Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-373

MQ-4C UAS BAMS

As of December 31, 2011

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

MQ-4C Unmanned Aircraft System Broad Area Maritime Surveillance (MQ-4C UAS BAMS)

DoD Component

Navy

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated February 7, 2009

Approved APB

Under Secretary of Defense (Acquisition, Technology & Logistics) (USD(AT&L) Approved Acquisition Program Baseline (APB) dated January 19, 2012

Mission and Description

The MQ-4C Unmanned Aircraft System (UAS) Broad Area Maritime Surveillance (BAMS) is an integrated System of Systems and a force multiplier for the Joint Force and Fleet Commander, enhancing battlespace awareness and shortening the sensor-to-shooter kill chain. The system provides multiple-sensor, persistent maritime and littoral Intelligence, Surveillance and Reconnaissance (ISR) data collection and dissemination as well as an airborne communications relay capability to Combatant Commanders, Expeditionary Strike Group Commanders, Carrier Strike Group Commanders, and other designated U.S. and Joint Commanders. The addition of a de-icing capability over the baseline Global Hawk provides operators with the capability to transition through icing conditions. The mission sensors installed on the BAMS UAS provide 360 degree radar and Electro-Optical/Infrared coverage. Additional functionality that optimizes the system for maritime search operations includes an Automatic Identification System and an Electronic Sensor Measure with Specific Emitter Identification. The BAMS UAS is a tactical, land-based, forward deployed platform that will operate from five operational sites (orbits) worldwide. It will provide surveillance when no other naval forces are present and will support operations in the littorals. Furthermore, the asset will respond to Theater level operational or National strategic taskings. The system will ramp up to Full Operational Capability (FOC) and then operate for 20 years.

Executive Summary

The MQ-4C Unmanned Aircraft System (UAS) Broad Area Maritime Surveillance (BAMS) is an Acquisition Category (ACAT) ID program that entered System Development and Demonstration (SDD) based on a Milestone B Acquisition Decision Memorandum (ADM) issued on April 18, 2008.

The Milestone Decision Authority (MDA) for BAMS UAS is the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)). Following a full and open competition, a Cost Plus Award Fee (CPAF) SDD contract with an option for Low Rate Initial Production (LRIP) Lot 1 (subsequently renamed System Demonstration Test Articles or SDTA) was awarded to the Northrop Grumman Corporation (NGC) on April 22, 2008 based on a best value source selection process. On May 5, 2008, Lockheed Martin filed a protest with the Government Accountability Office (GAO). The GAO denied the Lockheed Martin protest on August 8, 2008. The contract restarted on August 11, 2008.

The program conducted a successful System Requirements Review (SRR) in January 2009, System Functional Review (SFR) in June 2009, Integrated Baseline Review in July 2009, Preliminary Design Review in February 2010, and Critical Design Review in February 2011. The MQ-4C UAS BAMS program also continues to pursue opportunities for joint efficiencies with the Air Force Global Hawk program.

Since the last submission, BAMS UAS received approval from the MDA to award the CPAF option to the SDD contract for the SDTA lot of aircraft and associated ground stations. The November 1, 2011 ADM directed the Navy to rename this lot of aircraft from LRIP Lot 1 to SDTAs in keeping with their intended purpose, to finish system developmental test, and to support Operational Evaluation (OPEVAL). Subsequent production lots have been renamed accordingly.

As with last year's submission, this SAR documents only the Increment 1 program of record; budget and expected development costs for a planned Signals Intelligence (SIGINT) increment are omitted pending requirements refinement and structuring of a formal acquisition effort.

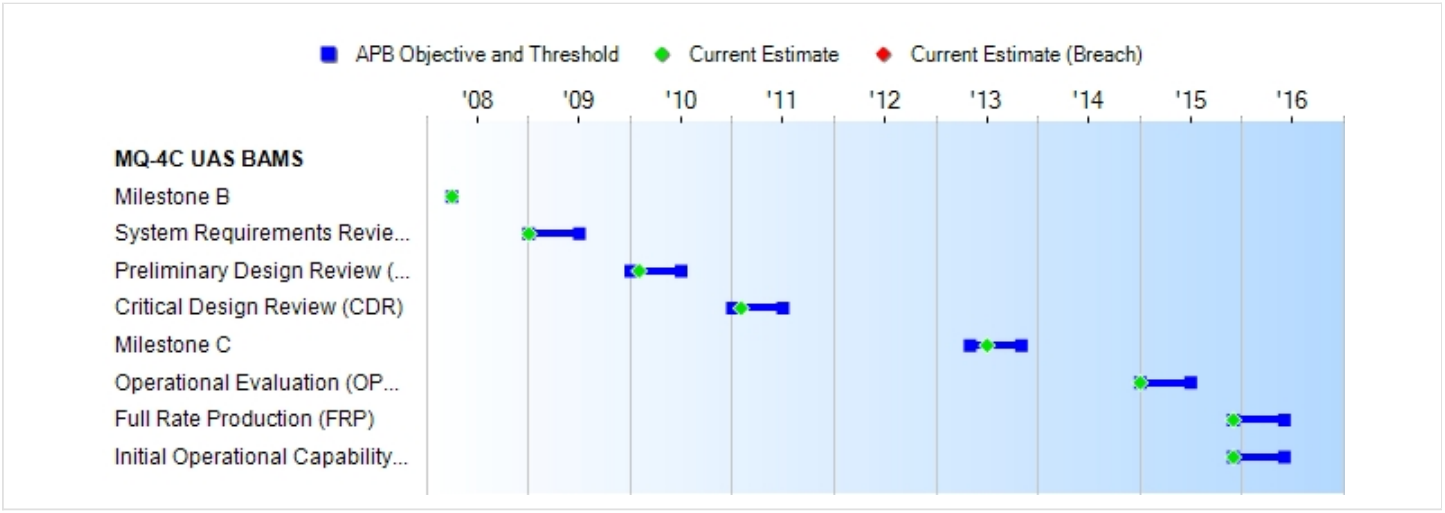
There are no significant software-related issues with this program at this time.

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 Dev Est	Current APB Development Objective/Threshold		Current Estimate	
Milestone B	APR 2008	APR 2008	APR 2008	APR 2008	
System Requirements Review (SRR)	JAN 2009	JAN 2009	JUL 2009	JAN 2009	
Preliminary Design Review (PDR)	JAN 2010	JAN 2010	JUL 2010	FEB 2010	
Critical Design Review (CDR)	JAN 2011	JAN 2011	JUL 2011	FEB 2011	
Milestone C	MAY 2013	MAY 2013	NOV 2013	JUL 2013	(Ch-1)
Operational Evaluation (OPEVAL) Start	JAN 2015	JAN 2015	JUL 2015	JAN 2015	
Full Rate Production (FRP)	DEC 2015	DEC 2015	JUN 2016	DEC 2015	
Initial Operational Capability (IOC)	DEC 2015	DEC 2015	JUN 2016	DEC 2015	

Change Explanations

(Ch-1) Milestone C delayed two months, from May 2013 to July 2013, due to manufacturing delays associated with System Development and Demonstration air vehicles.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate	
Persistent multi-sensor maritime ISR at mission radius	On station 24 hrs a day / 7 days a week for 30 consecutive days with an ETOS of >=95%	On station 24 hrs a day / 7 days a week for 30 consecutive days with an ETOS of >=95%	On station 24 hrs a day for 7 consecutive days with ETOS of >=80%	TBD	On station 24 hrs a day / 7 days a week for 7 consecutive days with an ETOS of >=87% at a mission radius of 2,000 nm	(Ch-1)
Level of Interoperability 1-5	BLOS and LOS from MOB/ FOB (Land Based) MCS	BLOS and LOS from MOB/ FOB (Land Based) MCS	BLOS and LOS from the MOB (Land Based) MCS	TBD	BLOS and LOS from MOB (Land Based) MCS	
UA Mission Radius	>=3,000 nm	>=3,000 nm	>=2,000 nm	TBD	>=2,000 nm	
Level Of Interoperability 2 Capability	LOS/BLOS multi-ISR payload reception to Maritime Forces	LOS/BLOS multi-ISR payload reception to Maritime Forces	LOS, ISR payload sensor data reception to Maritime Forces afloat (CVN, LHA/LHD)	TBD	LOS,ISR payload sensor data reception to Maritime Forces afloat (CVN, LHA/LHD)	
Net Ready	IAW CJCSI 6212.01D	IAW CJCSI 6212.01D	IAW CJCSI 6212.01D	TBD	IAW CJCSI 6212.01D	
Operational Availability	>=0.9	>=0.9	>=0.7 at IOT&E >=0.8 at IOC plus two years	TBD	>=0.86	

Requirements Source:
Joint Requirements Oversight Council (JROC) approved the Broad Area Maritime Surveillance Unmanned Aircraft System (BAMS) Capability Development Document (CDD), JROC Memorandum 126-07, May 21, 2007.

Acronyms And Abbreviations

BLOS - Beyond Line of Sight
CJCSI - Chairman of the Joint Chiefs of Staff Instruction
CVN - Aircraft Carrier Nuclear

ETOS - Effective Time On Station
FOB - Forward Operating Base
hrs - hours
IAW - In Accordance With
IOC - Initial Operational Capability
IOT&E - Initial Operational Test & Evaluation
ISR - Intelligence, Surveillance, and Reconnaissance
LHA - Amphibious Assault Ship (General Purpose)
LHD - Amphibious Assault Ship (Multi Purpose)
LOS - Line of Sight
MCS - Mission Control System
MOB - Main Operating Base
nm - nautical miles
TBD - To Be Determined
UA - Unmanned Aircraft

Change Explanations

(Ch-1) Effective Time on Station (ETOS) adjustment from 88% to 87% due to refined vehicle zero fuel weight estimate based on components delivered by manufacturing to date.

Classified Performance information is provided in the classified annex to this submission.

Track To Budget

RDT&E				
APPN 1319	BA 07	PE 0305205N	(Navy)	
	Project A4020	BAMS UAS	(Shared)	(Sunk)
APPN 1319	BA 07	PE 0305220N	(Navy)	
	Project A4020	BAMS UAS	(Shared)	

Research, Development, Test and Evaluation (RDT&E) funding for BAMS Unmanned Aircraft Systems (UAS) Signals Intelligence (SIGINT) capability is included in the FY 2012 and FY 2013 President's Budgets ($32.2M in FY 2015, $110.2M in FY 2016, and $117.1M in FY 2017), and the Department is examining acquisition alternatives to develop and field this capability. Funding associated with SIGINT capability is not reported in this submission.

Procurement			
APPN 1506	BA 04	PE 0305220N	(Navy)
	ICN 0442	BAMS UAS	
APPN 1506	BA 06	PE 0305220N	(Navy)
	ICN 0605	BAMS UAS	(Shared)

MILCON			
APPN 1205	BA 01	PE 0815976N	(Navy)
	Project 00207153		(Shared)
	Project 00207655		(Shared)
	Project 63042900		(Shared)
	Project C1002154		(Shared)
	Project C1002155		(Shared)
	Project C1002156		(Shared)
	Project C1002157		(Shared)
	Project C1002158		(Shared)
	Project C1002960		(Shared)
APPN 1205	BA 01	PE 0816376N	(Navy)
	Project 0428A263		(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2008 $M			BY2008 $M	TY $M		
Appropriation	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	2989.3	2989.3	3288.2	3019.9	3223.6	3223.6	3221.5
Procurement	8871.2	8871.2	9758.3	8926.6	11525.6	11525.6	11320.3
Flyaway	5497.9	--	--	5586.4	7124.5	--	7055.1
Recurring	5316.4	--	--	5369.6	6908.0	--	6787.7
Non Recurring	181.5	--	--	216.8	216.5	--	267.4
Support	3373.3	--	--	3340.2	4401.1	--	4265.2
Other Support	2328.4	--	--	2375.0	3023.9	--	3024.2
Initial Spares	1044.9	--	--	965.2	1377.2	--	1241.0
MILCON	364.0	364.0	400.4	297.4	423.1	423.1	340.5
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	12224.5	12224.5	N/A	12243.9	15172.3	15172.3	14882.3

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	5	5	5
Procurement	65	65	65
Total	70	70	70

The Research, Development, Test and Evaluation (RDT&E) total quantity of five is comprised of two engineering development models and three System Demonstration Test Article (SDTA) Unmanned Aircraft (UA). The three SDTA UAs will be utilized for capstone developmental test events, operational test, and achieving Initial Operational Capability (IOC).

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	1552.6	548.3	657.5	233.5	129.9	99.7	0.0	0.0	3221.5
Procurement	0.0	0.0	51.1	539.1	628.2	657.5	711.3	8733.1	11320.3
MILCON	33.0	4.5	70.9	68.1	96.7	31.5	35.8	0.0	340.5
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2013 Total	1585.6	552.8	779.5	840.7	854.8	788.7	747.1	8733.1	14882.3
PB 2012 Total	1598.5	553.0	807.9	916.0	917.5	857.5	1051.6	8043.1	14745.1
Delta	-12.9	-0.2	-28.4	-75.3	-62.7	-68.8	-304.5	690.0	137.2

Quantity	Undistributed	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
Development	5	0	0	0	0	0	0	0	0	5
Production	0	0	0	0	3	4	4	5	49	65
PB 2013 Total	5	0	0	0	3	4	4	5	49	70
PB 2012 Total	5	0	0	0	4	4	4	5	48	70
Delta	0	0	0	0	-1	0	0	0	1	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
2004	--	--	--	--	--	--	19.8
2005	--	--	--	--	--	--	39.3
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	26.2
2008	--	--	--	--	--	--	83.1
2009	--	--	--	--	--	--	420.4
2010	--	--	--	--	--	--	438.2
2011	--	--	--	--	--	--	525.6
2012	--	--	--	--	--	--	548.3
2013	--	--	--	--	--	--	657.5
2014	--	--	--	--	--	--	233.5
2015	--	--	--	--	--	--	129.9
2016	--	--	--	--	--	--	99.7
Subtotal	**5**	**--**	**--**	**--**	**--**	**--**	**3221.5**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2004	--	--	--	--	--	--	21.6
2005	--	--	--	--	--	--	41.8
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	26.4
2008	--	--	--	--	--	--	82.2
2009	--	--	--	--	--	--	410.7
2010	--	--	--	--	--	--	421.7
2011	--	--	--	--	--	--	496.3
2012	--	--	--	--	--	--	508.8
2013	--	--	--	--	--	--	600.1
2014	--	--	--	--	--	--	209.5
2015	--	--	--	--	--	--	114.5
2016	--	--	--	--	--	--	86.3
Subtotal	**5**	**--**	**--**	**--**	**--**	**--**	**3019.9**

The Research, Development, Test and Evaluation (RDT&E) total quantity of five is comprised of two engineering development models and three System Demonstration Test Article (SDTA) Unmanned Aircraft (UA). The three SDTA UAs will be utilized for capstone developmental test events, operational test, and achieving Initial Operational Capability (IOC).

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
2013	--	51.1	--	--	51.1	--	51.1
2014	3	338.8	--	42.6	381.4	157.7	539.1
2015	4	402.3	--	44.8	447.1	181.1	628.2
2016	4	383.3	--	40.6	423.9	233.6	657.5
2017	5	472.7	--	40.4	513.1	198.2	711.3
2018	5	519.6	--	9.0	528.6	502.9	1031.5
2019	6	610.6	--	--	610.6	345.7	956.3
2020	6	602.1	--	--	602.1	335.2	937.3
2021	6	621.5	--	--	621.5	342.8	964.3
2022	6	634.9	--	--	634.9	370.0	1004.9
2023	5	539.8	--	--	539.8	318.4	858.2
2024	5	558.8	--	--	558.8	326.4	885.2
2025	5	590.5	--	--	590.5	352.9	943.4
2026	5	461.7	--	90.0	551.7	600.3	1152.0
Subtotal	**65**	**6787.7**	**--**	**267.4**	**7055.1**	**4265.2**	**11320.3**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2013	--	46.0	--	--	46.0	--	46.0
2014	3	299.6	--	37.7	337.3	139.5	476.8
2015	4	349.5	--	38.9	388.4	157.4	545.8
2016	4	327.1	--	34.6	361.7	199.4	561.1
2017	5	396.3	--	33.9	430.2	166.1	596.3
2018	5	427.9	--	7.4	435.3	414.1	849.4
2019	6	493.9	--	--	493.9	279.7	773.6
2020	6	478.5	--	--	478.5	266.3	744.8
2021	6	485.1	--	--	485.1	267.6	752.7
2022	6	486.8	--	--	486.8	283.7	770.5
2023	5	406.6	--	--	406.6	239.8	646.4
2024	5	413.5	--	--	413.5	241.5	655.0
2025	5	429.2	--	--	429.2	256.5	685.7
2026	5	329.6	--	64.3	393.9	428.6	822.5
Subtotal	**65**	**5369.6**	**--**	**216.8**	**5586.4**	**3340.2**	**8926.6**

Cost Quantity Information
1506 | Procurement | Aircraft Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2008 $M
2013	--	--
2014	3	282.7
2015	4	332.8
2016	4	325.4
2017	5	399.3
2018	5	399.2
2019	6	496.1
2020	6	476.5
2021	6	477.8
2022	6	505.5
2023	5	404.6
2024	5	407.0
2025	5	431.7
2026	5	431.0
Subtotal	**65**	**5369.6**

Annual Funding TY$
1205 | MILCON | Military Construction, Navy and Marine Corps

Fiscal Year	Total Program TY $M
2011	33.0
2012	4.5
2013	70.9
2014	68.1
2015	96.7
2016	31.5
2017	35.8
Subtotal	**340.5**

Annual Funding BY$
1205 | MILCON | Military Construction, Navy and Marine Corps

Fiscal Year	Total Program BY 2008 $M
2011	30.5
2012	4.1
2013	63.3
2014	59.7
2015	83.3
2016	26.7
2017	29.8
Subtotal	**297.4**

Military Construction (MILCON) costs are for seven sites: Patuxent River, Maryland (Test & Evaluation) in FY 2011; Jacksonville, Florida in FY 2012, FY 2013 and FY 2017; Central Command in FY 2013; Beale Air Force Base, California in FY 2013, FY 2015 and FY 2016; Guam in FY 2014; Whidbey Island, Washington in FY 2015; and Sigonella, Italy in FY 2015. Changes since last year reflect improved accuracy in estimates based on increased understanding of specific site requirements.

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	4/18/2008	4/18/2008
Approved Quantity	10	10
Reference	ADM	ADM
Start Year	2013	2013
End Year	2015	2015

The current total LRIP quantity is more than 10% of the total production quantity due to the establishment of an initial production base for the system and an orderly and efficient increase in the production rate.

The April 18, 2008 BAMS UAS Milestone B Acquisition Decision Memorandum (ADM) signed by the Under Secretary of Defense for Acquisition, Technology and Logistics approved the planning for the program's Milestone C Low Rate Initial Production (LRIP) decision and stipulated the quantity will not exceed 10 unmanned aircraft systems and related ground control systems.

A subsequent ADM signed by the Milestone Decision Authority on November 1, 2011 directed redesignation of the next lot of aircraft from LRIP Lot 1 to System Demonstration Test Articles (SDTAs), with LRIP Lot 1 to follow in the subsequent fiscal year. The next lot of aircraft will validate critical Key Performance Parameters (KPPs) in developmental test and serve as the test articles for Operational Evaluation (OPEVAL). These aircraft will receive hardware and software updates as required to make them production representative and will be transferred for operational use at the conclusion of OPEVAL. The result of redesignating this lot of aircraft is a net reduction in the quantity produced as LRIP. The program is authorized to procure ten LRIP aircraft but currently plans to procure seven aircraft before proceeding to a Full Rate Production decision. The total number of vehicles delivered for operational use over the life of the program, and the funding source for each lot of aircraft, are unaffected by this decision.

Foreign Military Sales

None

Nuclear Cost

None

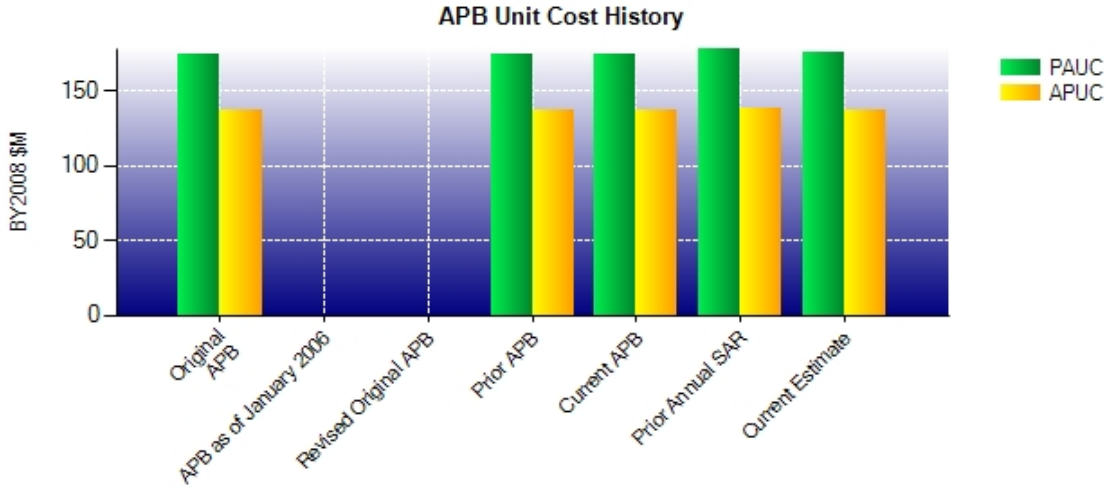
Unit Cost

Unit Cost Report

Unit Cost	BY2008 $M Current UCR Baseline (JAN 2012 APB)	BY2008 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	12224.5	12243.9	
Quantity	70	70	
Unit Cost	174.636	174.913	+0.16
Average Procurement Unit Cost (APUC)			
Cost	8871.2	8926.6	
Quantity	65	65	
Unit Cost	136.480	137.332	+0.62

Unit Cost	BY2008 $M Original UCR Baseline (FEB 2009 APB)	BY2008 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	12224.5	12243.9	
Quantity	70	70	
Unit Cost	174.636	174.913	+0.16
Average Procurement Unit Cost (APUC)			
Cost	8871.2	8926.6	
Quantity	65	65	
Unit Cost	136.480	137.332	+0.62

Unit Cost History



		BY2008 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	FEB 2009	174.636	136.480	216.747	177.317
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	174.636	136.480	216.747	177.317
Current APB	JAN 2012	174.636	136.480	216.747	177.317
Prior Annual SAR	DEC 2010	177.420	137.805	210.644	170.094
Current Estimate	DEC 2011	174.913	137.332	212.604	174.158

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
216.747	-6.391	0.000	1.150	0.000	0.411	0.000	0.687	-4.143	212.604

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
177.317	-6.022	0.000	1.238	0.000	1.402	0.000	0.223	-3.159	174.158

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	APR 2008	N/A	APR 2008
Milestone C	N/A	MAY 2013	N/A	JUL 2013
IOC	N/A	DEC 2015	N/A	DEC 2015
Total Cost (TY $M)	N/A	15172.3	N/A	14882.3
Total Quantity	N/A	70	N/A	70
Prog. Acq. Unit Cost (PAUC)	N/A	216.747	N/A	212.604

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	3223.6	11525.6	423.1	15172.3
Previous Changes				
Economic	-81.0	-620.4	-12.4	-713.8
Quantity	--	--	--	--
Schedule	--	+23.9	--	+23.9
Engineering	--	--	--	--
Estimating	+92.0	-0.6	+10.1	+101.5
Other	--	--	--	--
Support	+33.6	+127.6	--	+161.2
Subtotal	+44.6	-469.5	-2.3	-427.2
Current Changes				
Economic	+28.7	+229.0	+8.7	+266.4
Quantity	--	--	--	--
Schedule	--	+56.6	--	+56.6
Engineering	--	--	--	--
Estimating	-75.4	+91.7	-89.0	-72.7
Other	--	--	--	--
Support	--	-113.1	--	-113.1
Subtotal	-46.7	+264.2	-80.3	+137.2
Total Changes	-2.1	-205.3	-82.6	-290.0
CE - Cost Variance	3221.5	11320.3	340.5	14882.3
CE - Cost & Funding	3221.5	11320.3	340.5	14882.3

Summary Base Year 2008 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	2989.3	8871.2	364.0	12224.5
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	-0.6	--	-0.6
Engineering	--	--	--	--
Estimating	+67.9	-14.6	+9.9	+63.2
Other	--	--	--	--
Support	+31.0	+101.3	--	+132.3
Subtotal	+98.9	+86.1	+9.9	+194.9
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+36.9	--	+36.9
Engineering	--	--	--	--
Estimating	-68.3	+66.8	-76.5	-78.0
Other	--	--	--	--
Support	--	-134.4	--	-134.4
Subtotal	-68.3	-30.7	-76.5	-175.5
Total Changes	+30.6	+55.4	-66.6	+19.4
CE - Cost Variance	3019.9	8926.6	297.4	12243.9
CE - Cost & Funding	3019.9	8926.6	297.4	12243.9

Previous Estimate: December 2010

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+28.7
Adjustment for current and prior escalation. (Estimating)	-13.4	-14.3
Decrease in revised cost estimate due to execution year adjustments. (Estimating)	-3.5	-3.7
Decrease in revised cost estimate to reflect Department affordability and efficiency initiatives. (Estimating)	-51.4	-57.4
RDT&E Subtotal	-68.3	-46.7

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+229.0
Schedule adjustment due to delayed procurement of one air vehicle, shifting from FY 2014 - FY 2022. (Schedule)	0.0	+14.3
Additional schedule variance associated with Advanced Procurement adjustments due to schedule change. (Schedule)	+0.3	0.0
Estimating changes resulting from improved Advanced Procurement estimate based on contractor efforts to date. (Estimating)	+1.4	0.0
Increase to Non-Recurring Engineering and Engineering Change Orders for Incorporation of a Line Shutdown Estimate. (Estimating)	+65.4	+91.7
Increase to cost estimate due to inefficiencies resulting from delaying one unmanned aircraft from FY 2014 to FY 2022. (Schedule)	+36.6	+42.3
Increase to Other Support due to improved estimates for support through delivery of the final production lot. (Support)	+8.6	+53.3
Decrease in Initial Spares due to revised estimate associated with the Baseline Assessment Memorandum (BAM) process. (Support)	-143.0	-166.4
Procurement Subtotal	-30.7	+264.2

MILCON	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+8.7
Adjustment for current and prior escalation. (Estimating)	-0.8	-0.9
Revised estimate to reflect most current basing locations and schedule. (Estimating)	-35.0	-42.0
Revised estimate to reflect Department affordability and efficiency initiatives. (Estimating)	-40.7	-46.1
MILCON Subtotal	-76.5	-80.3

Contracts

Appropriation: RDT&E

Contract Name	**BAMS UAS SDD Contract**
Contractor	Northrop Grumman Systems Corporation
Contractor Location	Bethpage, NY 11714
Contract Number, Type	N00019-08-C-0023, CPAF
Award Date	April 22, 2008
Definitization Date	April 22, 2008

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1164.0	N/A	2	2196.4	N/A	5	2189.4	2350.4

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-62.5	-58.5
Previous Cumulative Variances	-22.6	-32.1
Net Change	-39.9	-26.4

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to additional non-recurring design efforts conducted to reduce the risk of meeting the system's unique maritime requirements, primarily relating to air vehicle structural changes and integration of the sensor payloads. Completion of these efforts was critical to accomplishing the Critical Design Review milestone in February 2011, five months ahead of Acquisition Program Baseline (APB) threshold.

The unfavorable net change in the schedule variance is due to the aggressive contractual targets levied on suppliers. Delays in executing the subsystem level design reviews, and resulting delayed hardware deliveries, incurred overall variances which are against contract targets that are more aggressive than the top-level APB objectives.

Contract Comments

The difference between the initial contract price target and the current contract price target is due to funding of developmental risk reduction efforts and award of the option for System Demonstration Test Articles.

The increase in the contract price during the reporting period was a result of authorized unpriced work and contract scope increases negotiated to satisfy priority requirements and reflects the impact of the "stop work" period during the contract award protest period in 2008. The largest component of the contract price adjustment was the award of the System Demonstration Test Article Option on November 4,2011, as directed by the November 1, 2011 Acquisition Decision Memorandum (ADM) signed by the Milestone Decision Authority (MDA).

Initial Quantity has been updated in the 2011 report to correct an administrative oversight; two unmanned aircraft are included as part of the original System Development and Demonstration contract scope.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	5	0.00%
Production	0	0	65	0.00%
Total Program Quantities Delivered	0	0	70	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	14882.3	Years Appropriated	9
Expenditures To Date	1558.7	Percent Years Appropriated	39.13%
Percent Expended	10.47%	Appropriated to Date	2138.4
Total Funding Years	23	Percent Appropriated	14.37%

Total Deliveries and Expenditures to Date as of January 6, 2012.

Operating and Support Cost

Assumptions And Ground Rules

All costs were estimated in FY 2008 dollars, the Base Year (BY) of the estimate.

MQ-4C UAS BAMS Operation and Support (O&S) costs are based on a two-level maintenance concept. Life cycle is phase-in +20 years of operation per aircraft. The December 2011 SAR reflects updated estimating methodologies and the use of more specific analogous systems.

This estimate was based on historical/analogous program costs with an organic three-level maintenance concept adjusted to a two-level maintenance concept.

Average annual cost per aircraft is calculated by dividing total O&S cost by the sum of the operational aircraft years. As defined by the Cost Assessment and Program Evaluation (CAPE) O&S Cost-Estimating Guide (October 2007), disposal costs are not part of O&S and are not currently estimated.

MQ-4C UAS BAMS Total Operating Aircraft Years:	440
Estimate Duration:	FY 2015 - FY 2039
Average Flight Hours per Month per Aircraft:	226
Flight Hours per Aircraft per Year	2711
Aircraft Attrition Rate	4 per 100K Flight Hours
Aircraft per Main Operating Base (MOB)	4
Primary Authorized Aircraft (PAA)	20
Total Operational Aircraft Procured:	68

Date/source of estimate: January 2012/ Naval Air Systems Command (NAVAIR) 4.2 Cost Department

Costs BY2008 $M		
Cost Element	**MQ-4C UAS BAMS Cost per Air Vehicle per Year**	**No Antecedent**
Unit-Level Manpower	3.433	--
Unit Operations	1.843	--
Maintenance	9.074	--
Sustaining Support	0.539	--
Continuing System Improvements	1.163	--
Indirect Support	1.081	--
Other	--	--
Total Unitized Cost (Base Year 2008 $)	17.133	--

Total O&S Costs $M	MQ-4C UAS BAMS	No Antecedent
Base Year	7538.3	--
Then Year	11689.3	--

There is no antecedent program for MQ-4C UAS BAMS.