



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-253



MQ-8 Fire Scout Unmanned Aircraft System (MQ-8 Fire Scout)

As of FY 2011 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV)

DoD Component

Navy

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References

SAR Baseline (Development Estimate)

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated December 22, 2006

Approved APB

NAE Approved Acquisition Program Baseline (APB) dated February 2, 2009

Mission and Description

The Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) program supports the Close Range Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability Mission Need Statement (MNS), validated January 1990. Additionally, the performance attributes of the VTUAV support the Littoral Combat Ship (LCS), the Vertical Unmanned Air Vehicle, the Assured Maritime Access in the Littorals, the Joint Strike Enable (JSE) and the Penetrating Intelligence, Surveillance, and Reconnaissance for Area Denial Threat Environments Initial Capabilities Documents. The VTUAV system provides varied mission capabilities in support of Sea Power 21.

A VTUAV system is composed of air vehicles, Electro Optic, Infrared, Laser Designator Range Finder payloads (one per air vehicle), Ground Control Stations (GCS), Tactical Control System (TCS) software, Tactical Common Data Link, Unmanned Air Vehicle Common Automatic Recovery System for automatic take-offs and landings, and associated spares and support equipment. The VTUAV launches and recovers vertically and can operate from all air capable ships as well as confined area land bases. Other characteristics include autonomous waypoint navigation with command override capability, a heavy fuel engine, and the ability to incorporate future mission packages. Each GCS will perform mission planning, air vehicle and mission payload control, receive incoming payload data and distribute the data to existing shipboard C4I systems.

Executive Summary

The VTUAV program was initiated in FY00 as an Acquisition Category (ACAT) II program with Milestone (MS) II approval. During FY02, the VTUAV program was descoped to a technology demonstration effort. In FY03, the VTUAV program was restructured with increased performance scope and reinstated as an ACAT II program. The program received congressional plus-ups in FY04 & 05 to purchase more systems and to meet increased scope requirements. The projected program costs of the restructuring elevated the program to an ACAT IC.

The VTUAV is currently in the Low Rate Initial Production (LRIP) phase of the acquisition life cycle. Flight testing of the system is nearly complete. The system has been developed to meet a Capabilities Production Document (CPD), which was signed by the Joint Requirements Oversight Counsel (JROC) in June 2007.

Seven Engineering, Manufacturing, and Development (EMD) air vehicles and supporting ground systems have been procured for the conduct of development and integration of the weapon system aboard air capable ships. Three LRIP units were procured with the MS C authorization from the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN(RD&A)), in May 2007. An additional 6 LRIP air vehicles have been authorized through a second LRIP decision in August 2008. This LRIP decision included both FY08 and FY09 quantities.

In FY08, delays in the Littoral Combat Ship (LCS) program made the ship unavailable to support the VTUAV Operational Evaluation (OPEVAL) during the planned timeframe, causing the VTUAV program to breach remaining scheduled milestones. Efforts began to field VTUAV aboard a Guided Missile Frigate (FFG-8, USS MCINERNEY) in FY09 with a Military Utility Assessment (MUA) that was intended to support Operational Testing during the same time frame. Reliability issues uncovered during the MUA have delayed the Operational Testing events and resolution of the issues has caused the program to breach the remaining schedule milestones.

The program has continued to support the LCS program as a parallel effort. With the delay and changes to the LCS test and evaluation periods over the last year, additional Research, Development, Test and Evaluation (RDT&E) funds were added to VTUAV in the FY11 President's Budget to cover the new test periods. The addition of these funds has caused an RDT&E threshold breach.

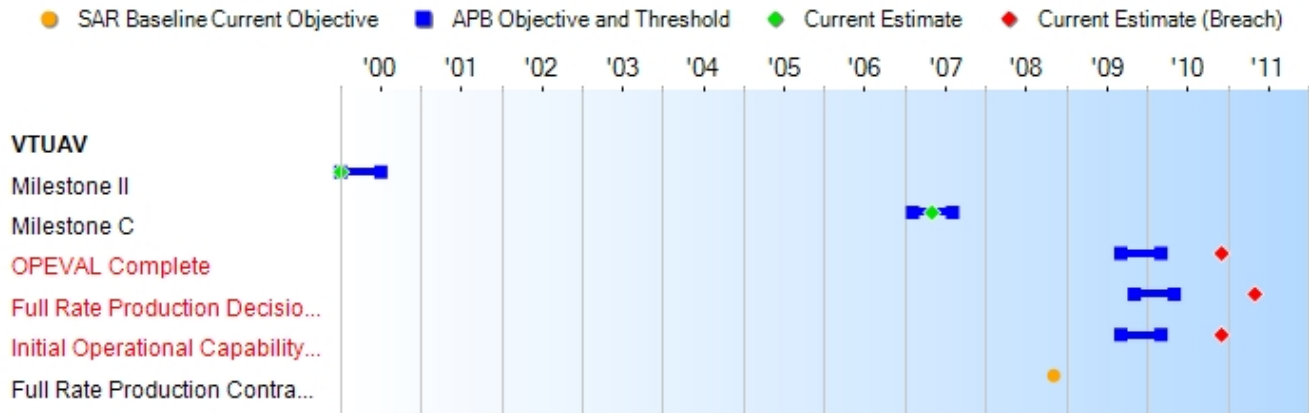
A total of up to 168 production air vehicles will be procured.

Past software developmental delays have contributed to missing the Acquisition Program Baseline (APB) schedule milestones. Software development for full program functionality has been completed at this time. However, an additional software build will be required to correct deficiencies found in flight testing to support Operational Evaluation. There are no significant software issues at this time.

Threshold Breaches

APB Breaches		Explanation of Breach
Schedule	<input checked="" type="checkbox"/>	<p>In FY08, delays in the Littoral Combat Ship (LCS) program made the ship unavailable to support the VTUAV Operational Evaluation (OPEVAL) during the planned timeframe, causing the VTUAV program to breach remaining scheduled milestones. Efforts began to field VTUAV aboard a Guided Missile Frigate (FFG-8, USS MCINERNEY) in FY09 with a Military Utility Assessment (MUA) that was intended to support Operational Testing during the same time frame. Reliability issues uncovered during the MUA have delayed the Operational Testing events and resolution of the issues have caused the program to breach the remaining schedule milestones for Operational Evaluation, Initial Operational Capability, and Full Rate Production.</p> <p>The program has continued to support the LCS program as a parallel effort. With the delay and changes to the LCS test and evaluation periods over the last year, additional RDT&E funds were added to VTUAV in the FY11 President's Budget to cover the new test periods. The addition of these funds has caused an RDT&E threshold breach.</p> <p>A Program Deviation Report (PDR) was submitted in January of 2010.</p> <p>The program's Acquisition Program Baseline (APB) is being updated.</p>
Performance	<input type="checkbox"/>	
Cost	<input checked="" type="checkbox"/>	
RDT&E	<input type="checkbox"/>	
Procurement	<input type="checkbox"/>	
MILCON	<input type="checkbox"/>	
Acq O&M	<input type="checkbox"/>	
O&S Cost	<input type="checkbox"/>	
Unit Cost	<input type="checkbox"/>	
PAUC	<input type="checkbox"/>	
APUC	<input type="checkbox"/>	
Nunn-McCurdy Breaches		
Current UCR Baseline		
PAUC	None	
APUC	None	
Original UCR Baseline		
PAUC	None	
APUC	None	

Schedule



Schedule Events					
Events	SAR Baseline Development Estimate	Current APB Production Objective/Threshold		Current Estimate	
Milestone II	Jan 2000	Jan 2000	Jul 2000	Jan 2000	
Milestone C	Feb 2007	Feb 2007	Aug 2007	May 2007	
OPEVAL Complete	Aug 2008	Sep 2009	Mar 2010	Dec 2010¹	(Ch-1)
Full Rate Production Decision Review	Oct 2008	Nov 2009	May 2010	May 2011¹	(Ch-1)
Initial Operational Capability (IOC)	Sep 2008	Sep 2009	Mar 2010	Dec 2010¹	(Ch-1)
Full Rate Production Contract Award	Nov 2008	N/A	N/A	N/A	(Ch-2)

¹ APB Breach

Change Explanations

(Ch-1) OPEVAL Complete has changed from MAR 2010 to DEC 2010, Full Rate Production Decision Review has changed from MAY 2010 to MAY 2011, and Initial Operational Capability has changed from MAR 2010 to DEC 2010 due to delays in the completion of OPEVAL. In FY08, delays in the Littoral Combat Ship (LCS) program made the ship unavailable to support the VTUAV Operational Evaluation (OPEVAL) during the planned timeframe, causing the VTUAV program to breach remaining scheduled milestones. Efforts began to field VTUAV aboard a Guided Missile Frigate (FFG-8, USS MCINERNEY) in FY09 with a Military Utility Assessment (MUA) that was intended to support Operational Testing (OT) during the same time frame. Reliability issues uncovered during the MUA have delayed the OT events and resolution of the issues have caused the program to breach the remaining schedule milestones. Software deficiency corrections during flight testing also contributed to missing schedule milestones. The net unfavorable program performance metrics are a result of addressing these anomalies within the program. This program delay has also increased the program's RDT&E costs beyond the APB threshold causing a cost breach. Total acquisition cost will be rebaselined as part of the Navy effort to account for the program delays.

The current estimates are based on having an FFG class ship available to support testing. The Navy is scheduling a program review to finalize the VTUAV program restructure plan and a new Acquisition Program Baseline (APB) will be routed when these efforts are complete.

(Ch-2) Full Rate Procusion contract Award changed from NOV 2008 to N/A because this milestone was deleted as redundant during the last APB update

Acronyms and Abbreviations

IOC - Initial Operational Capability

OPEVAL - Operational Evaluation

Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Automatic Launch/Recovery (Air-capable Ship & Land)				
Deck Pitch (degrees)				
+/- 5	N/A	N/A	N/A	N/A ¹
Deck Roll (degrees)				
+/- 8	N/A	N/A	N/A	N/A ¹
Deck Restraint Capability				
All air capable ships (%)				
100	N/A	N/A	N/A	N/A ¹
General Air Vehicle-MMP Control				
Pass GCS to GCS (%)				
100	N/A	N/A	N/A	N/A ¹
VTOL Operations (Air Capable Ships)				
Deck Pitch (degrees)				
+/- 5	N/A	N/A	N/A	N/A ¹
Deck Roll (degrees)				
+/- 8	N/A	N/A	N/A	N/A ¹
MMP (pounds)				
300	N/A	N/A	N/A	N/A ¹
Mission Fuel Load (%)				
100	N/A	N/A	N/A	N/A ¹
VTUAV GCS AV-MMP Control				
Pass from GCS to GCS (%)				
100	N/A	N/A	N/A	N/A ¹
Fuel Type (JP-5/JP-8)				
Diesel				
Yes	N/A	N/A	N/A	N/A ¹
Interoperability				
TCS Compliant (%)				
100	N/A	N/A	N/A	N/A ¹
Automatic Launch/Recovery (Ship Operations)				

Deck Pitch (degrees)				
N/A	+/- 5	+/-3	+/- 2 at sea; +/- 5 land	+/-5
Deck Roll (degrees)				
N/A	+/- 8	+/- 5	+/- 5 at sea; +/- 10 land	+/- 8
Target Identification				
Slant Range (km)				
N/A	16	6	10	16
Operational Availability				
N/A	>= 0.95	>= 0.85	0.85	>= 0.95
Net-Ready				
N/A	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric Military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1. 2) DISR mandated GIG IPs identified in the KIP declaration table. 3) NCOW-RM Enterprise Services. 4) IA requirements including availability, integrity, authentication, confidentiality, and issuance of an ATO by the DAA. 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architectural views.	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric Military operations to include 1) ISR mandated GIG IT standards and profiles identified in the TV-1. 2) DISR mandated GIG KIPs identified in the KIP declaration table. 3) NCOW-RM Enterprise Services. 4) IA requirements including availability, integrity, authentication, confidentiality, and issuance of an IATO by the DAA. 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architectural views.	The system has demonstrated all Net Ready Capabilities that have been implemented in the host FFG and LCS class ships.	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric Military operations to include 1) ISR mandated GIG IT standards and profiles identified in the TV-1. 2) DISR mandated GIG KIPs identified in the KIP declaration table. 3) NCOW RW Enterprise Services. 4) IA requirements including availability, integrity, authentication, confidentiality, and issuance of an IATO by the DAA. 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architectural views.

¹ APB Breach

Requirements Reference

Joint Requirements Oversight Council (JROC) approved VTUAV Capability Production Document (CPD) 141-07 June 11, 2007

Change Explanations

None

Notes

The Capability Production Document, dated May 15, 2009, focused the Key Performance Parameters (KPPs) on overall system performance. Target Identification, Operational Availability and Net-Ready KPPs were added in this document. The previous Operational Requirements Document KPPs were mostly centered on ship integration requirements.

Acronyms and Abbreviations

ATO - Authority to Operate
AV - Air Vehicle
DAA - Designated Approving Authority
DISR - Defense Information Standards Registry
GCS - Ground Control System
GIG - Global Information Grid
IA - Information Assurance
IP - Information Protocol
ISR - Information Standards Registry
IT - Information Technology
KIP - Key Information Protocol
MMP - Modular Mission Payload
NCOW RM - Net-Centric Operational Warfare Reference Model
VTOL - Vertical Take-off and Landing

Track to Budget

RDT&E

Appn	BA	PE	
Navy	1319	07	0305204N
	Project		Name
	2478		Tactical Unmanned Aerial Vehicles/Tactical Control System (Shared)
			Notes: PU2768, VTUAV
	2910		Tactical Unmanned Aerial Vehicles/Joint Technology Center / System Integration Lab (Shared) (Sunk)
			Notes: PU2768, VTUAV
	3135		Tactical Unmanned Aerial Vehicles/USMC VUAV (Shared)
			Notes: PU2768, VTUAV
	3192		Tactical Unmanned Aerial Vehicles/STUAS (Sunk)
			Notes: PU2768, VTUAV
	9999		Tactical Unmanned Aerial Vehicles/Congressional Adds
			Notes: PU2768, VTUAV
	2768		Tactical Unmanned Aerial Vehicles/VTUAV (Shared) (Sunk)
			Notes: PU2768, VTUAV

Navy 1319 07 0305231N

Project	Name
2768	MQ-8 UAV
	Notes: PU2768, MQ-8 UAV

Notes

Projects 2478, 2910, 3135, 3192 and 9999 were part of the same RDT&E Program Element (PE) but are not part of the VTUAV program.

In FY10, VTUAV was moved from PE 0305204N to PE 0305231N.

Procurement

Appn	BA	PE	
Navy	1506	04	0305204N
	Line Item		Name
	044300		Vertical Take-off UAV (VTUAV) (Sunk)
Navy	1506	04	0305231N

Line Item	Name
044300	MQ-8 Unmanned Air Vehicles (UAV)

Navy

1506 06 0305231N

Line Item	Name
0605	Tactical Unmanned Aerial Vehicles / Spares and Repair Parts (Shared)

Notes

In FY10, VTUAV was moved from PE 0305204N to PE 0305231N

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2006 \$M			BY 2006 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Production Objective	Current Estimate
RDT&E	541.1	541.1	595.2	603.8 ¹	530.3	530.3	600.2
Procurement	1522.4	1522.4	1674.6	1663.6	1821.5	1821.5	2024.6
Flyaway	--	--	--	1301.3	--	--	1594.3
Recurring	--	--	--	1267.2	--	--	1554.0
Non Recurring	--	--	--	34.1	--	--	40.3
Support	--	--	--	362.3	--	--	430.3
Other Support	--	--	--	231.7	--	--	271.8
Initial Spares	--	--	--	130.6	--	--	158.5
MILCON	119.6	119.6	131.6	0.0	126.0	126.0	0.0
Acq O&M	183.3	183.3	201.6	0.0	309.3	309.3	0.0
Total	2366.4	2366.4	N/A	2267.4	2787.1	2787.1	2624.8

¹ APB Breach

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Production	Current Estimate
RDT&E		9	7
Procurement		168	168
Total		177	175

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2011 President's Budget / December 2009 SAR (TY\$ M)									
Appropriation	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
RDT&E	554.7	25.5	10.7	3.6	0.5	0.5	0.5	4.2	600.2
Procurement	145.7	93.1	51.0	47.3	69.8	90.3	90.3	1437.1	2024.6
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2011 Total	700.4	118.6	61.7	50.9	70.3	90.8	90.8	1441.3	2624.8
PB 2009 Total	662.8	100.0	81.0	98.4	105.0	175.6	189.5	746.0	2158.3
Delta	37.6	18.6	-19.3	-47.5	-34.7	-84.8	-98.7	695.3	466.5

Funding Notes

FY09, FY10, and FY11 include RDT&E and Procurement funds for the addition of future capabilities to the system.

Quantity Summary										
FY 2011 President's Budget / December 2009 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	To Complete	Total
Development	7	0	0	0	0	0	0	0	0	7
Production	0	9	5	3	3	4	6	6	132	168
PB 2011 Total	7	9	5	3	3	4	6	6	132	175
PB 2009 Total	9	9	6	6	9	10	18	20	90	177
Delta	-2	0	-1	-3	-6	-6	-12	-14	42	-2

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2000	--	--	--	--	--	--	34.8
2001	--	--	--	--	--	--	66.2
2002	--	--	--	--	--	--	47.8
2003	--	--	--	--	--	--	39.3
2004	--	--	--	--	--	--	36.0
2005	--	--	--	--	--	--	59.1
2006	--	--	--	--	--	--	93.2
2007	--	--	--	--	--	--	100.0
2008	--	--	--	--	--	--	62.8
2009	--	--	--	--	--	--	15.5
2010	--	--	--	--	--	--	25.5
2011	--	--	--	--	--	--	10.7
2012	--	--	--	--	--	--	3.6
2013	--	--	--	--	--	--	0.5
2014	--	--	--	--	--	--	0.5
2015	--	--	--	--	--	--	0.5
2016	--	--	--	--	--	--	1.4
2017	--	--	--	--	--	--	1.4
2018	--	--	--	--	--	--	1.4
Subtotal	7	--	--	--	--	--	600.2

Annual Funding 1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2006 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2000	--	--	--	--	--	--	38.6
2001	--	--	--	--	--	--	72.4
2002	--	--	--	--	--	--	51.8
2003	--	--	--	--	--	--	42.0
2004	--	--	--	--	--	--	37.4
2005	--	--	--	--	--	--	59.8
2006	--	--	--	--	--	--	91.5
2007	--	--	--	--	--	--	95.8
2008	--	--	--	--	--	--	59.1
2009	--	--	--	--	--	--	14.4
2010	--	--	--	--	--	--	23.5
2011	--	--	--	--	--	--	9.7
2012	--	--	--	--	--	--	3.2
2013	--	--	--	--	--	--	0.4
2014	--	--	--	--	--	--	0.4
2015	--	--	--	--	--	--	0.4
2016	--	--	--	--	--	--	1.2
2017	--	--	--	--	--	--	1.1
2018	--	--	--	--	--	--	1.1
Subtotal	7	--	--	--	--	--	603.8

Annual Funding 1506 Procurement Aircraft Procurement, Navy								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2007	3	25.4	--	5.9	31.3	11.8	43.1	
2008	3	22.7	--	1.8	24.5	21.0	45.5	
2009	3	26.0	--	1.6	27.6	29.5	57.1	
2010	5	65.5	--	1.9	67.4	25.7	93.1	
2011	3	24.1	--	1.1	25.2	25.8	51.0	
2012	3	24.2	--	2.0	26.2	21.1	47.3	
2013	4	47.1	--	0.8	47.9	21.9	69.8	
2014	6	66.3	--	1.2	67.5	22.8	90.3	
2015	6	67.1	--	1.2	68.3	22.0	90.3	
2016	18	179.9	--	3.4	183.3	49.3	232.6	
2017	24	220.3	--	4.2	224.5	48.0	272.5	
2018	30	273.3	--	5.3	278.6	57.1	335.7	
2019	30	280.9	--	5.4	286.3	57.8	344.1	
2020	30	231.2	--	4.5	235.7	16.5	252.2	
Subtotal	168	1554.0	--	40.3	1594.3	430.3	2024.6	

Annual Funding 1506 Procurement Aircraft Procurement, Navy								
Fiscal Year	Quantity	BY 2006 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2007	3	24.0	--	5.6	29.6	11.2	40.8	
2008	3	21.2	--	1.7	22.9	19.5	42.4	
2009	3	24.0	--	1.5	25.5	27.1	52.6	
2010	5	59.6	--	1.7	61.3	23.4	84.7	
2011	3	21.6	--	1.0	22.6	23.1	45.7	
2012	3	21.3	--	1.8	23.1	18.6	41.7	
2013	4	40.8	--	0.7	41.5	19.0	60.5	
2014	6	56.5	--	1.0	57.5	19.4	76.9	
2015	6	56.2	--	1.0	57.2	18.4	75.6	
2016	18	148.1	--	2.8	150.9	40.6	191.5	
2017	24	178.4	--	3.4	181.8	38.8	220.6	
2018	30	217.6	--	4.2	221.8	45.4	267.2	
2019	30	219.9	--	4.2	224.1	45.2	269.3	
2020	30	178.0	--	3.5	181.5	12.6	194.1	
Subtotal	168	1267.2	--	34.1	1301.3	362.3	1663.6	

Total flyaway costs include ship and land-based Control Stations as well as other ship ancillary equipment. FY10 includes Overseas Contingency Operations (OCO) funds to purchase additional land-based Control Stations.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	5/29/2007	9/30/2008
Approved Quantity	4	9
Reference	VTUAV MS C ADM signed 29 May 2007	VTUAV Program Review ADM signed 30 Sep 2008
Start Year	2007	2007
End Year	2007	2009

The Initial MS C ADM approved the program to purchase up to 4 air vehicles, and to buy to budget. This guidance resulted in a purchase of 3 air vehicles.

LRIP decision on September 30, 2008, authorized purchase of 3 air vehicles for LRIP 2 and 3 air vehicles for LRIP 3.

Planned program restructure that will be discussed at the upcoming program review will request that FY10 production air vehicles will be procured as LRIP 4 vice Full Rate Production. Total LRIP quantity will still remain below 10% of the projected buy.

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost

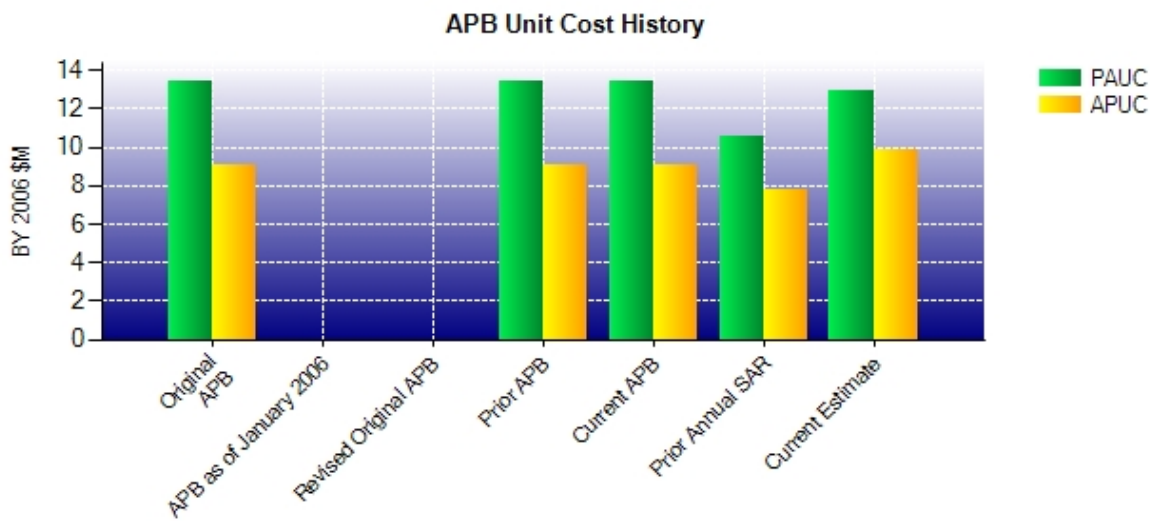
Unit Cost Report

Item	BY 2006 \$M	BY 2006 \$M	% Change
	Current UCR Baseline (Feb 2009 APB)	Current Estimate (Dec 2009 SAR)	
Program Acquisition Unit Cost			
Cost	2366.4	2267.4	
Quantity	177	175	
Unit Cost	13.369	12.957	-3.08
Average Procurement Unit Cost			
Cost	1522.4	1663.6	
Quantity	168	168	
Unit Cost	9.062	9.902	+9.27

Item	BY 2006 \$M	BY 2006 \$M	% Change
	Original UCR Baseline (Dec 2006 APB)	Current Estimate (Dec 2009 SAR)	
Program Acquisition Unit Cost			
Cost	2366.4	2267.4	
Quantity	177	175	
Unit Cost	13.369	12.957	-3.08
Average Procurement Unit Cost			
Cost	1522.4	1663.6	
Quantity	168	168	
Unit Cost	9.062	9.902	+9.27

Due to the stretch-out of the procurement profile, the unit cost for the air vehicles has increased. The original Acquisition Performance Baseline (BY06) projected that 131 of the 168 production aircraft would be procured by FY15. Based on FY11 President's Budget, only 36 of the 168 aircraft will be procured by FY15. The lower yearly production rate, at or near minimum sustaining rate each year, and the increasing number of years required to produce the total aircraft is the major contributor to the growth in APUC.

Unit Cost History



Item	Date	BY 2006 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Dec 2006	13.369	9.062	15.746	10.842
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Dec 2006	13.369	9.062	15.746	10.842
Current APB	Feb 2009	13.369	9.062	15.746	10.842
Prior Annual SAR	Dec 2007	10.592	7.795	12.194	9.515
Current Estimate	Dec 2009	12.957	9.902	14.999	12.051

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
15.746	-0.051	0.112	0.957	0.511	-2.365	0.000	0.089	-0.747	14.999

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
10.842	-0.128	0.000	0.997	0.117	0.130	0.000	0.093	1.209	12.051

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	Jan 2000	N/A	Jan 2000
Milestone C	N/A	Feb 2007	N/A	May 2007
IOC	N/A	Sep 2008	N/A	N/A
Total Cost (TY \$M)	N/A	2787.1	N/A	2624.8
Total Quantity	N/A	177	N/A	175
PAUC	N/A	15.746	N/A	14.999

Cost Variance

Summary TY \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	530.3	1821.5	126.0	309.3	2787.1
Previous Changes					
Economic	+13.3	+27.6	--	--	+40.9
Quantity	--	--	--	--	--
Schedule	--	+2.5	--	--	+2.5
Engineering	+33.9	+6.3	--	--	+40.2
Estimating	-17.8	-248.6	-126.0	-309.3	-701.7
Other	--	--	--	--	--
Support	--	-10.7	--	--	-10.7
Subtotal	+29.4	-222.9	-126.0	-309.3	-628.8
Current Changes					
Economic	-0.8	-49.1	--	--	-49.9
Quantity	-12.0	--	--	--	-12.0
Schedule	--	+164.9	--	--	+164.9
Engineering	+35.9	+13.4	--	--	+49.3
Estimating	+17.4	+270.5	--	--	+287.9
Other	--	--	--	--	--
Support	--	+26.3	--	--	+26.3
Subtotal	+40.5	+426.0	--	--	+466.5
Adjustments	--	--	--	--	--
Total Changes	+69.9	+203.1	-126.0	-309.3	-162.3
Current Estimate	600.2	2024.6	--	--	2624.8

Summary BY 2006 \$M					
Item	RDT&E	Procurement	MILCON	Acq O&M	Total
SAR Baseline (Development Estimate)	541.1	1522.4	119.6	183.3	2366.4
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	+30.9	+4.8	--	--	+35.7
Estimating	-6.7	-209.0	-119.6	-183.3	-518.6
Other	--	--	--	--	--
Support	--	-8.7	--	--	-8.7
Subtotal	+24.2	-212.9	-119.6	-183.3	-491.6
Current Changes					
Economic	--	--	--	--	--
Quantity	-11.5	--	--	--	-11.5
Schedule	--	+103.5	--	--	+103.5
Engineering	+33.7	+12.3	--	--	+46.0
Estimating	+16.3	+219.6	--	--	+235.9
Other	--	--	--	--	--
Support	--	+18.7	--	--	+18.7
Subtotal	+38.5	+354.1	--	--	+392.6
Adjustments	--	--	--	--	--
Total Changes	+62.7	+141.2	-119.6	-183.3	-99.0
Current Estimate	603.8	1663.6	--	--	2267.4

Previous Estimate: December 2007

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.8
Quantity reduction of material for 2 prototype Air Vehicles (Quantity)	-11.5	-12.0
Adjustment for current and prior escalation. (Estimating)	+0.2	+0.2
Change in funding due to departmental priority shifts (Estimating)	-6.3	-7.0
Increase in RDT&E funding to support additional LCS Operational Testing Periods (Estimating)	+10.9	+12.2
Increase in RDT&E budget to account for software delays in completing the SD&D contract (Estimating)	+11.5	+12.0
Changes associated with the integration costs to support an additional ship class (Engineering)	+33.7	+35.9
RDT&E Subtotal	+38.5	+40.5

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-49.1
Adjustment for current and prior escalation. (Estimating)	+0.8	+1.0
Increase in air vehicle unit cost due to extended time procuring at minimum sustaining rate (Estimating)	+227.9	+279.6
Decrease in budget for program realignment to Littoral Combat Ship schedule (Estimating)	-8.6	-9.5
Revised estimate to reflect actuals (Estimating)	0.0	-0.2
Correction to align support and flyaway. (Subtotal)	0.0	0.0
(Estimating)	(-0.5)	(-0.4)
(Support)	(+0.5)	(+0.4)
Addition of Overseas Contingency Operations (OCO) Funds to purchase equipment for land-based operations (Engineering)	+12.3	+13.4
Increase due to the stretch-out of the ground control station procurement profile from FY10 to beyond FY15 (Schedule)	+103.5	+131.9
Increase due to the stretch-out of the air vehicle procurement buy profile from FY10 to beyond FY15 (Schedule)	0.0	+33.0
Adjustment for current and prior escalation. (Support)	+0.8	+0.8
Decrease in Other Support budget (Support)	-25.5	-29.3
Increase in Initial Spares due to component cost increases (Support)	+42.9	+54.4
Procurement Subtotal	+354.1	+426.0

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: NGC SD&D
Contractor: Northrop Grumman
Contractor Location: San Diego, CA 92150
Contract Number: N00019-00-C-0277
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: February 09, 2000
Definitization Date: June 04, 2006

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
93.7	N/A	1	445.8	N/A	7	476.6	491.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2010)	-26.2	-2.4
Previous Cumulative Variances	-4.8	-14.6
Net Change	-21.4	+12.2

Cost and Schedule Variance Explanations

General Contract Variance Explanation

Program restructure to support the change in Operational Evaluation platform from the Littoral Combat System to Guided Missile Frigate (FFG-8) in February of 2008 put pressure on the contract cost and schedule. Because the contract is nearly expended and complete, the decision was made not to rebaseline the schedule to support the restructured plan. The unfavorable cost metrics are a result of these descisions. The schedule metrics are favorable because we are nearing the end of the contract.

Notes

The current target price of the contract is higher than the initial target price due to the scope growth of the program from an RQ-8A air vehicle to an ACAT IC system designed to support air capable ships with an MQ-8B air vehicle.

The original Feb 2000 Cost Plus Incentive Fee contract has been modified to account for numerous program changes from an ACAT II "off the shelf" minimal development effort, to a demonstration program, then resurrected as an ACAT IC cooperative program with the Army and Littoral Combat System Mission Module Intelligence, Surveillance, and Reconnaissance platform, and now integration with an Guided Missile Frigate (FFG).

This contract is more than 90% expended and will no longer be reported.

Contract Identification

Appropriation: Procurement
Contract Name: LRIP
Contractor: Northrop Grumman Corporation
Contractor Location: San Diego, CA 92150-9066
Contract Number: N00019-07-C-0041
Contract Type: Firm Fixed Price (FFP)
Award Date: June 21, 2007
Definitization Date: April 24, 2008

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
40.3	N/A	3	110.0	N/A	9	110.0	110.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	7	5	7	71.43%
Production	3	3	168	1.79%
Total Program Quantity Delivered	10	8	175	4.57%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	2624.8	Years Appropriated	11
Expended to Date	640.9	Percent Years Appropriated	52.38%
Percent Expended	24.42%	Appropriated to Date	819.0
Total Funding Years	21	Percent Appropriated	31.20%

Production delivery schedule has been re-baselined due to program restructure to support Guided Missile Frigate (FFG) integration requirements. RDT&E aircraft N6 & N7 are nearing delivery at Webster Field and are expected to be accepted in spring of FY10.

Operating and Support Cost

Assumptions and Ground Rules

- VTUAV Total Average Annual Cost per Aircraft \$M: \$2033.2 / 21 Years / 92 PAA=\$1.052
- Estimate Duration: Fiscal Year (FY) 2010 to 2030, 21 years with approved flight hours
- Average Flight Hours per Month per Aircraft: 24.2
- VTUAV Assumptions:
 - Total Procured AV: 168
 - Aircraft Attrition Rate: 7.09 air vehicles per 100,000 hours
 - Aircraft per MH-60R Det: 2 air vehicles
 - Aircraft per MH-60S Det: 1 air vehicle
 - PAA: 92
 - Total Flight Hours over Lifetime: 553170
 - Avg FH / AV / Year: 290

Cost Estimate Reference:

None

Sustainment Strategy:

None

Antecedent Information:

None

Unitized O&S Costs BY2006 \$M		
Cost Element	VTUAV Average Annual Cost Per Air Vehicle	No Antecedent (Antecedent) N/A
Mission Pay & Allowance	0.191	--
Unit Level Consumption	0.542	--
Intermediate Maintenance	0.000	--
Depot Maintenance	0.081	--
Contractor Support	0.098	--
Sustaining Support	0.045	--
Indirect	0.096	--
Other	0.000	--
Total	1.053	--

Unitized Cost Comments:

None

Item	Total O&S Cost \$M			
	VTUAV			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	3456.2	3801.8	2033.2	N/A
Then Year	9116.6	N/A	2889.1	N/A

Total O&S Cost Comment

Please Note – previous submissions were not accurately reported in standard SAR submission of “Cost Per Air Vehicle” for each of the CAPE Elements. NAVAIR's cost estimating branch, AIR 4.2, is implementing standardized reporting procedures across all platforms.

Current SAR report is based on Cost per Air Vehicle in BY06\$M

- Total O&S Costs for the VTUAV represents the program's current estimate for 168 procured aircraft with a PAA of 92 over the estimate duration of 2010 to 2030. This estimate includes attrition of 7.09 aircraft for every 100,000 flight hours.
- Average Annual Cost Per Air Vehicle is calculated by dividing Total O&S Cost by the estimate duration and dividing this by the average number of aircraft over the same period.

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2006 \$M):