



Selected Acquisition Report (SAR)

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MQ-4C Triton Unmanned Aircraft System (MQ-4C Triton)

As of FY 2015 President's Budget

Defense Acquisition Management
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Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
\$K - Thousands of Dollars
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

MQ-4C Triton Unmanned Aircraft System (MQ-4C Triton)

DoD Component

Navy

Responsible Office

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References

SAR Baseline (Development Estimate)

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

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated January 19, 2012

Mission and Description

The MQ-4C Triton Unmanned Aircraft System (MQ-4C Triton) 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 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 MQ-4C Triton 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 Support Measures with Specific Emitter Identification. The MQ-4C Triton 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.

Executive Summary

The MQ-4C Triton is an Acquisition Category ID program that entered System Development and Demonstration (SDD) based on a Milestone (MS) B Acquisition Decision Memorandum (ADM) issued on April 18, 2008.

The program conducted a successful System Requirements Review in January 2009, System Functional Review in June 2009, Integrated Baseline Review in July 2009, Preliminary Design Review in February 2010, Critical Design Review in February 2011, and Flight Readiness Review in March 2013. First flight of the MQ-4C Triton was successfully conducted in May 2013. In August 2013, Australia signed a FMS Planning Case with the program office. This FMS case will assist Australia in validating that the MQ-4C Triton will meet their specific requirements.

The program received approval from the Milestone Decision Authority to award the Cost Plus Award Fee (CPAF) option to the SDD contract for the System Demonstration Test Article (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).

During this reporting period, the MQ-4C Triton program entered formal flight test and continues to conduct system integration testing in preparation for an Operational Assessment in 2015. Fifteen surrogate risk reduction flights were completed this year on a Gulfstream testbed for the Multi-Function Active Sensor (MFAS) radar. Production of the SDTA aircraft continued in 2013.

As reported in the December 2012 SAR, the MQ-4C Triton program breached the APB cost threshold for RDT&E and the schedule thresholds for MS C, OPEVAL start, Full Rate Production, and IOC. The program has been re-planned and the cost and schedule remaining for the SDD contract has been adjusted. The Over Target Baseline/Over Target Schedule contract modification was executed in January 2014. The SDD contract was also modified from CPAF to Cost Plus Incentive Fee. An APB revision is in work and will include a revised O&S estimate. The O&S estimate will be updated to include refinement of MFAS radar estimates and inclusion of a program ramp-down period which will result in an increase in the O&S estimate. The program is fully resourced in FY 2015 PB, including funding to support FY 2016 LRIP. Funding associated with phased modifications to update sensor and system performance, including upgrades to the MQ-4C Triton's Multiple Intelligence capabilities in support of the Chief of Naval Operations N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan will be reflected in the MS C APB and subsequent SAR.

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	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Explanation of Breach

As reported in the 2012 SAR, the MQ-4C Triton program breached the APB cost threshold for RDT&E and the schedule thresholds for Milestone (MS) C, Operational Evaluation (OPEVAL) start, Full Rate Production (FRP), and IOC. These cost and schedule breaches were based on delays due to technical challenges associated with system integration and developmental testing, which delayed entry into flight test. These delays aligned with Navy initiatives to reprioritize the program's production funding in FY 2014 PB. FY 2015 PB has further delayed entry into production until FY 2016.

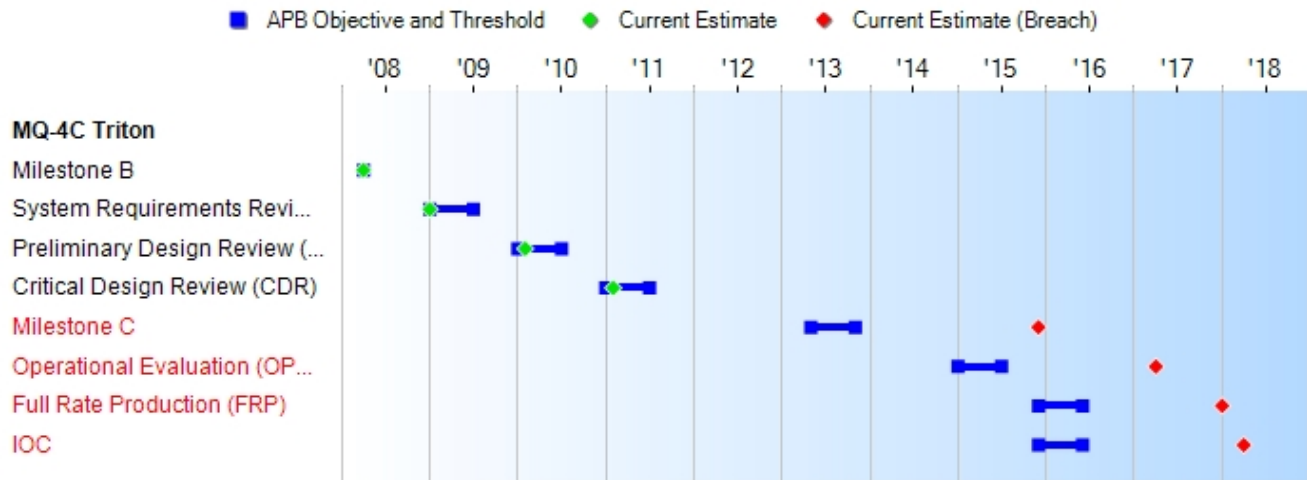
The current estimate for the MS C schedule parameter reflects the impact of delayed entry into production. Current estimates for the subsequent OPEVAL start, FRP, and IOC parameters have been aligned with the planned production and delivery schedule to support first orbit standup.

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

A Program Deviation Report was submitted and a proposed APB revision is in development.

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	DEC 2015 ¹ (Ch-1)
Operational Evaluation (OPEVAL) Start	JAN 2015	JAN 2015	JUL 2015	APR 2017 ¹ (Ch-1)
Full Rate Production (FRP)	DEC 2015	DEC 2015	JUN 2016	JAN 2018 ¹ (Ch-1)
IOC	DEC 2015	DEC 2015	JUN 2016	APR 2018 ¹ (Ch-1)

¹APB Breach

Change Explanations

(Ch-1) Milestone C, Operational Evaluation, Full Rate Production, and IOC current estimates have been delayed to align with planned entry into production as part of FY 2015 PB.

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 >=88% at a mission radius of 2,000 nm
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	BLOS and LOS from MOB (Land Based) MCS (LOI 4 and 5)	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

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

Requirements Source

Capability Development Document (CDD) dated May 21, 2007

Change Explanations

None

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
IOT&E - Initial Operational Test & Evaluation
ISR - Intelligence, Surveillance, and Reconnaissance
LHA - Amphibious Assault Ship (General Purpose)
LHD - Amphibious Assault Ship (Multi Purpose)
LOI - Level of Interoperability
LOS - Line of Sight
MCS - Mission Control System
MOB - Main Operating Base
nm - nautical miles
UA - Unmanned Aircraft

Track to Budget

RDT&E

Appn	BA	PE
Navy 1319	07	0305205N
Project		Name
4020		BAMS UAS (Shared) (Sunk)
Navy 1319	07	0305220N
Project		Name
4020		BAMS UAS

RDT&E funding totaling \$643.6M (TY) in FY 2015 - FY 2020 associated with phased modifications to update sensor and system performance, including upgrades to the MQ-4C Triton's Multiple Intelligence (Multi-Int) capabilities in support of the Chief of Naval Operations N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan, continues to be omitted from this report.

Procurement

Appn	BA	PE
Navy 1506	04	0305220N
Line Item		Name
0442		BAMS UAS
Navy 1506	06	0305220N
Line Item		Name
0605		BAMS UAS (Shared)

Aircraft Procurement funding totaling \$881.0M (TY) in FY 2017 - FY 2028 associated with phased modifications to update sensor and system performance, including upgrades to the MQ-4C Triton's Multiple Intelligence (Multi-Int) capabilities in support of the Chief of Naval Operations N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan, continues to be omitted from this report.

MILCON

Appn	BA	PE
Navy 1205	01	0203176N
Project		Name
00207655		BAMS Mission Control Complex (Sunk)
Navy 1205	01	0212176N
Project		Name
00207662		BAMS Mission Control System
Navy 1205	02	0212176N
Project		Name

	62020240		BAMS Facility	
Navy	1205	01	0212176N	
	Project		Name	
	62995407		BAMS Aircraft and Maintenance Hangar	
	69232577		BAMS Forward Operating Base 3rd Fleet	
	69232593		BAMS Consolidated Maintenance Hangar	(Sunk)
	C1002960		BAMS Operational Facilities	(Sunk)
Navy	1205	01	0815976N	
	Project		Name	
	00207153		BAMS UAS Operator Training Facility	(Sunk)
	41557625		BAMS Forward Operational and Maintenance Hangar	(Sunk)
	63042900		BAMS Maintenance Training Facility	(Sunk)
	C1002154		BAMS UAS Operator Training Facility	
Navy	1205	01	0816376N	
	Project		Name	
	0428A263		BAMS Test and Evaluation Facility	(Sunk)

Previous MILCON project 69232954 was removed and two new MILCON projects, 00620240 and 69232577, were created to correctly align MILCON projects with program plans. No funds were expended under project 69232954.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2008 \$M			BY2008 \$M	TY \$M		
	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	3458.2 ¹	3223.6	3223.6	3733.0
Procurement	8871.2	8871.2	9758.3	8491.6	11525.6	11525.6	11292.7
Flyaway	--	--	--	5820.0	--	--	7734.5
Recurring	--	--	--	5524.2	--	--	7350.0
Non Recurring	--	--	--	295.8	--	--	384.5
Support	--	--	--	2671.6	--	--	3558.2
Other Support	--	--	--	1691.3	--	--	2249.8
Initial Spares	--	--	--	980.3	--	--	1308.4
MILCON	364.0	364.0	400.4	293.1	423.1	423.1	342.7
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	12224.5	12224.5	N/A	12242.9	15172.3	15172.3	15368.4

¹ APB Breach

A cost estimate was not performed for the most recent APB update in January 2012. This update supported the redesignation of the three systems originally planned for LRIP Lot 1 to System Demonstration Test Articles.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	5	5	4
Procurement	65	65	66
Total	70	70	70

The RDT&E total quantity of five was originally comprised of two engineering development models and three System Demonstration Test Article (SDTA) Unmanned Aircraft (UA). Funding reductions associated with sequestration necessitated the reduction of SDTA quantities from three to two. The Over Target Baseline/Over Target Schedule contract modification was executed in January 2014.

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	2713.4	375.2	438.1	185.1	21.2	0.0	0.0	0.0	3733.0
Procurement	47.2	0.0	37.4	779.6	683.8	691.8	675.4	8377.5	11292.7
MILCON	102.5	79.2	0.0	53.1	71.9	0.0	36.0	0.0	342.7
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2015 Total	2863.1	454.4	475.5	1017.8	776.9	691.8	711.4	8377.5	15368.4
PB 2014 Total	2918.2	506.4	1063.9	777.9	666.6	833.9	1158.1	7343.2	15268.2
Delta	-55.1	-52.0	-588.4	239.9	110.3	-142.1	-446.7	1034.3	100.2

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	4	0	0	0	0	0	0	0	0	4
Production	0	0	0	0	4	4	4	4	50	66
PB 2015 Total	4	0	0	0	4	4	4	4	50	70
PB 2014 Total	5	0	0	3	4	4	6	6	42	70
Delta	-1	0	0	-3	0	0	-2	-2	8	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	--	--	--	--	--	--	17.9
2005	--	--	--	--	--	--	39.3
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	26.2
2008	--	--	--	--	--	--	83.1
2009	--	--	--	--	--	--	420.4
2010	--	--	--	--	--	--	438.1
2011	--	--	--	--	--	--	525.6
2012	--	--	--	--	--	--	550.1
2013	--	--	--	--	--	--	612.7
2014	--	--	--	--	--	--	375.2
2015	--	--	--	--	--	--	438.1
2016	--	--	--	--	--	--	185.1
2017	--	--	--	--	--	--	21.2
Subtotal	4	--	--	--	--	--	3733.0

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	--	--	--	--	--	--	19.6
2005	--	--	--	--	--	--	41.8
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	26.4
2008	--	--	--	--	--	--	82.2
2009	--	--	--	--	--	--	410.7
2010	--	--	--	--	--	--	421.7
2011	--	--	--	--	--	--	493.8
2012	--	--	--	--	--	--	508.0
2013	--	--	--	--	--	--	557.0
2014	--	--	--	--	--	--	335.4
2015	--	--	--	--	--	--	384.4
2016	--	--	--	--	--	--	159.3
2017	--	--	--	--	--	--	17.9
Subtotal	4	--	--	--	--	--	3458.2

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	--	47.2	--	--	47.2	--	47.2
2014	--	--	--	--	--	--	--
2015	--	37.4	--	--	37.4	--	37.4
2016	4	462.7	--	52.4	515.1	264.5	779.6
2017	4	397.5	--	50.4	447.9	235.9	683.8
2018	4	398.1	--	49.3	447.4	244.4	691.8
2019	4	441.1	--	48.6	489.7	185.7	675.4
2020	6	629.0	--	48.9	677.9	230.9	908.8
2021	6	645.0	--	--	645.0	299.3	944.3
2022	6	658.4	--	--	658.4	306.1	964.5
2023	6	673.0	--	21.6	694.6	313.3	1007.9
2024	6	688.5	--	--	688.5	321.0	1009.5
2025	6	704.8	--	--	704.8	329.0	1033.8
2026	6	697.7	--	23.3	721.0	337.3	1058.3
2027	5	566.8	--	--	566.8	303.8	870.6
2028	3	302.8	--	90.0	392.8	187.0	579.8
Subtotal	66	7350.0	--	384.5	7734.5	3558.2	11292.7

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	--	42.3	--	--	42.3	--	42.3
2014	--	--	--	--	--	--	--
2015	--	32.3	--	--	32.3	--	32.3
2016	4	392.1	--	44.4	436.5	224.2	660.7
2017	4	330.2	--	41.9	372.1	196.0	568.1
2018	4	324.3	--	40.2	364.5	199.0	563.5
2019	4	352.2	--	38.8	391.0	148.3	539.3
2020	6	492.4	--	38.3	530.7	180.8	711.5
2021	6	495.1	--	--	495.1	229.7	724.8
2022	6	495.4	--	--	495.4	230.4	725.8
2023	6	496.5	--	15.9	512.4	231.2	743.6
2024	6	498.0	--	--	498.0	232.1	730.1
2025	6	499.8	--	--	499.8	233.3	733.1
2026	6	485.0	--	16.2	501.2	234.5	735.7
2027	5	386.3	--	--	386.3	207.1	593.4
2028	3	202.3	--	60.1	262.4	125.0	387.4
Subtotal	66	5524.2	--	295.8	5820.0	2671.6	8491.6

The FY 2016 LRIP production buy requires the use of both FY 2013 Advanced Procurement (AP) and FY 2015 AP.

Cost Quantity Information**1506 | Procurement | Aircraft Procurement, Navy**

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2008 \$M
2013	--	--
2014	--	--
2015	--	--
2016	4	402.2
2017	4	328.1
2018	4	322.6
2019	4	318.8
2020	6	490.1
2021	6	492.3
2022	6	492.7
2023	6	493.8
2024	6	495.2
2025	6	496.9
2026	6	499.0
2027	5	417.9
2028	3	274.6
Subtotal	66	5524.2

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

Fiscal Year	Total Program TY \$M
2011	33.0
2012	4.5
2013	65.0
2014	79.2
2015	--
2016	53.1
2017	71.9
2018	--
2019	36.0
Subtotal	342.7

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

Fiscal Year	Total Program BY 2008 \$M
2011	30.3
2012	4.1
2013	57.7
2014	69.0
2015	--
2016	44.5
2017	59.1
2018	--
2019	28.4
Subtotal	293.1

MILCON costs are for eight sites which will support program development, operations, and sustainment: Patuxent River, Maryland (Test & Evaluation) in FY 2011; Jacksonville, Florida in FY 2012, FY 2013 and FY 2016; Central Command in FY 2013; Ventura County, California in FY 2013, FY 2014, FY 2016 and FY 2017; Guam in FY 2014; Whidbey Island, Washington in FY 2017; Sigonella, Italy in FY 2017; and East Coast (C4F) in FY 2019. Changes since last year reflect revised estimates due to rephasing of funding to account for the revised program schedule.

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	4/18/2008	11/1/2011
Approved Quantity	10	10
Reference	Milestone B ADM	ADM
Start Year	2013	2013
End Year	2015	2017

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 Milestone (MS) B ADM approved the planning for the program's MS C LRIP decision and stipulated the quantity will not exceed 10 unmanned aircraft systems and related ground control systems.

A subsequent ADM directed redesignation of the first lot of aircraft from LRIP Lot 1 to System Demonstration Test Articles (SDTAs), with LRIP Lot 1 to follow. The SDTA aircraft will validate critical Key Performance Parameters 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 10 LRIP aircraft but currently plans to procure eight 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

The Office of the Under Secretary of Defense for Acquisition, Technology & Logistics (OUSD(AT&L)) selected the MQ-4C Triton to participate in Phase-I of the Defense Exportability Features (DEF) pilot program to assess the feasibility of incorporating technology protection measures to enhance the exportability of the MQ-4C Triton. Efforts began in 2012 and will continue through 2015. The goal of the DEF program is to define export configurations for the MQ-4C Triton. This will ultimately increase interoperability with our allies while reducing the unit cost to the United States Government (USG). Actual implementation of the features will be covered under Phase II of the DEF program.

Over the years, the Commonwealth of Australia (CoA) has maintained interest in the MQ-4C Triton as a top solution to meet their need for a Multi-mission Unmanned Aircraft System (MUAS). The CoA participated in a cooperative program with the USG for the pre-System Development and Demonstration (SDD) phase of the MQ-4C Triton program. However in 2008, they decided not to continue as a cooperative partner for SDD phase. The CoA recently renewed interest in the MQ-4C Triton program, and implemented an FMS Planning case with the United States Navy on August 1, 2013. The FMS Planning case is providing technical information and services to validate that the MQ-4C Triton will meet their specific MUAS requirements and help transition the CoA to an FMS procurement case.

Other interested foreign governments include Canada, Japan, Germany, Norway and the United Kingdom.

Nuclear Costs

None

Unit Cost

Unit Cost Report

	BY2008 \$M	BY2008 \$M	
Unit Cost	Current UCR Baseline (JAN 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

Program Acquisition Unit Cost (PAUC)

Cost	12224.5	12242.9	
Quantity	70	70	
Unit Cost	174.636	174.899	+0.15

Average Procurement Unit Cost (APUC)

Cost	8871.2	8491.6	
Quantity	65	66	
Unit Cost	136.480	128.661	-5.73

	BY2008 \$M	BY2008 \$M	
Unit Cost	Original UCR Baseline (FEB 2009 APB)	Current Estimate (DEC 2013 SAR)	BY % Change

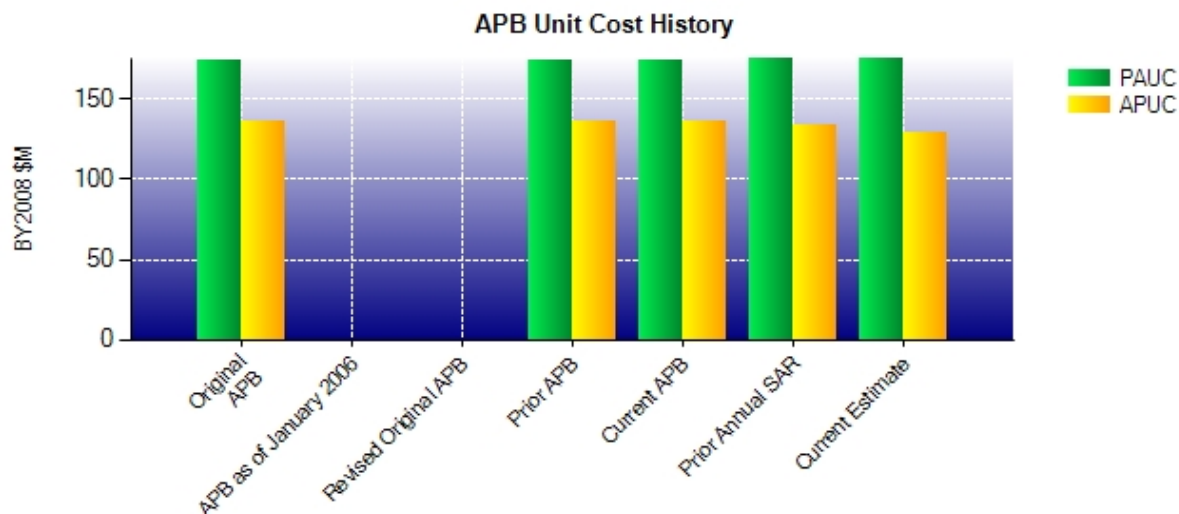
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Unit Cost History



	Date	BY2008 \$M		TY \$M	
		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 2012	175.049	133.515	218.117	175.111
Current Estimate	DEC 2013	174.899	128.661	219.549	171.102

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	-3.530	1.732	8.881	0.319	5.903	0.000	-10.503	2.802	219.549

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	-3.042	-0.851	9.420	0.000	-0.094	0.000	-11.648	-6.215	171.102

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	DEC 2015
IOC	N/A	DEC 2015	N/A	APR 2018
Total Cost (TY \$M)	N/A	15172.3	N/A	15368.4
Total Quantity	N/A	70	N/A	70
Prog. Acq. Unit Cost (PAUC)	N/A	216.747	N/A	219.549

Cost Variance

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	3223.6	11525.6	423.1	15172.3
Previous Changes				
Economic	-29.3	-138.0	+2.5	-164.8
Quantity	--	--	--	--
Schedule	--	+343.9	--	+343.9
Engineering	+22.3	--	--	+22.3
Estimating	+306.8	-41.5	-96.6	+168.7
Other	--	--	--	--
Support	+33.6	-307.8	--	-274.2
Subtotal	+333.4	-143.4	-94.1	+95.9
Current Changes				
Economic	-16.4	-62.8	-3.1	-82.3
Quantity	--	+121.2	--	+121.2
Schedule	--	+277.8	--	+277.8
Engineering	--	--	--	--
Estimating	+192.4	+35.3	+16.8	+244.5
Other	--	--	--	--
Support	--	-461.0	--	-461.0
Subtotal	+176.0	-89.5	+13.7	+100.2
Total Changes	+509.4	-232.9	-80.4	+196.1
CE - Cost Variance	3733.0	11292.7	342.7	15368.4
CE - Cost & Funding	3733.0	11292.7	342.7	15368.4

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	--	+168.7	--	+168.7
Engineering	+19.2	--	--	+19.2
Estimating	+252.7	-45.9	-81.3	+125.5
Other	--	--	--	--
Support	+31.0	-315.5	--	-284.5
Subtotal	+302.9	-192.7	-81.3	+28.9
Current Changes				
Economic	--	--	--	--
Quantity	--	+81.0	--	+81.0
Schedule	--	+90.9	--	+90.9
Engineering	--	--	--	--
Estimating	+166.0	+27.4	+10.4	+203.8
Other	--	--	--	--
Support	--	-386.2	--	-386.2
Subtotal	+166.0	-186.9	+10.4	-10.5
Total Changes	+468.9	-379.6	-70.9	+18.4
CE - Cost Variance	3458.2	8491.6	293.1	12242.9
CE - Cost & Funding	3458.2	8491.6	293.1	12242.9

Previous Estimate: December 2012

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-16.4
Adjustment for current and prior escalation. (Estimating)	+11.0	+12.2
Decreased funding due to FY 2013 sequestration which necessitated the reduction of System Demonstration Test Article quantities from three to two. (Estimating)	-40.7	-44.8
Revised estimate due to technical challenges encountered during system development and rephasing of funding to align with the re-plan of the program. (Estimating)	+192.0	+220.8
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+3.7	+4.2
RDT&E Subtotal	+166.0	+176.0

Procurement	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-62.8
Adjustment for current and prior escalation. (Estimating)	+1.0	+1.2
Total Quantity variance resulting from an increase of one MQ-4C Triton from 65 to 66. (Subtotal)	+81.3	+121.7
Quantity variance resulting from an increase of one MQ-4C Triton from 65 to 66. (Quantity)	(+81.0)	(+121.2)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(0.0)	(+0.1)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+0.3)	(+0.4)
Increase due to a one-year shift to production from FY 2014 through FY 2027 to FY 2015 through FY 2028. (Schedule)	0.0	+143.7
Additional Schedule Variance related to production line inefficiencies and lost learning due to the one year shift. (Schedule)	+90.6	+133.7
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+26.4	+34.0
Decrease in Other Support due to revised estimate associated with production engineering support. (Support)	-428.6	-542.5
Increase in Initial Spares due to revised estimate associated with the Baseline Assessment Memorandum (BAM) process. (Support)	+42.4	+81.5
Procurement Subtotal	-186.9	-89.5

(QR) Quantity Related

MILCON	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-3.1
Adjustment for current and prior escalation. (Estimating)	+1.6	+1.8
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+2.6	+3.1
Revised estimate due to rephasing of funding to account for revised program schedule. (Estimating)	+6.2	+11.9

MILCON Subtotal

+10.4

+13.7

Contracts

Appropriation: RDT&E

Contract Name	Triton UAS SDD Contract
Contractor	Northrop Grumman Systems Corporation
Contractor Location	17006 Goldentop Rd San Diego, CA 92127
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
2234.0	N/A	2	2812.0	N/A	4	3081.0	2993.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract scope increases negotiated to satisfy United States Navy requirements.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/21/2014)	-2.0	-21.0
Previous Cumulative Variances	-186.1	-49.5
Net Change	+184.1	+28.5

Cost and Schedule Variance Explanations

The favorable net change in the schedule variance is due to material deliveries to support the flight test program.

General Contract Variance Explanation

The unfavorable cumulative cost variances to date reflect performance for November and December. In this time period, software development and flight test experienced delays that were driven by Kearfott Navigator issues. A software correction is planned to be implemented in the next major software release (Integrated Functional Capability 2.1).

Contract Comments

The contract was modified from Cost Plus Award Fee to Cost Plus Incentive Fee as part of an Over Target Baseline/Over Target Schedule contract modification in January 2014.

Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	2	2	4	50.00%
Production	0	0	66	0.00%
Total Program Quantity Delivered	2	2	70	2.86%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	15368.4	Years Appropriated	11
Expended to Date	2556.7	Percent Years Appropriated	44.00%
Percent Expended	16.64%	Appropriated to Date	3317.5
Total Funding Years	25	Percent Appropriated	21.59%

The above data is current as of 1/31/2014.

Operating and Support Cost

MQ-4C Triton

Assumptions and Ground Rules

Cost Estimate Reference:

The date of the estimate is January 2012, and the source is Naval Air Systems Command 4.2 Cost Department. Costs are estimated in FY 2008 dollars, the BY of the estimate. An APB revision is in work and will include a revised O&S estimate. The O&S estimate will be updated to include cost drivers (refinement of Multi-Function Active Sensor radar estimates and inclusion of a program ramp-down period) and cost increases are expected.

Total Operational Aircraft Procured:	68
Primary Authorized Aircraft (PAA):	20
Aircraft Attrition Rate:	4 per 100K Flight Hours
Total Operational Aircraft Years:	440

Sustainment Strategy:

The MQ-4C Triton Product Support Strategy focuses on total platform support to ensure compliance with operational requirements and metrics as defined by the Fleet via a Warfighter Performance Based Agreement . The Life Cycle Sustainment Strategy is being evaluated by a series of single element Business Case Analyses and studies to identify element support strategies that provide the greatest cost, benefit, performance and risk solutions for each element to comply with Naval Organizational, Intermediate, and Depot Level Maintenance Concepts. The average flight hour utilization per month, per aircraft, is 226. The flight hour utilization per aircraft, per year, is 2,711. The number of aircraft per Main Operating Base and Forward Operating Base is four.

Quantity: The total quantity of operational aircraft being procured is 68 which includes two RDT&E funded System Demonstration Test Articles.

Service Life: The PAA of 20 aircraft will be operated and maintained from FY 2016 through FY 2039.

Antecedent Information:

The MQ-4C Triton is a new capability, and there is no antecedent program.

Unitized O&S Costs BY2008 \$M			
Cost Element	MQ-4C Triton Cost per Air Vehicle per Year	No Antecedent (Antecedent) N/A	
Unit-Level Manpower	3.433		0.000
Unit Operations	1.843		0.000
Maintenance	9.074		0.000
Sustaining Support	0.539		0.000
Continuing System Improvements	1.163		0.000
Indirect Support	1.081		0.000
Other	0.000		0.000
Total	17.133		--

Unitized Cost Comments:

The average annual cost per unit for the MQ-4C Triton is calculated by dividing the Total O&S Cost by the Total Operational Aircraft Years for the program.

Total O&S Cost \$M				
Current Development APB Objective/Threshold		Current Estimate		
MQ-4C Triton		MQ-4C Triton	No Antecedent (Antecedent)	
Base Year	6912.1	7603.3	7538.3	N/A
Then Year	10494.5	N/A	11689.3	N/A

Total O&S Costs Comments:

None

Disposal Costs:

Disposal costs are estimated at \$3.4M (BY 2008) based on the January 2012 cost estimate.