Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-289

TACTICAL TOMAHAWK

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

Block IV Tomahawk (Tactical Tomahawk)

DoD Component

Navy

Responsible Office

Responsible Office

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Date Assigned November 15, 2010

References

SAR Baseline (Production Estimate)

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated August 3, 2004

Approved APB

NAE Approved Acquisition Program Baseline (APB) dated April 11, 2005

Mission and Description

The Tomahawk Land Attack Missile counters threats against U.S. Forces by destroying targets ashore including command, control and logistic systems, industrial and other high value targets, and ground and air defense systems. The Tomahawk Weapons System (TWS) consists of the Block IV Tactical Tomahawk All-Up-Round (AUR) missile, the Tomahawk Command and Control System (TC2S), and the Tactical Tomahawk Weapons Control System (TTWCS). The AUR is an ACAT IC program, TC2S is an ACAT II program, and TTWCS is an ACAT III program. Block IV Tactical Tomahawk provides major modernization to the existing Tomahawk technology by increasing responsiveness and flexibility at a more affordable production unit cost.

Key elements of the Block IV Tactical Tomahawk AUR design are an improved navigation and guidance computer, improved anti-jam Global Positioning System (GPS) capability, improved responsiveness and flexibility through two-way satellite communications for in-flight re-targeting, a loiter capability, and the ability to send a single-frame Battle Damage Indication Image (BDII) of over-flown areas prior to impact. Modern manufacturing techniques and Commercial Off-the-Shelf/Government Off-the-Shelf (COTS/GOTS) hardware provide this improved capability at less than half the production cost of a Block III Tomahawk. Additionally, the life cycle costs are significantly reduced by extending the re-certification interval from 8 years for the currently fielded Block III to 15 years for the Block IV Tactical Tomahawk AUR. The Block IV Tactical Tomahawk AUR will maximize the use of existing TWS program and logistic support. There is no change to the system's overall support concept.

Executive Summary

The Assistant Secretary of the Navy (Research Development and Acquisition) (ASN(RD&A)) authorized approval of the Block IV Tactical Tomahawk All-Up-Round (AUR) for entry into the Production and Deployment Phase on August 3, 2004. A Multi-Year Procurement (MYP) contract (FY2004-FY2008) was signed with Raytheon Missile Systems (RMS) for 1946 Block IV Tactical Tomahawk AUR missiles on August 18, 2004. RMS, utilizing the MYP program, has delivered 1945 missiles to the US Navy (USN). The contract for the follow-on production Block IV Tactical Tomahawk AUR program has been signed for the Acquisition of up to 1050 additional missiles. The FY 2009 procurement contract for 207 missiles started deliveries in October 2010 and is presently 53 missiles ahead of schedule. The FY2010 option for 196 missiles was placed on contract January 27, 2010 and the FY 2011 option for 196 missiles was placed on contract on December 16, 2010. The Minimum Sustaining Rate (MSR) for Tactical Tomahawk is 196 missiles per year. To address rising unit costs, the Program completed analysis for numerous Cost Reduction Initiatives (CRI). The CRIs were implemented resulting in $15M of cost avoidance benefits applicable to the FY 2009-FY2011 missile procurements.

As of December 31, 2010, RMS has achieved eighteen consecutive months of meeting or exceeding the contracted missile delivery requirements. The current combined Block III and IV Fleet inventory is sufficient to satisfy projected 2011 USN operational load-outs.

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

Threshold Breaches

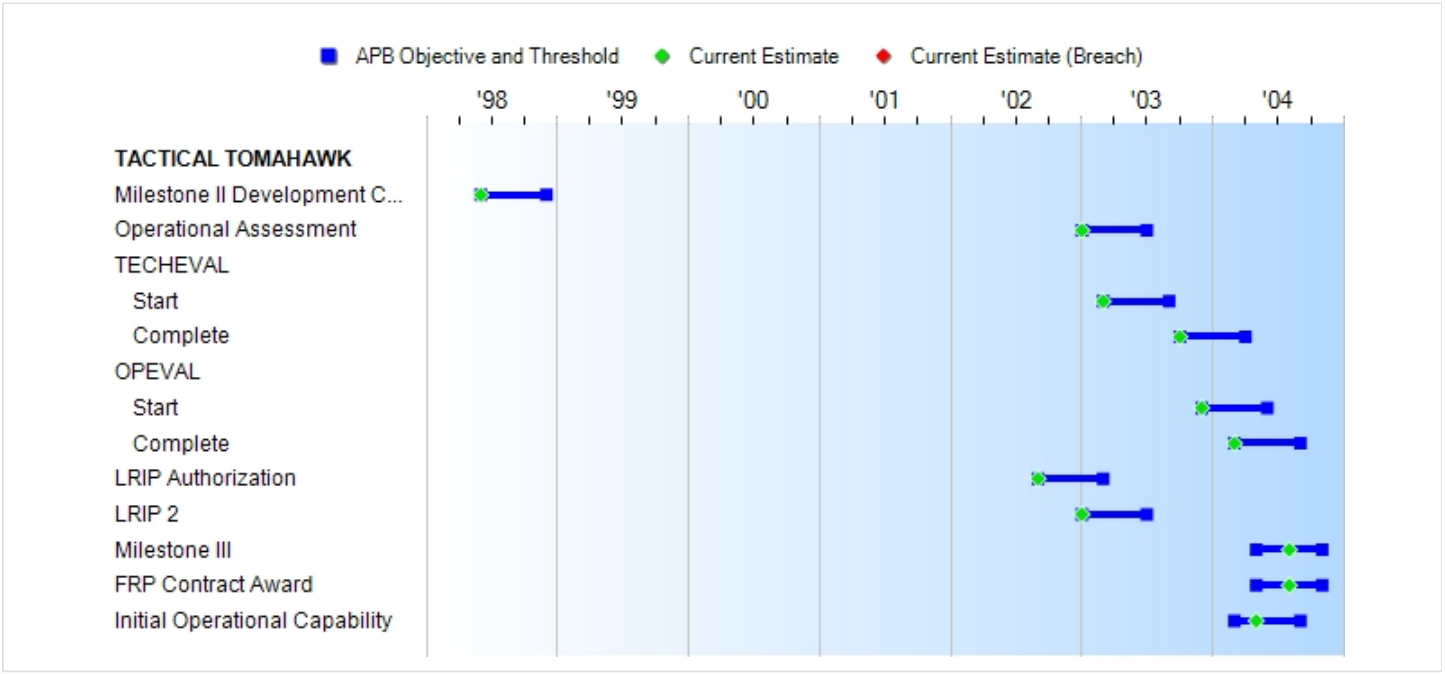
APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☑
	MILCON	☐
	Acq O&M	☐
Unit Cost	PAUC	☐
	APUC	☑

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

Explanation of Breach

As reported in the December 2009 Selected Acquisition Report (SAR).

Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
Milestone II Development Contract Award	JUN 1998	JUN 1998	DEC 1998	JUN 1998
Operational Assessment	JAN 2003	JAN 2003	JUL 2003	JAN 2003
TECHEVAL				
Start	MAR 2003	MAR 2003	SEP 2003	MAR 2003
Complete	OCT 2003	OCT 2003	APR 2004	OCT 2003
OPEVAL				
Start	DEC 2003	DEC 2003	JUN 2004	DEC 2003
Complete	MAR 2004	MAR 2004	SEP 2004	MAR 2004
LRIP Authorization	SEP 2002	SEP 2002	MAR 2003	SEP 2002
LRIP 2	JAN 2003	JAN 2003	JUL 2003	JAN 2003
Milestone III	MAY 2004	MAY 2004	NOV 2004	AUG 2004
FRP Contract Award	MAY 2004	MAY 2004	NOV 2004	AUG 2004
Initial Operational Capability	MAR 2004	MAR 2004	SEP 2004	MAY 2004

Acronyms And Abbreviations

FRP - Full Rate Production
LRIP - Low Rate Initial Production
OPEVAL - Operational Evaluation
TECHEVAL - Technical Evaluation

Change Explanations

None

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate	
Mission Reliability (%)	.90	.90	.86	TBD	.95	(Ch-1)
Cruise Reliability (%)	.96	.96	.94	TBD	1.0	(Ch-2)

Requirements Source: Operational Requirements Document (ORD) #641-76-04 dated August 11, 2004

Acronyms And Abbreviations

CR - Cruise Reliability
MR - Mission Reliability

Change Explanations

(Ch-0) Starting in 2009, updated methodology has been used to calculate both Mission Reliability (MR) and Cruise Reliability (CR):
Demonstrated Mission Reliability and Cruise Reliability use the definitions stated in the Tomahawk Weapon Systems Baseline IV Operational Requirements Document (ORD) of August 11, 2004 based upon credible test events. The data set includes operational flight tests (OTLs), Foreign Military Sales (FMS) flight tests, and combat expenditures and accounting for corrective actions in the missile inventory. Credible test events now include Operational Evaluation (OPEVAL), Technical Evaluation (TECHEVAL), Tactical Tomahawk Penetrating Vehicle flights, contractor flights, ground tests, representative FMS test events, and combat expenditures. Corrected failures that meet all of the following criteria have been removed from the data set: root cause of a failure is known, the failure mode is eliminated by hardware or software modification, the modification has been appropriately verified by test, and the modification has been implemented throughout the entire missile population.

(Ch-1) The December 2009 Selected Acquisition Report (SAR) erroneously reported 2008 Performance Characteristics of 0.88 Mission Reliability as opposed to the actual 0.97 Mission Reliability figure for 2009.

The Current Estimate for the 2010 SAR reports a decrease in MR from 0.97 to 0.95.
Of the 10 Block IV expenditures in CY 2010, 1 flight test failure occured decreasing MR to 0.95. MR remains significantly above the requirement.

(Ch-2) The December 2009 SAR also erroneously reported 2008 Performance Characteristics of 0.94 Cruise Reliability as opposed to the actual 1.00 Cruise Reliability figure for 2009.

The Current Estimate for the 2010 SAR reports no change in CR; CR remains at 1.00

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

Track To Budget

RDT&E				
APPN 1319	BA 07	PE 0204229N	(Navy)	
	Project A0545	TACTICAL TOMAHAWK/TACTICAL TOMAHAWK		
	Project A2658	TACTICAL TOMAHAWK/TACTICAL TOMAHAWK		(Sunk)
	Project A2659	TACTICAL TOMAHAWK/TACTICAL TOMAHAWK		(Sunk)

Procurement				
APPN 1507	BA 02	PE 0204229N	(Navy)	
	ICN 210100	TACTICAL TOMAHAWK		

ICN 6120 for PE 0204162, Spares and Repair parts, is currently tagged to the program's PNO 289, but does not provide procurement funding to the Tactical Tomahawk program.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY1999 $M			BY1999 $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	564.9	564.9	621.4	565.1	581.0	581.0	581.9
Procurement	2412.4	3099.1	3409.0	**4958.6**[1]	2709.3	3629.1	6291.9
Flyaway	2378.8	--	--	4866.0	2671.3	--	6174.8
Recurring	2342.9	--	--	4830.7	2633.2	--	6137.1
Non Recurring	35.9	--	--	35.3	38.1	--	37.7
Support	33.6	--	--	92.6	38.0	--	117.1
Other Support	33.6	--	--	92.6	38.0	--	117.1
Initial Spares	0.0	--	--	0.0	0.0	--	0.0
MILCON	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
Total	2977.3	3664.0	N/A	5523.7	3290.3	4210.1	6873.8

[1] ***APB Breach***

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	10	10	10
Procurement	2780	3394	4730
Total	2790	3404	4740

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2012 President's Budget / December 2010 SAR (TY$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	581.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	581.9
Procurement	2897.8	300.2	303.3	312.7	322.2	328.7	336.4	1490.6	6291.9
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 2012 Total	3479.7	300.2	303.3	312.7	322.2	328.7	336.4	1490.6	6873.8
PB 2011 Total	3479.7	300.2	305.4	313.9	322.6	332.8	356.6	1474.2	6885.4
Delta	0.0	0.0	-2.1	-1.2	-0.4	-4.1	-20.2	16.4	-11.6

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	10	0	0	0	0	0	0	0	0	10
Production	0	2685	196	196	196	196	196	196	869	4730
PB 2012 Total	10	2685	196	196	196	196	196	196	869	4740
PB 2011 Total	10	2685	196	196	196	196	196	213	852	4740
Delta	0	0	0	0	0	0	0	-17	17	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
1998	--	--	--	--	--	--	49.8
1999	--	--	--	--	--	--	122.4
2000	--	--	--	--	--	--	164.2
2001	--	--	--	--	--	--	105.4
2002	--	--	--	--	--	--	63.0
2003	--	--	--	--	--	--	57.3
2004	--	--	--	--	--	--	19.8
Subtotal	**10**	**--**	**--**	**--**	**--**	**--**	**581.9**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1999 $M	Non End Item Recurring Flyaway BY 1999 $M	Non Recurring Flyaway BY 1999 $M	Total Flyaway BY 1999 $M	Total Support BY 1999 $M	Total Program BY 1999 $M
1998	--	--	--	--	--	--	49.9
1999	--	--	--	--	--	--	121.3
2000	--	--	--	--	--	--	160.3
2001	--	--	--	--	--	--	101.5
2002	--	--	--	--	--	--	60.1
2003	--	--	--	--	--	--	53.9
2004	--	--	--	--	--	--	18.1
Subtotal	**10**	**--**	**--**	**--**	**--**	**--**	**565.1**

Annual Funding TY$
1507 | Procurement | Weapons 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
2002	25	46.2	--	24.0	70.2	2.4	72.6
2003	377	420.9	--	13.7	434.6	2.9	437.5
2004	322	344.6	--	--	344.6	7.4	352.0
2005	298	268.5	--	--	268.5	8.7	277.2
2006	409	363.1	--	--	363.1	9.9	373.0
2007	355	345.3	--	--	345.3	7.7	353.0
2008	496	470.8	--	--	470.8	5.0	475.8
2009	207	275.2	--	--	275.2	5.0	280.2
2010	196	270.2	--	--	270.2	6.3	276.5
2011	196	294.7	--	--	294.7	5.5	300.2
2012	196	297.7	--	--	297.7	5.6	303.3
2013	196	306.9	--	--	306.9	5.8	312.7
2014	196	316.3	--	--	316.3	5.9	322.2
2015	196	322.7	--	--	322.7	6.0	328.7
2016	196	330.2	--	--	330.2	6.2	336.4
2017	230	370.7	--	--	370.7	6.5	377.2
2018	213	357.7	--	--	357.7	6.6	364.3
2019	213	364.3	--	--	364.3	6.8	371.1
2020	213	371.1	--	--	371.1	6.9	378.0
Subtotal	**4730**	**6137.1**	**--**	**37.7**	**6174.8**	**117.1**	**6291.9**

Annual Funding BY$
1507 | Procurement | Weapons Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 1999 $M	Non End Item Recurring Flyaway BY 1999 $M	Non Recurring Flyaway BY 1999 $M	Total Flyaway BY 1999 $M	Total Support BY 1999 $M	Total Program BY 1999 $M
2002	25	43.5	--	22.6	66.1	2.3	68.4
2003	377	388.4	--	12.7	401.1	2.7	403.8
2004	322	308.8	--	--	308.8	6.7	315.5
2005	298	234.2	--	--	234.2	7.6	241.8
2006	409	309.0	--	--	309.0	8.5	317.5
2007	355	287.7	--	--	287.7	6.4	294.1
2008	496	386.5	--	--	386.5	4.1	390.6
2009	207	223.2	--	--	223.2	4.0	227.2
2010	196	216.4	--	--	216.4	5.0	221.4
2011	196	232.5	--	--	232.5	4.4	236.9
2012	196	231.2	--	--	231.2	4.4	235.6
2013	196	234.4	--	--	234.4	4.5	238.9
2014	196	237.6	--	--	237.6	4.4	242.0
2015	196	238.3	--	--	238.3	4.4	242.7
2016	196	239.8	--	--	239.8	4.5	244.3
2017	230	264.7	--	--	264.7	4.6	269.3
2018	213	251.1	--	--	251.1	4.7	255.8
2019	213	251.5	--	--	251.5	4.7	256.2
2020	213	251.9	--	--	251.9	4.7	256.6
Subtotal	**4730**	**4830.7**	**--**	**35.3**	**4866.0**	**92.6**	**4958.6**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	4/12/2001	8/26/2003
Approved Quantity	192	402
Reference	Tactical Tomahawk AUR LRIP ADM dated 12 April 2001.	Tactical Tomahawk AUR LRIP III ASR/AP signed by ASN(RD&A) 26 Aug 2003.
Start Year	2002	2002
End Year	2007	2007

Low Rate Initial Production (LRIP-1) was initiated in October 2002 with a contract for 25 Block IV Tactical Tomahawk All-Up-Round (AUR) missiles. The LRIP-2 contract option was exercised for an additional 167 Block IV Tactical Tomahawk AUR missiles in January 2003. As a result of Operation Iraqi Freedom and expenditures of a large number of Block III Tomahawk Missiles, FY2003 Emergency Supplemental funding was provided for 210 additional Block IV Tactical Tomahawk AUR LRIP missiles (LRIP-3) to increase the total LRIP quantity to 402 missiles.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost $M	Memo
United Kingdom	2/10/2006	65	64.0	Torpedo Tube Launch (TTL) Block IV missiles were purchased in FY2006; cost includes missiles and ancillary equipment. All UK missiles on contract have been delivered.

Nuclear Cost

None

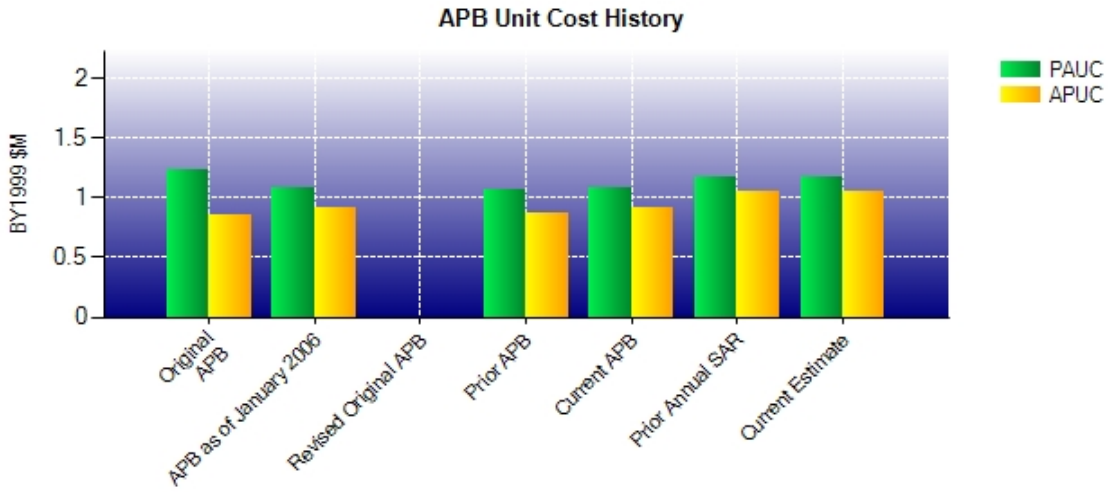
Unit Cost

Unit Cost Report

Unit Cost	BY1999 $M Current UCR Baseline (APR 2005 APB)	BY1999 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	3664.0	5523.7	
Quantity	3404	4740	
Unit Cost	1.076	1.165	+8.27
Average Procurement Unit Cost (APUC)			
Cost	3099.1	4958.6	
Quantity	3394	4730	
Unit Cost	0.913	1.048	+14.79

Unit Cost	BY1999 $M Original UCR Baseline (SEP 1999 APB)	BY1999 $M Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1683.7	5523.7	
Quantity	1365	4740	
Unit Cost	1.233	1.165	-5.52
Average Procurement Unit Cost (APUC)			
Cost	1158.4	4958.6	
Quantity	1353	4730	
Unit Cost	0.856	1.048	+22.43

Unit Cost History



		BY1999 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	SEP 1999	1.233	0.856	1.365	0.984
APB as of January 2006	APR 2005	1.076	0.913	1.237	1.069
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	AUG 2004	1.067	0.868	1.179	0.975
Current APB	APR 2005	1.076	0.913	1.237	1.069
Prior Annual SAR	DEC 2009	1.166	1.049	1.453	1.333
Current Estimate	DEC 2010	1.165	1.048	1.450	1.330

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	
1.365	-0.015	0.324	0.117	0.000	-0.716	0.000	0.104	-0.186	1.179

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
1.179	0.009	-0.125	0.079	0.008	0.284	0.000	0.016	0.271	1.450

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	
0.984	-0.015	0.325	0.097	0.000	-0.520	0.000	0.104	-0.009	0.975

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.975	0.009	-0.042	0.079	0.008	0.285	0.000	0.016	0.355	1.330

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	JUN 1998	JUN 1998	JUN 1998
Milestone III	N/A	JUN 2003	MAY 2004	AUG 2004
IOC	N/A	APR 2003	MAR 2004	MAY 2004
Total Cost (TY $M)	N/A	1863.4	3290.3	6873.8
Total Quantity	N/A	1365	2790	4740
Prog. Acq. Unit Cost (PAUC)	N/A	1.365	1.179	1.450

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	581.0	2709.3	--	3290.3
Previous Changes				
Economic	+0.9	+49.8	--	+50.7
Quantity	--	+1703.4	--	+1703.4
Schedule	--	+372.2	--	+372.2
Engineering	--	+40.0	--	+40.0
Estimating	--	+1353.7	--	+1353.7
Other	--	--	--	--
Support	--	+75.1	--	+75.1
Subtotal	+0.9	+3594.2	--	+3595.1
Current Changes				
Economic	--	-6.8	--	-6.8
Quantity	--	--	--	--
Schedule	--	+2.4	--	+2.4
Engineering	--	--	--	--
Estimating	--	-7.8	--	-7.8
Other	--	--	--	--
Support	--	+0.6	--	+0.6
Subtotal	--	-11.6	--	-11.6
Total Changes	+0.9	+3582.6	--	+3583.5
CE - Cost Variance	581.9	6291.9	--	6873.8
CE - Cost & Funding	581.9	6291.9	--	6873.8

Summary Base Year 1999 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	564.9	2412.4	--	2977.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	+1212.6	--	+1212.6
Schedule	--	+254.6	--	+254.6
Engineering	--	+30.6	--	+30.6
Estimating	+0.2	+993.9	--	+994.1
Other	--	--	--	--
Support	--	+58.5	--	+58.5
Subtotal	+0.2	+2550.2	--	+2550.4
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+1.3	--	+1.3
Engineering	--	--	--	--
Estimating	--	-5.8	--	-5.8
Other	--	--	--	--
Support	--	+0.5	--	+0.5
Subtotal	--	-4.0	--	-4.0
Total Changes	+0.2	+2546.2	--	+2546.4
CE - Cost Variance	565.1	4958.6	--	5523.7
CE - Cost & Funding	565.1	4958.6	--	5523.7

Previous Estimate: December 2009

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-6.8
Stretch-out of procurement buy profile due to quantity shift in FY 2016 from 213 missiles to 196 missiles and in FY 2017 from 213 missiles to 230 missiles. (Schedule)	0.0	+0.4
Additional schedule variance resulting from the quantity shift in FY 2016 and FY 2017 which impacts total overall unit cost. (Schedule)	+1.3	+2.0
Adjustment for current and prior escalation. (Estimating)	+0.6	+0.5
Budget adjustment for Navy Working Capital Fund (WCF) Rate Adjustment (Estimating)	-1.7	-2.0
Budget adjustment for WCF (Estimating)	-4.2	-5.7
Budget adjustment for Contractor Services Reduction (Estimating)	-0.5	-0.6
Adjustment for current and prior escalation. (Support)	0.0	+0.2
Increase in Other Support is due to an increase in overall estimated support costs beginning in FY 2010 through FY 2020. (Support)	+0.5	+0.4
Procurement Subtotal	-4.0	-11.6

Contracts

Appropriation: Procurement

Contract Name	**BLK IV TOM. FRP/MYP**
Contractor	RAYTHEON MISSILE SYSTEMS
Contractor Location	TUCSON, AZ 85747
Contract Number, Type	N00019-04-C-0569, FFP
Award Date	August 18, 2004
Definitization Date	August 18, 2004

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1441.2	N/A	1981	1723.9	N/A	1946	1723.9	1723.9

Cost And Schedule Variance Explanations

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

Contract Comments

Deliveries complete as of September 30, 2010.

Contract price increased from base year award because all contract option years have been exercised.

December 2010 SAR will be the final report for this contract.

Appropriation: Procurement

Contract Name	**BLK IV TOM FRP FY09-11**
Contractor	Raytheon Missile Systems
Contractor Location	Tucson, AZ 85747
Contract Number, Type	N00019-09-C-0007, FFP
Award Date	March 31, 2009
Definitization Date	March 31, 2009

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
207.3	N/A	207	655.3	N/A	599	655.3	655.3

Cost And Schedule Variance Explanations

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

Contract Comments

Full Rate Production (FY2009-FY2011) base year plus two option years. Contract signed March 31, 2009 for up to 1050 Block IV Tactical Tomahawk All-Up-Round (AUR) missiles.

Current contract price includes USN missiles, subsurface variant capsules, production support and ancillary equipment.

The FY2009 base year contract was awarded in January 2009 for the procurement of 207 missiles at a contract price of $207.3M. To date, both missile option years and one capsule option have been exercised increasing total contract procurement quantity to 599 missiles and total contract price to $655.3M.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	10	10	10	100.00%
Production	2340	2393	4730	50.59%
Total Program Quantities Delivered	2350	2403	4740	50.70%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	6873.8	Years Appropriated	14
Expenditures To Date	3081.3	Percent Years Appropriated	60.87%
Percent Expended	44.83%	Appropriated to Date	3779.9
Total Funding Years	23	Percent Appropriated	54.99%

Production deliveries and expenditures to date figures are as of December 31, 2010. Raytheon Missile Systems (RMS) has delivered 53 missiles ahead of plan to date amount.

Operating and Support Cost

Assumptions And Ground Rules

The operational concept is a "wooden round" which does not undergo maintenance except at the depot level. The maintenance cycle is known as a recertification and includes examination and replacement of time-limited components. Block IV Tomahawk depot maintenance is significantly less than Block III because of the 15 year recertification interval.

An Operational Test Launch (OTL) program is conducted to determine operational readiness and aging effects of the deployed system and to provide Fleet training. The Block III OTL program generally averaged 8 launches per year, while the Block IV Tomahawk program was estimated at 3 launches per year.

The software support activity includes hardware and software maintenance for the operational flight system, the weapons fire control system, and independent validation and verification of the software.

Technical and Operations costs include life cycle management training, Naval Weapons station operations, integrated logistic support and contractor engineering technical services.

Theater Mission Planning Center (TMPC) provides for the programming of Tomahawk missions and maintenance of hardware and software systems. This was a cost element of Tomahawk Block III because those costs were reported at a total weapons system level, but is not a cost element of the Block IV Tomahawk All-Up-Round (AUR) because the Block IV Tomahawk costs are reported at the AUR only level.

Platform maintenance was included for Tomahawk Block III launch platforms at an approximate level of 134 platforms per year. This was a cost element of Tomahawk Block III because those costs were reported at a total weapons system level, but is not a cost element of Block IV Tomahawk because the Block IV Tomahawk costs are reported at the AUR only level.

The Block IV Tomahawk will be maintained using the same maintenance philosophy and infrastructure as the current Tomahawk Block III. Tomahawk Block III is the antecedent system. Due to differences in the estimation of Operating & Support (O&S) cost elements for the Tomahawk Block III and the Block IV Tomahawk, the comparison of total O&S costs is not meaningful.

Total O&S costs for both systems have been normalized to a 30-year period and to FY1999 Base Year Dollars.

Estimate of Block IV Tomahawk O&S Costs are curent as of December 2010.

Costs BY1999 $M		
Cost Element	**TACTICAL TOMAHAWK AVG. ANN. COST OF 3282 MSL.**	**TOMAHAWK BLOCK III AVG. ANN. COST OF 1296 MSL. FOR TOTAL SYSTEM**
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	29.3	36.6
Continuing System Improvements	--	--
Indirect Support	--	--
Other	57.2	65.4
Total Unitized Cost (Base Year 1999 $)	86.5	102.0

Total O&S Costs $M	TACTICAL TOMAHAWK	TOMAHAWK BLOCK III
Base Year	2597.2	3058.4
Then Year	3922.2	--