Selected Acquisition Report (SAR)

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

VTUAV

As of December 31, 2011

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Program Information

Designation And Nomenclature (Popular Name)

Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle - MQ-8 Fire Scout (VTUAV)

DoD Component

Navy

Responsible Office

Responsible Office

CAPT Patrick Smith
22707 Cedar Point Road
Building 3261
Patuxent River, MD 20670
patrick.smith@navy.mil

Phone 301-757-9020
Fax 301-757-7261
DSN Phone 757-9020
DSN Fax 757-7261
Date Assigned June 17, 2011

References

SAR Baseline (Production Estimate)

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

Approved APB

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated June 20, 2011

Mission and Description

The VTUAV program supports the Close Range Reconnaissance, Surveillance and Target Acquisition Capability Mission Need Statement, validated January 1990. Additionally, the performance attributes of the VTUAV support the Littoral Combat Ship, the Vertical Unmanned Air Vehicle (UAV), the Assured Maritime Access in the Littorals, the Joint Strike Enable and the Penetrating Intelligence, Surveillance, and Reconnaissance for Area Denial Threat Environments Initial Capabilities Documents. The VTUAV system also 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 software, Tactical Common Data Link, UAV 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 Command, Control, Communication, and Computer Information systems.

Executive Summary

The VTUAV was fielded aboard a Guided Missile Frigate (FFG-40, USS Halyburton) in FY 2010/2011 with a Military Utility Assessment (MUA) to support anti-piracy operations off the Horn of Africa. Efforts to use this ship to support Operational Testing (OT) prior to deployment were unsuccessful due to continued efforts to resolve reliability issues. The program now plans to complete an OT in the third quarter of FY 2012 aboard the USS Klakring, FFG-56. VTUAV will also be fielded aboard the USS Simpson, FFG-8, in the second quarter of FY 2012 with an MUA to support Africa Partnership Station missions. In FY 2011, a Fire Scout system was also fielded in Afghanistan to support the Intelligence, Surveillance and Reconnaissance (ISR) Task Force. These deployments, plus additional operational deployments discussed below are pressurizing the existing VTUAV spares pool.

Funding was added to Program Element (PE) 0305231N in FY 2010 - 2012 to integrate a weapon and a RADAR onto the platform through separate Rapid Deployment Capability (RDC) efforts. Partial funding for the procurement of RADAR units in support of the RADAR effort is also included within the PE.

In the FY 2012 President's Budget, funding was added to the PE for an endurance upgrade to VTUAV to fill an interim capability to provide ISR for Support to Special Operations Forces prior to fielding of a new start Medium Range Maritime Unmanned Air System. In FY 2012, efforts began to execute this effort as an RDC. This RDC will purchase 28 upgraded (more capable) air vehicles (AVs), 10 Ground Control Stations, and associated spare parts and ancillary equipment. All aircraft being purchased in FY 2012 through FY 2014 and three of the aircraft being purchased in FY 2015 are associated with this effort.

This SAR only reports the costs and funding associated with the VTUAV Acquisition Category (ACAT) IC effort. The funds and AVs associated with the Endurance Upgrade RDC, Weapons RDC, RADAR RDC and RADAR subprogram are not addressed in this SAR.

The program has continued to support the Littoral Combat Ship program as a parallel effort.

A total of up to 168 production and seven development air vehicles are planned to be procured for the VTUAV baseline effort.

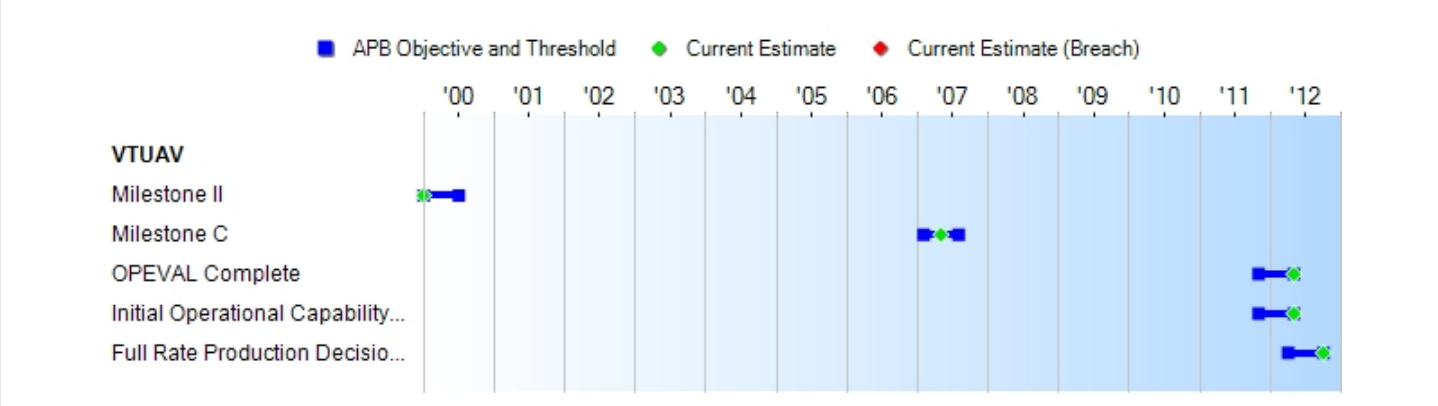
There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Milestones	SAR Baseline Prod Est	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	SEP 2009	NOV 2011	MAY 2012	MAY 2012	(Ch-1)
Initial Operational Capability (IOC)	SEP 2009	NOV 2011	MAY 2012	MAY 2012	(Ch-1)
Full Rate Production Decision Review	NOV 2009	APR 2012	OCT 2012	OCT 2012	(Ch-1)

Acronyms And Abbreviations

OPEVAL - Operational Evaluation

Change Explanations

(Ch-1) OPEVAL Complete and Initial Operational Capability milestones have changed from APR 2012 to MAY 2012 and the Full Rate Production Decision Review date has changed from APR 2012 to OCT 2012 due to additional time required to correct deficiencies discovered during the Military Utility Assessments.

Memo

The current estimates are based on having an additional ship available and adequate VTUAV sparing to support Operational Testing during the required timeframe. The current estimate is also at risk because VTUAV sparing levels are being stressed by on-going deployments in Afghanistan and Africa.

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate	
Automatic Launch/Recovery (Ship Operations)						
Deck Pitch (degrees)	+/- 5	+/- 5	+/-3	+/-2 at seas; +/-5 land	+/-5	
Deck Roll (degrees)	+/- 8	+/- 8	+/- 5	+/-5 at seas; +/-10 land	+/- 8	
Target Identification						
Slant Range (km)	16	16	6	10	16	
Operational Availability	>= 0.95	>= 0.95	>= 0.85	0.85	>= 0.85	(Ch-1)
Net-Ready	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 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 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 system has demonstra-ted 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, authenticat-ion, confidential-ity, 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 KIP declaration table. 3) NCOW RW Enterprise Services. 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, 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 KIP declaration table. 3) NCOW RW Enterprise Services. 4) IA requirements including availability, integrity, authenticatio n, 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 KIP declaration table. 3) NCOW RW Enterprise Services. 4) IA requirements including availability, integrity, authentica-tion, confidential-ity, 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.

Requirements Source:
Joint Requirements Oversight Council Memo (JROCM 087-09) approved VTUAV Capability Production Document (CPD) Change One, dated May 15, 2009

Acronyms And Abbreviations

ATO - Authority to Operate
DAA - Designated Approving Authority

DISR - Defense Information Standards Registry
FFG - Guided Missile Frigate
GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Authority to Operate
IP - Information Protocol
ISR - Information Standards Registry
IT - Information Technology
KIP - Key Information Protocol
km - Kilometer
LCS - Littoral Combat Ship
NCOW RM - Net-Centric Operational Warfare Reference Model
TV - Technical View

Change Explanations

(Ch-1) The current estimate for Operational Availability has changed from >= 0.95 to >=0.85 based on data collected during Developmental Testing.

Track To Budget

RDT&E				
APPN 1319	BA 07	PE 0305204N	(Navy)	
	Project 2478	Tactical Unmanned Aerial Vehicles/Tactical Control System	(Shared)	(Sunk)
	PU2768, VTUAV			
	Project 2768	Tactical Unmanned Aerial Vehicles/VTUAV	(Shared)	(Sunk)
	PU2768, VTUAV			
	Project 2910	Tactical Unmanned Aerial Vehicles/Joint Technology Center / System Integration Lab	(Shared)	(Sunk)
	PU2768, VTUAV			
	Project 3135	Tactical Unmanned Aerial Vehicles/USMC VUAV	(Shared)	(Sunk)
	PU2768, VTUAV			
	Project 3192	Tactical Unmanned Aerial Vehicles/STUAS	(Shared)	(Sunk)
	PU2768, VTUAV			
	Project 9999	Tactical Unmanned Aerial Vehicles/Congressional Adds	(Shared)	(Sunk)
	PU2768, VTUAV			
APPN 1319	BA 07	PE 0305231N	(Navy)	
	Project 2768	MQ-8 UAV	(Shared)	(Sunk)
	PU2768, MQ-8 UAV			

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

In FY 2010, VTUAV was moved from PE 0305204N to PE 0305231N.

The RDT&E funding included in PE 00305231N in FY 2013 and out is associated with the Endurance Upgrade Rapid Deployment Capability and isn't included in this SAR.

Procurement			
APPN 1506	BA 04	PE 0305231N	(Navy)
	ICN 044300	MQ-8 UAV	(Shared)
APPN 1506	BA 04	PE 0305204N	(Navy)

	ICN 044300	Vertical Take-off UAV (VTUAV)		(Sunk)
APPN 1506	BA 06	PE 0305231N	(Navy)	
	ICN 0605	MQ-8 UAV	(Shared)	

In FY 2010, VTUAV was moved from PE 0305204N to PE 0305231N.

A portion of the funding included in PE 00305231N in FY 2012 - 15 is associated with the Endurance Upgrade Rapid Deployment Capability and isn't included in this SAR.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2006 $M			BY2006 $M	TY $M		
Appropriation	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	541.1	617.1	678.8	612.5	530.3	614.4	609.4
Procurement	1522.4	1748.9	1923.8	1734.4	1821.5	2226.1	2261.0
Flyaway	1170.1	--	--	1332.9	1410.8	--	1753.5
Recurring	1136.9	--	--	1271.4	1372.0	--	1675.9
Non Recurring	33.2	--	--	61.5	38.8	--	77.6
Support	352.3	--	--	401.5	410.7	--	507.5
Other Support	183.6	--	--	238.5	217.2	--	305.2
Initial Spares	168.7	--	--	163.0	193.5	--	202.3
MILCON	119.6	0.0	--	0.0	126.0	0.0	0.0
Acq O&M	183.3	0.0	--	0.0	309.3	0.0	0.0
Total	2366.4	2366.0	N/A	2346.9	2787.1	2840.5	2870.4

Confidence Level for the Current APB Cost is 60% - The current estimate recommendation aims to provide sufficient resources to execute the program under normal conditions, encountering average levels of technical, schedule and programmatic risk, and external interference. It is consistent with average resource expenditures on historical efforts of similar size, scope, and complexity.

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

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2013 President's Budget / December 2011 SAR (TY$ M)

Appropriation	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
RDT&E	606.9	2.5	0.0	0.0	0.0	0.0	0.0	0.0	609.4
Procurement	341.6	41.7	21.7	25.5	77.9	150.1	106.2	1496.3	2261.0
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 2013 Total	948.5	44.2	21.7	25.5	77.9	150.1	106.2	1496.3	2870.4
PB 2012 Total	943.2	68.0	57.5	78.2	77.9	85.5	114.8	1415.4	2840.5
Delta	5.3	-23.8	-35.8	-52.7	0.0	64.6	-8.6	80.9	29.9

Quantity	Undistributed	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
Development	7	0	0	0	0	0	0	0	0	7
Production	0	23	0	0	0	4	8	6	127	168
PB 2013 Total	7	23	0	0	0	4	8	6	127	175
PB 2012 Total	7	23	3	3	5	5	6	6	117	175
Delta	0	0	-3	-3	-5	-1	2	0	10	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
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	--	--	--	--	--	--	22.5
2010	--	--	--	--	--	--	25.5
2011	--	--	--	--	--	--	19.7
2012	--	--	--	--	--	--	2.5
Subtotal	**7**	**--**	**--**	**--**	**--**	**--**	**609.4**

Annual Funding BY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
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	--	--	--	--	--	--	20.9
2010	--	--	--	--	--	--	23.3
2011	--	--	--	--	--	--	17.7
2012	--	--	--	--	--	--	2.2
Subtotal	**7**	**--**	**--**	**--**	**--**	**--**	**612.5**

Annual Funding TY$
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2007	3	32.2	--	3.9	36.1	11.5	47.6
2008	3	32.4	--	1.4	33.8	11.6	45.4
2009	3	31.6	--	3.2	34.8	22.3	57.1
2010	11	109.8	--	5.8	115.6	28.6	144.2
2011	3	31.3	--	1.4	32.7	14.6	47.3
2012	--	17.2	--	1.0	18.2	23.5	41.7
2013	--	14.1	--	0.5	14.6	7.1	21.7
2014	--	3.0	--	11.8	14.8	10.7	25.5
2015	4	54.7	--	5.7	60.4	17.5	77.9
2016	8	92.2	--	3.6	95.8	54.3	150.1
2017	6	70.6	--	2.6	73.2	33.0	106.2
2018	10	100.3	--	3.5	103.8	38.7	142.5
2019	10	94.3	--	3.3	97.6	36.9	134.5
2020	11	100.4	--	3.6	104.0	41.8	145.8
2021	12	109.5	--	3.8	113.3	42.1	155.4
2022	12	111.2	--	3.4	114.6	23.3	137.9
2023	12	112.8	--	3.2	116.0	15.0	131.0
2024	12	108.1	--	3.1	111.2	15.5	126.7
2025	12	109.9	--	3.1	113.0	14.5	127.5
2026	12	111.6	--	3.2	114.8	14.8	129.6
2027	12	113.5	--	3.2	116.7	15.2	131.9
2028	12	115.2	--	3.3	118.5	15.0	133.5
Subtotal	**168**	**1675.9**	**--**	**77.6**	**1753.5**	**507.5**	**2261.0**

Annual Funding BY$
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
2007	3	30.4	--	3.7	34.1	10.9	45.0
2008	3	30.2	--	1.3	31.5	10.8	42.3
2009	3	29.0	--	2.9	31.9	20.5	52.4
2010	11	99.0	--	5.2	104.2	25.8	130.0
2011	3	27.7	--	1.2	28.9	13.0	41.9
2012	--	15.0	--	0.9	15.9	20.4	36.3
2013	--	12.1	--	0.4	12.5	6.1	18.6
2014	--	2.5	--	9.9	12.4	9.0	21.4
2015	4	45.2	--	4.7	49.9	14.5	64.4
2016	8	74.8	--	2.9	77.7	44.1	121.8
2017	6	56.3	--	2.1	58.4	26.3	84.7
2018	10	78.5	--	2.7	81.2	30.4	111.6
2019	10	72.5	--	2.5	75.0	28.5	103.5
2020	11	75.9	--	2.7	78.6	31.6	110.2
2021	12	81.3	--	2.8	84.1	31.2	115.3
2022	12	81.1	--	2.5	83.6	16.9	100.5
2023	12	80.8	--	2.3	83.1	10.7	93.8
2024	12	76.1	--	2.2	78.3	10.8	89.1
2025	12	76.0	--	2.1	78.1	10.0	88.1
2026	12	75.8	--	2.2	78.0	10.0	88.0
2027	12	75.7	--	2.1	77.8	10.2	88.0
2028	12	75.5	--	2.2	77.7	9.8	87.5
Subtotal	**168**	**1271.4**	**--**	**61.5**	**1332.9**	**401.5**	**1734.4**

The procurement funding in FY 2012-FY 2014 is associated with the purchase of Ground Control Station and ship's ancillary equipment required to support ship procurements in those years. It is accounted for with the aircraft quantity in FY 2015 and FY 2016, although other aircraft may be used to support those ships.

Cost Quantity Information
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2006 $M
2007	3	30.4
2008	3	30.2
2009	3	29.0
2010	11	99.9
2011	3	27.7
2012	--	--
2013	--	--
2014	--	--
2015	4	61.1
2016	8	87.6
2017	6	56.3
2018	10	78.5
2019	10	72.5
2020	11	75.9
2021	12	81.3
2022	12	81.1
2023	12	80.8
2024	12	76.1
2025	12	76.0
2026	12	75.8
2027	12	75.7
2028	12	75.5
Subtotal	**168**	**1271.4**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	5/29/2007	7/22/2010
Approved Quantity	4	17
Reference	MS C ADM	ADM
Start Year	2007	2007
End Year	2007	2011

The Initial Milestone C Acquisition Decision Memorandum (ADM) approved the program to purchase up to four air vehicles, and to buy-to-budget. This guidance resulted in a purchase of three air vehicles (AVs).

A Low-Rate Initial Production (LRIP) decision on September 30, 2008 authorized purchase of three AVs for LRIP 2 and three AVs for LRIP 3.

An LRIP decision on July 22, 2010, authorized purchase of five AVs for LRIP 4 and three AVs for LRIP 5. Only three new aircraft (A/C) were purchased under LRIP 4.

An additional eight LRIP A/C were added to the program in FY 2010 as a result of an FY 2010 Congressional add to fund Overseas Contingency Operations to convert eight Army airframes bought under the Army's Future Combat System program into Navy Fire Scouts. This drives the total procurement of LRIP quantity beyond 10% of the total production buy.

Foreign Military Sales

None

Nuclear Cost

None

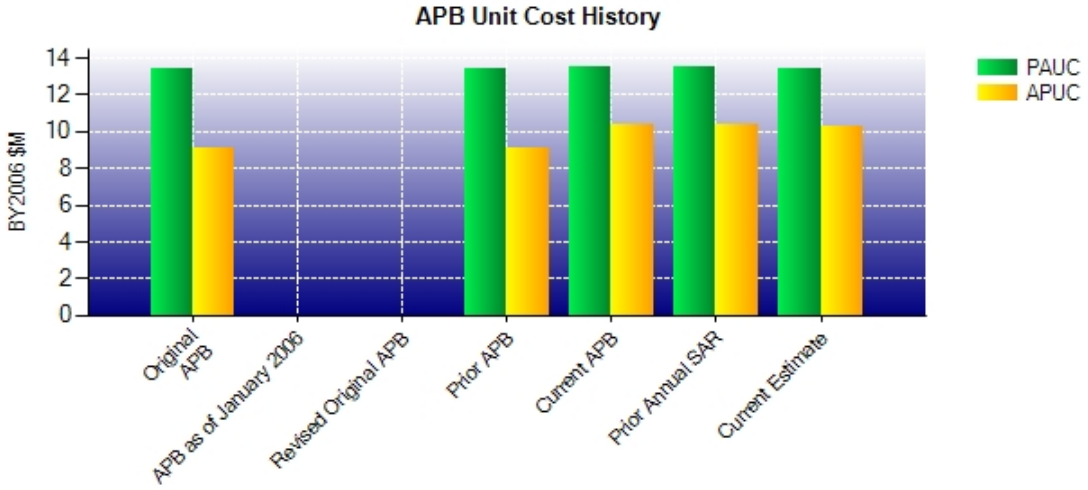
Unit Cost

Unit Cost Report

Unit Cost	BY2006 $M Current UCR Baseline (JUN 2011 APB)	BY2006 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	2366.0	2346.9	
Quantity	175	175	
Unit Cost	13.520	13.411	-0.81
Average Procurement Unit Cost (APUC)			
Cost	1748.9	1734.4	
Quantity	168	168	
Unit Cost	10.410	10.324	-0.83

Unit Cost	BY2006 $M Original UCR Baseline (DEC 2006 APB)	BY2006 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	2366.4	2346.9	
Quantity	177	175	
Unit Cost	13.369	13.411	+0.31
Average Procurement Unit Cost (APUC)			
Cost	1522.4	1734.4	
Quantity	168	168	
Unit Cost	9.062	10.324	+13.93

Unit Cost History



		BY2006 $M		TY $M	
	Date	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	FEB 2009	13.369	9.062	15.746	10.842
Current APB	JUN 2011	13.520	10.410	16.231	13.251
Prior Annual SAR	DEC 2010	13.520	10.410	16.231	13.251
Current Estimate	DEC 2011	13.411	10.324	16.402	13.458

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
15.746	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.746

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
15.746	-0.122	0.000	1.180	0.000	-0.970	0.000	0.569	0.656	16.402

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
10.842	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.842

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
10.842	-0.123	0.000	1.041	0.000	1.105	0.000	0.592	2.616	13.458

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	JAN 2000	JAN 2000	JAN 2000
Milestone C	N/A	FEB 2007	FEB 2007	MAY 2007
IOC	N/A	N/A	SEP 2009	MAY 2012
Total Cost (TY $M)	N/A	2787.1	2787.1	2870.4
Total Quantity	N/A	177	177	175
Prog. Acq. Unit Cost (PAUC)	N/A	15.746	15.746	16.402

Cost Variance

Cost Variance Summary

Summary Then Year $M					
	RDT&E	Proc	MILCON	Acq O&M	Total
SAR Baseline (Prod Est)	530.3	1821.5	126.0	309.3	2787.1
Previous Changes					
Economic	-1.1	-63.1	--	--	-64.2
Quantity	--	--	--	--	--
Schedule	--	+155.2	--	--	+155.2
Engineering	+14.0	--	--	--	+14.0
Estimating	+71.2	+216.2	-126.0	-309.3	-147.9
Other	--	--	--	--	--
Support	--	+96.3	--	--	+96.3
Subtotal	+84.1	+404.6	-126.0	-309.3	+53.4
Current Changes					
Economic	+0.4	+42.5	--	--	+42.9
Quantity	--	--	--	--	--
Schedule	--	+19.7	--	--	+19.7
Engineering	-14.0	--	--	--	-14.0
Estimating	+8.6	-30.5	--	--	-21.9
Other	--	--	--	--	--
Support	--	+3.2	--	--	+3.2
Subtotal	-5.0	+34.9	--	--	+29.9
Total Changes	+79.1	+439.5	-126.0	-309.3	+83.3
CE - Cost Variance	609.4	2261.0	--	--	2870.4
CE - Cost & Funding	609.4	2261.0	--	--	2870.4

Summary Base Year 2006 $M					
	RDT&E	Proc	MILCON	Acq O&M	Total
SAR Baseline (Prod Est)	541.1	1522.4	119.6	183.3	2366.4
Previous Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	-2.5	--	--	-2.5
Engineering	+12.5	--	--	--	+12.5
Estimating	+63.5	+181.6	-119.6	-183.3	-57.8
Other	--	--	--	--	--
Support	--	+47.4	--	--	+47.4
Subtotal	+76.0	+226.5	-119.6	-183.3	-0.4
Current Changes					
Economic	--	--	--	--	--
Quantity	--	--	--	--	--
Schedule	--	--	--	--	--
Engineering	-12.3	--	--	--	-12.3
Estimating	+7.7	-16.3	--	--	-8.6
Other	--	--	--	--	--
Support	--	+1.8	--	--	+1.8
Subtotal	-4.6	-14.5	--	--	-19.1
Total Changes	+71.4	+212.0	-119.6	-183.3	-19.5
CE - Cost Variance	612.5	1734.4	--	--	2346.9
CE - Cost & Funding	612.5	1734.4	--	--	2346.9

Previous Estimate: December 2010

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.4
Adjustment for current and prior escalation. (Estimating)	-0.4	-0.4
Increase in funding to address corrections of system deficiencies found during system deployments (Estimating)	+8.1	+9.0
Decrease in funding associated with changing the acquisition strategy for executing the addition of a weapon to VTUAV as a Rapid Deployment Capability (Engineering)	-12.3	-14.0
RDT&E Subtotal	-4.6	-5.0

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+42.5
Adjustment for current and prior escalation. (Estimating)	-1.8	-2.0
Adjustment to correct the calculated estimate for the schedule impact on the Material Cost and Ground Control Station procurement profile changes (Estimating)	-27.2	-43.8
Increase in non-recurring cost to account for a break in production of MQ-8B airframes. (Estimating)	+12.7	+15.3
Increase due to the stretch-out of the air vehicle procurement buy profile from FY 2012-2017 to FY 2017-2028. (Schedule)	0.0	+19.7
Adjustment for current and prior escalation. (Support)	-0.7	-0.8
Increase in Other Support due to realignment of the fielding timeline. (Support)	+8.1	+17.5
Decrease in Initial Spares due to synergy of spares buys with other platforms. (Support)	-5.6	-13.5
Procurement Subtotal	-14.5	+34.9

Contracts

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

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	185.1	N/A	17	185.1	185.1

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP contract.

Contract Comments

The difference between the initial contract price target and the current contract price target is due to an additional Contract Line Item Number (CLIN) added to the contract for LRIP 4 "delta", to convert eight Army airframes to a Navy MQ-8B configuration. A CLIN for LRIP 5 will be awarded in calendar year 2012.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	7	7	7	100.00%
Production	20	9	168	5.36%
Total Program Quantities Delivered	27	16	175	9.14%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	2870.4	Years Appropriated	13
Expenditures To Date	849.8	Percent Years Appropriated	44.83%
Percent Expended	29.61%	Appropriated to Date	992.7
Total Funding Years	29	Percent Appropriated	34.58%

Multiple issues exist in component life values and component availability and the material condition (preservation and servicing prior to production) of the planned delivered aircraft. These material discrepancies on the production aircraft, primarily the Army to Navy conversion aircraft, are being assessed for correction.

Operating and Support Cost

Assumptions And Ground Rules

There is no antecedent system for this mission.
- VTUAV Total Average Annual Cost per Aircraft $M: $2.273
- Estimate Duration: Fiscal Year (FY) 2010 to 2035, 26 years with approved flight hours
- Total Number of Available Aircraft during Estimate Duration: 1598
- Average Flight Hours per Month per Aircraft: 36
- VTUAV Assumptions:
    - Total Procured Air Vehicles: 168
    - Aircraft Attrition Rate: 7.09 air vehicles per 100,000 hours
    - Primary Aircraft Allocated (PAA): 114
    - Total Flight Hours over Lifetime: 694,704
    - Average Flight Hours / Air Vehicle / Year: 428

Costs BY2006 $M		
Cost Element	**VTUAV Average Annual Cost per Air Vehicle**	**No Antecedent N/A**
Unit-Level Manpower	0.348	--
Unit Operations	0.032	--
Maintenance	1.362	--
Sustaining Support	0.198	--
Continuing System Improvements	0.158	--
Indirect Support	0.175	--
Other	--	--
Total Unitized Cost (Base Year 2006 $)	2.273	--

Total O&S Costs $M	VTUAV	No Antecedent
Base Year	3631.4	--
Then Year	5537.3	--

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

Total Operating and Support (O&S) Costs for the VTUAV represents the program office's current estimate (updated in January 2012) for 168 procured aircraft with a PAA of 114 over the estimate duration of 2010 to 2035. 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 for the estimate duration by the total number of aircraft over the same period.

Based on Office of the Secretary of Defense (OSD) Cost Assessment and Program Evaluation (CAPE) guidance, Disposal Costs are not included in O&S costs so they are not included in this estimate.