability Production Document (CPD) in accordance with Joint Capabilities Integration & Development System IOC moved from 4Q FY2008 to 1Q FY2009 to support LCS schedule adjustments. IOC is predicated on completion of operational test aboard LCS. 1Q FY2009 is within the VTUAV APBA trade space for IOC. Added multi-mode radar sensor integration effort in FYs 2009 through 2011, and radar T&E in FY2011. LRIP II moved to 2Q of FY2008.

STUAS/Tier II UAS - Schedule adjusted to reflect change in scope of program. Program now funded for Increment 0 and Increment 1, and associated tasks scheduled. Increment 0 Milestone B, Milestone C, and IOC realigned. Increment 1 milestones established.

Technical:
Not applicable

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES		PROJECT NUMBER AND NAME 2478, TCS				
COST ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
2478 TCS	13.848	9.330	8.844	8.957	9.408	9.585	9.757
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) A. This program supports the Tactical Control System (TCS), a standards-based system that provides interoperability and commonality for Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interfaces, and Command and Control of Naval Unmanned Air Systems (UASs). Interoperability across the Naval UAS Family of Systems (FoS) is achieved through use of TCS software operating on Ground Control Station hardware utilizing a NATO STANAG-4586 architecture communicating across a Tactical Common Data Link.

TCS provides a full range of scaleable UAS capabilities from passive receipt of air vehicle and payload data to full air vehicle and payload command and control. TCS offers the war fighter a common core operating environment to simultaneously receive, process, and disseminate data from different UAS types for reconnaissance, surveillance, and combat assessment.

This program supports enhancements and updates to TCS in order to continue to meet supported air vehicle enhancements, incorporation of new technologies that will be used to enhance overall system performance, incorporate new payloads and payload capabilities (such as advanced sensors and weapons), incorporate Multi-Vehicle Control, and incorporate NATO STANAG-4586 and C4I enhancements.

TCS software will be incorporated into the Vertical Take-off and Landing Unmanned Air Vehicle (VTUAV) system, which will IOC in 1Q FY09. TCS software addresses VTUAV requirements validated by the Joint Requirements Oversight Council in the VTUAV Capability Production Document (May 2007).

TCS maximizes the use of contractor and government off-the-shelf hardware and software whenever possible and incorporates software/hardware enhancements where appropriate to maintain growth potential and minimize hardware obsolescence. TCS software is interoperable,and is compliant with the OSD Command and Control, Communications,Intelligence (C3I) Joint Technical Architecture,and Distributed Common Ground System standards, and NATO standards.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

TCS DEVELOPMENT AND INTEGRATION	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	11.699	7.983	7.643
RDT&E Articles Qty			

Continue TCS integration with VTUAV development. Continue new TCS capabilities to support requirements for Littoral Combat Ship (LCS) integration. Continue TCS NATO STANAG 4586 compliance. Continue TCS Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interface testing for VTUAV required C4ISR systems. Complete multi-vehicle UAS control through FY2008.

TECHNICAL AND ENGINEERING SERVICES	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	2.149	1.347	1.201
RDT&E Articles Qty			

Continue government engineering support, contractor support, program support, and travel for the TCS program.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 2478, TCS

C. OTHER PROGRAM FUNDING SUMMARY:

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
Not Applicable									

D. ACQUISITION STRATEGY:

The TCS program continues under the FY04 Congressionally-directed restructure of the program to focus on Navy requirements and standards based on interoperability. Navy requirements for TCS include supporting fielding of the Navy Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) aboard the Littoral Combat Ship (LCS), addition of plug-and-play payloads, and implementation of NATO Standardization Agreement for Standard Interfaces of UAV Control System for NATO UAV Interoperability (STANAG 4586).

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 2478, TCS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Award Fees	C/CPAF	RAYTHEON COMPANY, FALLS CHURCH,	7.445	.897	11/06	.500	11/07	.431	11/08	1.344	10.617	10.617
Primary Hdw Development	C/CPAF	RAYTHEON COMPANY, FALLS CHURCH,	89.400	10.802	11/06	7.453	11/07	7.182	11/08	28.730	143.567	143.567
SUBTOTAL PRODUCT DEVELOPMENT			96.845	11.699		7.953		7.613		30.074	154.184	

Remarks:Numbers may not add due to rounding.

SUPPORT												
SUBTOTAL SUPPORT												

Remarks:

TEST & EVALUATION												
Dev Test & Eval	WX	VARIOUS	1.200			.030	11/07	.030	11/08	Continuing	Continuing	
SUBTOTAL TEST & EVALUATION			1.200			.030		.030				

Remarks:

MANAGEMENT												
Contractor Eng Sup	VARIOUS	VARIOUS	1.235	.500	11/06	.391	11/07	.407	11/08	Continuing	Continuing	
Government Eng Sup	WX	VARIOUS	6.087	1.259	11/06	.580	11/07	.330	11/08	Continuing	Continuing	
Program Mgmt Sup	VARIOUS	VARIOUS	2.379	.340	11/06	.326	11/07	.419	11/08	Continuing	Continuing	
Travel	TO	NAVAIR, PAXTUXENT RIVER MD	.048	.050	11/06	.050	11/07	.045	11/08	Continuing	Continuing	
SUBTOTAL MANAGEMENT			9.749	2.149		1.347		1.201				

Remarks:

Total Cost			107.794	13.848		9.330		8.844		Continuing	Continuing	

Remarks:

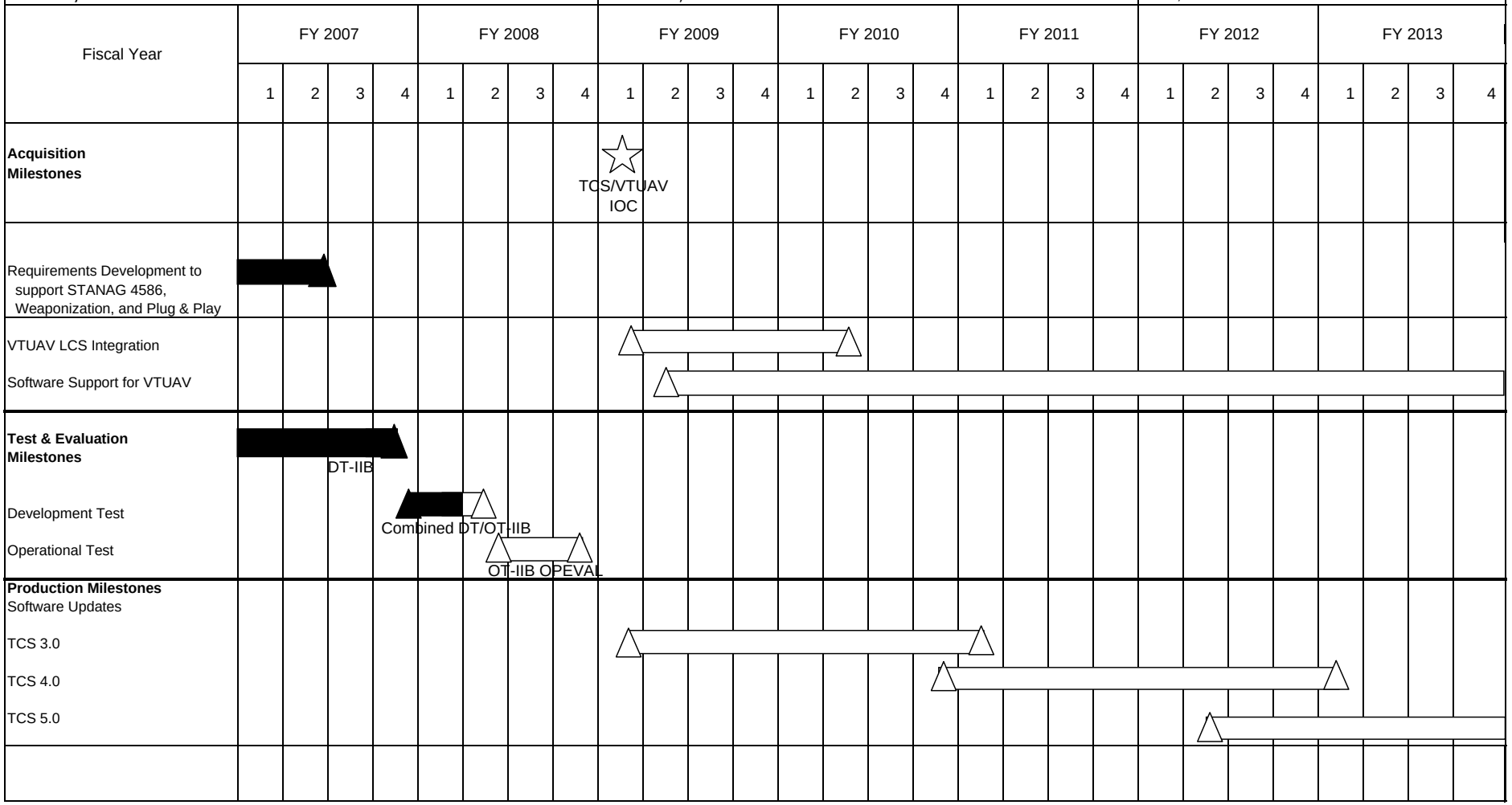
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: February 2008

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0305204N, TACTICAL UNMANNED AERIAL VEHICLES

PROJECT NUMBER AND NAME: 2478, TCS



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 2478, TCS			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Acquisition Milestones TCS/VTUAV IOC			1Q					
Requirements Development to Support	1Q-2Q							
STANAG 4586, Weaponization, and Plug and Play								
VTUAV LCS Integration			1Q-4Q	1Q-2Q				
Software Support for VTUAV			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Test & Evaluation Milestones								
TCS/VTUAV DT-IIB	1Q-4Q							
Combined DT/OT-IIB	4Q	1Q-2Q						
OT-IIB OPEVAL		2Q-4Q						
Software Upgrades								
TCS 3.0			1Q-4Q	1Q-4Q	1Q			
TCS 4.0				4Q	1Q-4Q	1Q-4Q	1Q	
TCS 5.0						2Q-4Q	1Q-4Q	

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES		PROJECT NUMBER AND NAME 2768, VTUAV				
COST ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
2768 VTUAV	100.000	32.752	9.651	26.246	4.995	1.329	1.358
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Vertical Take-Off and Landing Tactical Unmanned Air Vehicle (VTUAV; MQ-8B; 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 VTUAV can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The VTUAV 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 groundcontrol station, and through the use of the Tactical Common Data Link (TCDL). The data from the VTUAV will be provided through standard DoD Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR) system architectures and protocols.

A VTUAV system is comprised of air vehicles, electro-optical/infrared/laser designator-rangefinder payloads, Ground Control Stations (with TCS and TCDL integrated for interoperability), and a UAV Common Automatic Recovery System (UCARS) for automatic take-off and landings, and associated spares and support equipment. The VTUAV system will support Surface Warfare, Mine Interdiction Warfare, and Anti-Submarine Warfare mission modules while operating onboard LCS, and system procurement is tied to mission modules supporting LCS, vice sea frames. 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.

A program to continue development of the VTUAV to meet the Littoral Combat Ship (LCS) mission requirements was initiated in FY04. Program funding in FY08-10 includes efforts required to integrate the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload, a mine detection sensor, under development by PMS-495. VTUAV development and testing activities will continue in FY09. Funding is also provided in FY09 to initiate integration of a multi-mode radar sensor.

The U.S. Army has selected the MQ-8B 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.

The VTUAV program received Milestone C approval in May 2007, authorizing Low Rate Initial Production (LRIP).

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

SD&D-HARDWARE AND SYSTEM DEVELOPMENT	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	85.268	23.900	8.900
RDT&E Articles Qty			

Continue incremental procurement and integration of EMD MQ-8B Air Vehicles to support the Engineering and Manufacturing Development (EMD) program. Continue to completion EMD of the VTUAV system. Continue combined developmental and operational testing. Continue integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload. Begin integration of a multi-mode radar sensor.

ILS AND TRAINING SYSTEMS	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	4.450	3.061	
RDT&E Articles Qty			

Continue ILS, technical data, and training system development. Procurement of trainers and spares to support OPEVAL.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 2768, VTUAV

DEVELOPMENT TESTING	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	3.092	.407	.344
RDT&E Articles Qty			

Complete developmental testing of the VTUAV system. Continue combined developmental and operational testing, TECHEVAL, and planning for OPEVAL.

ENGINEERING AND TECHNICAL SERVICES	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	7.190	5.384	.407
RDT&E Articles Qty			

Continue engineering management, program technical management, and management support for the VTUAV system. These include transportation of system assets, fleet introduction team and program office personnel travel, and contract support services. Continue to support system development, system integration and test, and TECHEVAL.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
APN: 044300: 0305204N VTUAV	37.419	37.432	55.337	73.347	75.560	96.345	102.799	1,013.122	1,491.361
APN Initial Spares: 060510: 0305204N VTUAV	5.843	1.118	6.914	0.490	0.501	0.767	0.784	90.842	107.259

D. ACQUISITION STRATEGY:

Continue with the VTUAV EMD program. Design and develop an improved system initiated in FY04 to support the Littoral Combat Ship Program. Achieved Milestone C in 3Q FY2007. FRP and IOC will follow completion of OPEVAL.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2008			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 2768, VTUAV						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	C/CPFF	NORTHROP GRUMMAN SYSTEMS CORPORATIO	286.704	85.268	11/06	23.900	11/07	8.900	11/08	30.935	435.707	435.707
SUBTOTAL PRODUCT DEVELOPMENT			286.704	85.268		23.900		8.900		30.935	435.707	

Remarks: Numbers may not add due to rounding.

SUPPORT												
Integrated Logistics Sup	VARIOUS	VARIOUS	16.223	4.450	11/06	3.061	11/07				23.734	
SUBTOTAL SUPPORT			16.223	4.450		3.061					23.734	

Remarks: Numbers may not add due to rounding.

TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	4.701								4.701	
Dev Test & Eval	VARIOUS	VARIOUS	.686	.986	11/06	.407	11/07			1.014	3.093	
Oper Test & Eval	WX	NAWCAD, PATUXENT RIVER MD						.080	11/08		.080	
Oper Test & Eval	WX	NAWCWD, CHINA LAKE CA						.264	11/08	1.027	1.291	
SUBTOTAL TEST & EVALUATION			5.387	.986		.407		.344		2.041	9.165	

Remarks: Numbers may not add due to rounding.

MANAGEMENT												
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD	21.920	7.063	11/06	3.482	11/07	.357	11/08	.934	33.756	
Program Mgmt Sup	VARIOUS	NAWCAD, PATUXENT RIVER MD	17.639	2.183	11/06	1.852	11/07				21.674	
Travel	TO	NAVAIR, PAXTUXENT RIVER MD	.617	.050	10/06	.050	10/07	.050	10/08	.200	.967	
SUBTOTAL MANAGEMENT			40.176	9.296		5.384		.407		1.134	56.397	

Remarks: Numbers may not add due to rounding.

Total Cost			348.490	100.000		32.752		9.651		34.110	525.003	

Remarks: Numbers may not add due to rounding.

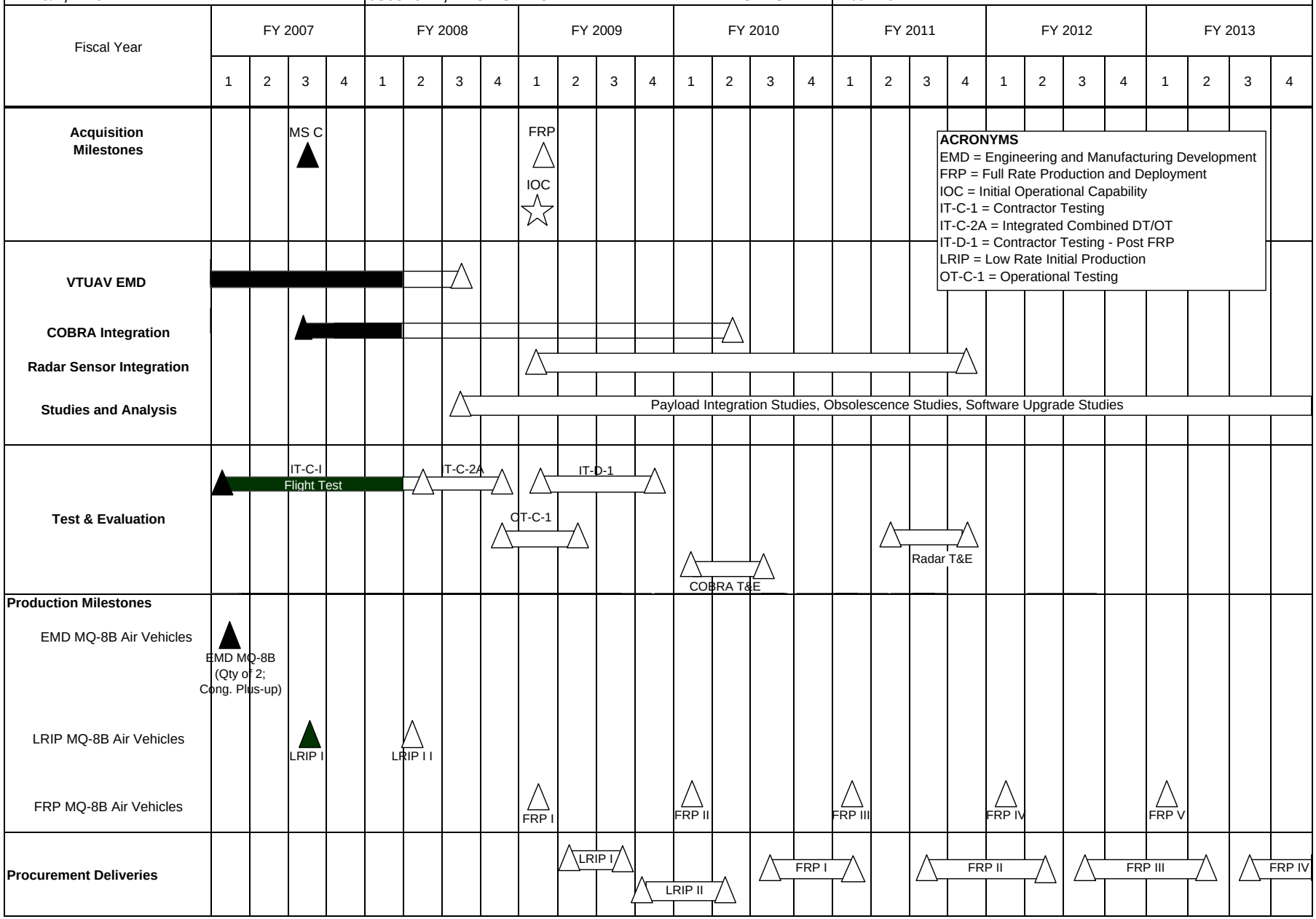
EXHIBIT R4, Schedule Profile

DATE: February 2008

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N /BA-7**

PROGRAM ELEMENT NUMBER AND NAME: **0305204N, TACTICAL UNMANNED AERIAL VEHICLES**

PROJECT NUMBER AND NAME: 2768 VTUAV



CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: February 2008			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 2768, VTUAV			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Acquisition Milestones							
Milestone C	3Q						
COBRA Integration	3Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q			
Studies & Analysis		3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Initial Operational Capability (IOC)			1Q				
Full Rate Production (FRP)			1Q				
Radar Sensor Integration			1Q-4Q	1Q-4Q	1Q-4Q		
VTUAV EMD (MQ-8B)	1Q-4Q	1Q-3Q					
Test & Evaluation Milestones							
IT-C-I	1Q-4Q	1Q-2Q					
IT-C-2A		2Q-4Q					
OT-C-I		4Q	1Q-2Q				
IT-D-1			1Q-4Q				
COBRA T&E				1Q-3Q			
Radar T&E					2Q-4Q		
Production Milestones							
EMD MQ-8B Air Vehicles contract award	1Q						
LRIP I MQ-8B Air Vehicles contract award	3Q						
LRIP II MQ-8B Air Vehicles contract award		2Q					
FRP contract awards (I-V)			1Q	1Q	1Q	1Q	1Q
Delivery							
Air Vehicles -- FY07 LRIP			2Q-3Q				
Air Vehicles -- FY08 LRIP			4Q	1Q-2Q			
Air Vehicles -- FRP I				3Q-4Q	1Q		
Air Vehicles -- FRP II					3Q-4Q	1Q-2Q	
Air Vehicles -- FRP III						3Q-4Q	1Q-2Q
Air Vehicles -- FRP IV							3Q-4Q

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES		PROJECT NUMBER AND NAME 2910, JOINT TECH CENTER/SYSTEMS INTEG LAB				
COST ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
2910 JOINT TECH CENTER/SYSTEMS INTEG LAB	1.664	1.679	1.724	1.747	1.784	1.822	1.863
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a center of technical excellence to support all Unmanned Air Vehicle (UAV) programs within the services. The mission includes Service-specific and Joint Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR) programs throughout DoD. The JTC/SIL provides a Government test bed for rapid prototyping, technology insertion and transition, systems engineering, modeling/simulation, training and Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaisance (C4ISR) optimization. The cornerstone of JTC/SIL's diverse tool set is the Mulitiple Unified Simulation Environment (MUSE), which is the Department's simulation/training system of choice for ISR systems, sensors, and platforms.

The Services and Warfighting Commanders have a requirement for the capability to train with a system that provides a real-time simulation environment containing multiple intelligence systems that can be integrated with larger force-on-force simulations. The MUSE creates a realistic operational environment which supports the ability to assess military utility, architecture and CONOPS development, Tactics, Techniques, and Procedures (TTP) development and refinement, conduct emerging concepts experimentation, and C4ISR optimization within warfighting exercises and experiments. It is the only simulation system used by the Combat Commanders and Joint Services to support command and battle staff C4ISR training; there is no alternative available to satisfy those requirements.

The MUSE also creates a realistic operational environment that supports an embedded training capability for multiple Program Managers; tools to minimize acquisition and life cycle cost and schedule impacts; the ability to conduct emerging concepts experimentation, future systems exploration, systems integration, and technology insertion; applications for Joint and Service-specific warfighting exercises; and C4ISR optimization.

MUSE is currently in use within all services and unified commands simulating Predator, Global Hawk, Hunter, Shadow 200, and MCTUAS UAVs, national and commercial satellite collectors, P-3, and the U-2. During warfighting exercises, the JTC/SIL integrates imagery simulations with associated C4ISR systems to support execution of critical imagery processes. For those assets normally not available for training, the JTC/SIL provides surrogate systems and interfaces. Distributed training environments, virtually linking participants from various locations worldwide, are routinely supported within the MUSE architecture. The MUSE is also used as a mission rehearsal tool for current, on-going military combat operations.

Additionally, the JTC/SIL supports a range of materiel developers, integrating prototypes and trainers into the C4ISR and training environments of supported units. The Tactical UAV (TUAV) ground station developed by the JTC/SIL includes an embedded MUSE trainer, and is planned to be incorporated into the VTUAV Ground Control Station (GCS). Interim training capabilities for the Tactical Exploitation System (TES) are currently employed in the joint exercises.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

MUSE DEVELOPMENT	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.830	.830	.851
RDT&E Articles Qty			

MUSE Development - Continue development of VTUAV model, continued Common Trainer for current platforms, continue to provide C4ISR simulation support to major exercises and demonstrations, complete integration of Tactical Exploitation of National Capabilities (TENCAP) simulation into PC-based MUSE, complete development of virtual Signals Intelligence (SIGINT) platform, continue development of Laser Designator capability, continue upgrade for National Space Assets Enhancements, continue C4I Enhancements, continue initial Fixed Target Damage simulation.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 2910, JOINT TECH CENTER/SYSTEMS INTEG LAB

ENGINEERING AND MAINTENANCE	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.500	.500	.500
RDT&E Articles Qty			

Maintenance, Licenses and Equipment Purchases includes the day-to-day maintenance of lab equipment, license maintenance and license renewals from vendors for individual pieces of equipment, purchases of equipment to support the MUSE, and purchases to upgrade the MUSE capability.

PROGRAM MANAGEMENT SUPPORT	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.334	.349	.373
RDT&E Articles Qty			

Laboratory Sustainment includes government management, contracts administration, cost accounting, configuration management, administrative support of the lab, MUSE architecture development, property management/accountability, and procurement of equipment.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
Not Appliable									

D. ACQUISITION STRATEGY:
Not Applicable

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2008			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 2910, JOINT TECH CENTER/SYSTEMS INTEG LAB						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	MIPR	USA, REDSTONE ARSENAL AL	4.294	.830	11/06	.830	11/07	.851	11/08	Continuing	Continuing	
SUBTOTAL PRODUCT DEVELOPMENT			4.294	.830		.830		.851		Continuing	Continuing	

Remarks:

SUPPORT												
Develop Support Equip	MIPR	USA, REDSTONE ARSENAL AL	2.900	.500	11/06	.500	11/07	.500	11/08	Continuing	Continuing	
SUBTOTAL SUPPORT			2.900	.500		.500		.500		Continuing	Continuing	

Remarks:

TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												

Remarks:

MANAGEMENT												
Government Eng Sup	MIPR	USA, REDSTONE ARSENAL AL	1.600	.334	11/06	.349	11/07	.373	11/08	Continuing	Continuing	
SUBTOTAL MANAGEMENT			1.600	.334		.349		.373		Continuing	Continuing	

Remarks:

Total Cost			8.794	1.664		1.679		1.724		Continuing	Continuing	

Remarks:

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE: February 2008							
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES												PROJECT NUMBER AND NAME 2910, JOINT TECH CENTER/SYSTEMS INTEG LAB											
Fiscal Year	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
Test & Evaluation Milestones																																
Provide MUSE Support to UAV developers																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 2910, JOINT TECH CENTER/SYSTEMS INTEG LAB		
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
MUSE Support to UAV Developers	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES		PROJECT NUMBER AND NAME 3192, STUAS				
COST ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
3192 STUAS		6.105	25.498	16.942	13.906	13.932	6.451
RDT&E Articles Qty			2				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Navy Small Tactical Unmanned Aircraft System (STUAS) / Tier II UAS

The Small Tactical Unmanned Aircraft System/Tier II Unmanned Aircraft System (STUAS/Tier II) is a new start program that will provide persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition (ISR/TA) support for tactical level maneuver decisions and unit level force defense/force protection for Naval ships (multi-ship classes) and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. A notional system may include three air vehicles, one ground station, multi-mission (plug & play) payloads, and associated launch, recovery, and support equipment. This system will support Naval missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Naval units operating from sea/shore in the Global War on Terrorism. This system will also support Marine Corps missions such as close range UAS, enabling enhanced decision-making and improved integration with ground schemes of maneuver. The STUAS/Tier II UAS
system will continue to evolve and upgrade capabilities to satisfy capability shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include MAGTF and Navy C2 integration, a common control station with other UASs, SIGINT, SAR, & NBC detecting payloads and weapons integration.

The STUAS and Tier II programs were combined at the direction of ASN RDA in Jul 2006. The combined program is funded through separate USN and USMC Program Elements. Marine Corps RDTEN funding is in PE 0206313M. STUAS / Tier II UAS is a new start program in FY08.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

SDD DEVELOPMENT	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost			20.100
RDT&E Articles Qty			2

Award contract to initiate the System Development Demonstration (SDD) efforts for the STUAS / Tier II UAS program. The Prime System Contractor will be responsible for overall system development and performance as well as associated management, engineering and logistics activities.

ENGINEERING AND TECHNICAL SERVICES	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		6.105	5.398
RDT&E Articles Qty			

Government Technical Engineering Support, Logistics Support, Contractor Support Services, Program Management Support and travel.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305204N, TACTICAL UNMANNED AERIAL VEHICLES	PROJECT NUMBER AND NAME 3192, STUAS

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	To Complete	Total Cost
APN: 044400: 0305204N STUAS				10.099	9.109	9.511	6.048		34.767
APN Initial Spares: 060510: 0305204N STUAS				1.032	2.137	2.107	1.266		6.542
OPN: 4272 Support Equipment STUAS				8.575	4.542	4.029	4.016		21.162
PMC: 464000, Tier II UAS				20.305	9.513	18.858	15.757		Continuing
RDT&E ,N: 0206313M, Proj C2273 TIER II UAS		5.742	13.616	9.642	5.150	3.378	1.865		Continuing

D. ACQUISITION STRATEGY:
STUAS will use an evolutionary acquisition strategy. Increasing capability will be fielded in Increments. Increments 0 and 1 are funded in this FYDP. An open competition will be conducted for the fulfillment of the requirement. Increment 0 Milestone B decision is scheduled for 1Q FY09. Increment 0 Milestone C and LRIP decision is scheduled for 2Q FY10. Marine Corps IOC is 2Q FY11, and Navy IOC is 4Q FY11.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2008			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 3192, STUAS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	CPFF	TBD						20.100	11/08	48.600	68.700	68.700
SUBTOTAL PRODUCT DEVELOPMENT								20.100		48.600	68.700	

Remarks:

SUPPORT												
Integrated Logistics Sup	WX	TBD						.940	11/08	Continuing	Continuing	
SUBTOTAL SUPPORT								.940				

Remarks:

TEST & EVALUATION												
Dev Test & Eval	TBD	TBD						1.102	11/08	Continuing	Continuing	
SUBTOTAL TEST & EVALUATION								1.102				

Remarks:

MANAGEMENT												
Contractor Eng Sup	TBD	VARIOUS				1.310	12/07	.450	11/08	Continuing	Continuing	
Government Eng Sup	WX	VARIOUS				3.500	12/07	1.559	12/08	Continuing	Continuing	
Program Mgmt Sup	TBD	VARIOUS				1.260	01/08	1.312	12/08	Continuing	Continuing	
Travel	TO	NAVAIR HQ, Patuxent River. MD				.035	10/07	.035	10/08	Continuing	Continuing	
SUBTOTAL MANAGEMENT						6.105		3.356				

Remarks:

Total Cost						6.105		25.498		Continuing	Continuing	

Remarks:

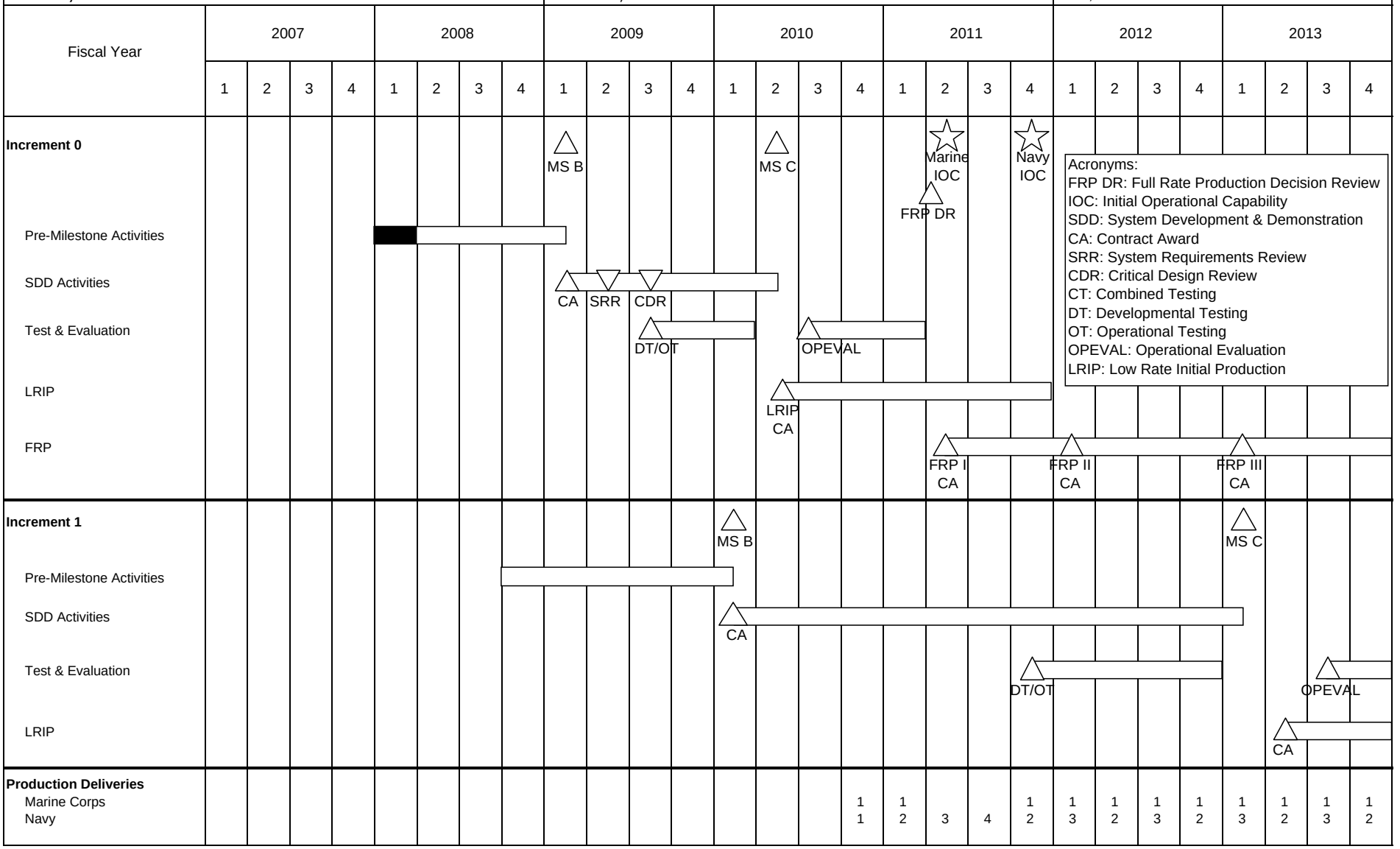
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: February 2008

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0305204N, TACTICAL UNMANNED AERIAL VEHICLES

PROJECT NUMBER AND NAME: 3192, STUAS



R-1 Line Item No. 198

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT 0305204N, TACTICAL UNMANNED AERIAL VEHICLES				PROJECT NUMBER AND NAME 3192, STUAS		
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Acquisition Milestones							
Increment 0							
Pre-Milestone Activities		1Q-4Q	1Q				
Milestone B			1Q				
System Development & Demonstration (SDD) Activities			1Q-4Q	1Q-2Q			
Contract Award (CA)			1Q				
System Requirements Review (SRR)			2Q				
Critical Design Review (CDR)			3Q				
Test & Evaluation			3Q-4Q	1Q,3Q-4Q	1Q		
Development Testing (DT) / Operational Testing (OT)			3Q-4Q	1Q			
Operational Evaluation (OPEVAL)				3Q-4Q	1Q		
Milestone C				2Q			
Low Rate Initial Production (LRIP)				2Q-4Q	1Q-4Q		
LRIP CA				2Q			
Full Rate Production Decision Review (FRP DR)					2Q		
Full Rate Production (FRP)					2Q-4Q	1Q-4Q	1Q-4Q
FRP I CA					2Q		
FRP II CA						1Q	
FRP III CA							1Q
Marine Initial Operational Capability (IOC)					2Q		
Navy Initial Operational Capability (IOC)					4Q		
Increment 1							
Pre-Milestone Activities		4Q	1Q-4Q	1Q			
Milestone B				1Q			
SDD Activities				1Q-4Q	1Q-4Q	1Q-4Q	1Q
Contract Award (CA)				1Q			
Test & Evaluation					4Q	1Q-4Q	3Q-4Q
Development Testing (DT) / Operational Testing (OT)					4Q	1Q-4Q	
Operational Evaluation (OPEVAL)							3Q-4Q
Milestone C							1Q
Low Rate Initial Production (LRIP)							2Q-4Q
LRIP CA							2Q
Production Deliveries							
Marine Corps				4Q	1Q,4Q	1Q-4Q	1Q-4Q
Navy				4Q	1Q-4Q	1Q-4Q	1Q-4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0305204N TACTICAL UNMANNED AERIAL VEHICLES			PROJECT NUMBER AND NAME 9999 Congressional Adds			
COST ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
9999 Congressional Adds	**4.781**	**6.921**					
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Adds

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0305204N TACTICAL UNMANNED AERIAL VEHICLES	9999 Congressional Adds

B. Accomplishments/Planned Program

9650C ADVANCED AIRSHIP FLYING LABORATORY	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.996		
RDT&E Articles Quantity			

Advanced Airship Flying Laboratory. Continue the development of new technologies to advance modern airships, such as digital automated flight controls, bow thrusters, and heavy fuel engines. Government Engineering Support, contractor support services, and travel.

9B02N NBC Payload Detection	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.594		
RDT&E Articles Quantity			

Develop an NBC Payload Detection for Small Tactical UAV. Develop integration and test plans for the NBC Payload. Execute the flight test program and report results. Government Engineering Support, contractor support services, and travel.

9B03N TCS Open Architecture	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.996	2.966	
RDT&E Articles Quantity			

Develop and accelerate Open Architecture Technology Insertion solution. Government Engineering Support, contractor support services, and travel.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0305204N TACTICAL UNMANNED AERIAL VEHICLES	9999 Congressional Adds

B. Accomplishments/Planned Program Continued:

2261C Joint Strike Fighter (JSF)	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.195		
RDT&E Articles Quantity			

Develop and accelerate Open Architecture Technology insertion solution. Government engineering support, contractor support services, and travel.

XXXX Micro-munitions Interface for Tactical UAS	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		3.955	
RDT&E Articles Quantity			

Develop an interface between Unmanned Air Systems and micro-munitions, defined as weapons weighing less than 100 pounds. Government engineering support, contractor support services, and travel.