Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-290

Navy Multiband Terminal Satellite (NMT)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Program Information

Program Name

Navy Multiband Terminal Satellite (NMT)

DoD Component

Navy

Responsible Office

Responsible Office

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References

SAR Baseline (Production Estimate)

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated October 4, 2010

Approved APB

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated April 10, 2013

Mission and Description

The Navy Multiband Terminal (NMT) Program is the next generation maritime military satellite communications terminal. The NMT Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications for Naval forces. NMT multiband communication capabilities will communicate via two way Ka-Band on Wideband Global Satellite Communication (SATCOM) (WGS) and shipboard and submarine terminals to communicate with X-Band using the Defense Satellite Communications System (DSCS) and WGS. NMT will operate in the Extremely High Frequency (EHF)/AEHF Low Data Rate (LDR), Medium Data Rate (MDR), and Extended Data Rate (XDR) communication modes. NMT will sustain the Military Satellite Communication (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas to include land, air, and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on the capabilities of both the MILSTAR system and WGS system by equipping the warfighters with the assured, jam resistant, secure communications as described in the Operational Requirements Documents (ORD) for the joint AEHF Satellite Communications (AFSPC ORD 004-99, October 2000) and WGS System (Wideband Gapfiller System ORD, May 3, 2000), and the NMT Capability Production Document (NMT CPD 769-6F-08, Nov 18, 2008). The AEHF system will provide crosslinks within the constellation as well as between AEHF satellites and MILSTAR satellites in the backwards-compatible mode. Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the AEHF ORD. NMT will be a FORCEnet enabler by providing critical protected bandwidth for war fighter information services.

Executive Summary

The NMT program was authorized an extended year of Low Rate Initial Production (LRIP) by Assistant Secretary of the Navy (ASN) Research, Development, and Acquisition (RD&A) in a January 10, 2012 Gate-6 Review to continue with Production Year (PY) 3 procurement in the second quarter of FY 2012. Closure of the sustainability deficiencies from Initial Operational Test and Evaluation (IOT&E) was conducted through the completion of a Verification of Correction of Deficiencies (VCD) reported by the Navy's Commander Operational Test and Evaluation Force (COTF) on October 15, 2012. The report resulted in the NMT system being assessed as operationally effective and operationally suitable, and recommended NMT for further Fleet introduction. A Gate-6/Full-Rate Production Decision Review (FRP-DR) was conducted on November 8, 2012, and approved via an Acquisition Decision Memorandum (ADM) on November 30, 2012. This ADM authorized full production and installation for the NMT Program of Record and Other Customers, which allowed the program to award the first phase of the FY 2013 PY 4 contract buy for 14 units. On December 7, 2012, Office of the Chief of Naval Operations (OPNAV) Code N2/N6 declared Initial Operational Capability (IOC) for the NMT System.

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

Threshold Breaches

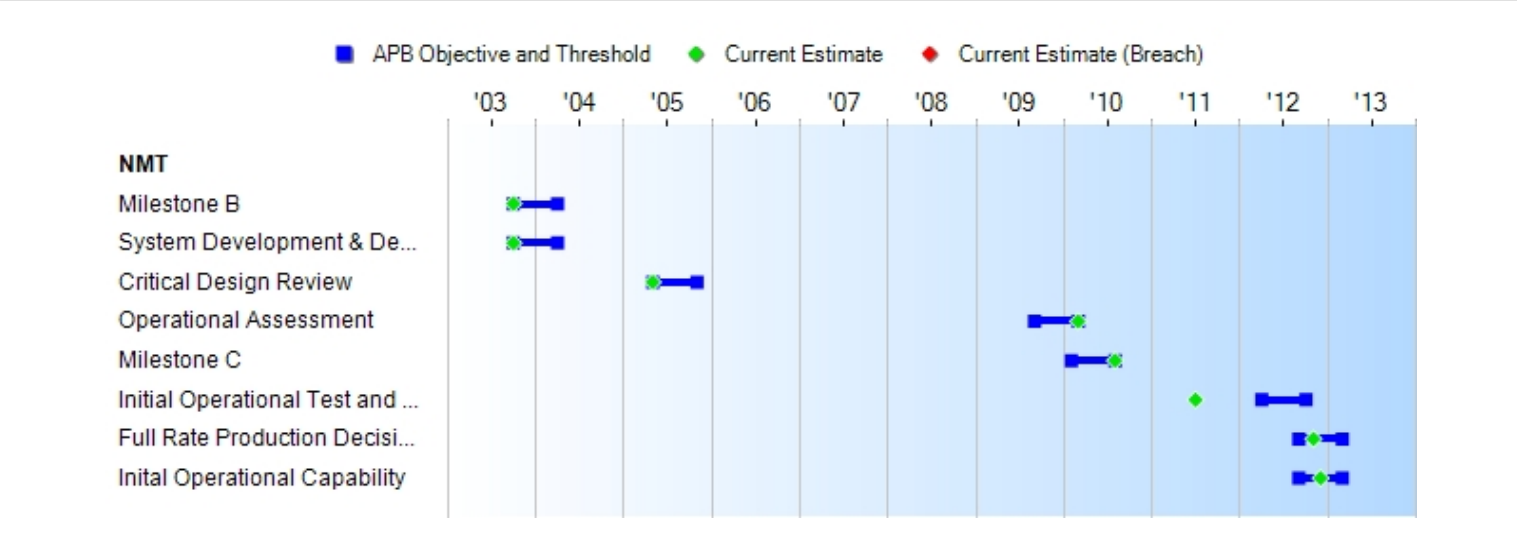
APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

Explanation of Breach

The NMT program recently refined its Program Life Cycle Cost Estimate (PLCCE) in support of a sucessful Service Cost Position (SCP) for the November 2012 Full Rate Production Decision Review. As a result of the updated cost position, the SAR no longer indicates a cost deviation in the NMT Program Acquisition Unit Cost (PAUC) and Average Procurement Unit Cost (APUC).

Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	
Milestone B	OCT 2003	OCT 2003	APR 2004	OCT 2003	
System Development & Demonstration Contract Award	OCT 2003	OCT 2003	APR 2004	OCT 2003	
Critical Design Review	MAY 2005	MAY 2005	NOV 2005	MAY 2005	
Operational Assessment	SEP 2009	SEP 2009	MAR 2010	MAR 2010	
Milestone C	FEB 2010	FEB 2010	AUG 2010	AUG 2010	
Initial Operational Test and Evaluation (Start)	APR 2012	APR 2012	OCT 2012	JUL 2011	
Full Rate Production Decision Review	SEP 2012	SEP 2012	MAR 2013	NOV 2012	(Ch-1)
Inital Operational Capability	SEP 2012	SEP 2012	MAR 2013	DEC 2012	(Ch-2)

Change Explanations

(Ch-1) The NMT Full Rate Production Decision Review date changed from SEP 2012 to NOV 2012, which is when the decision review occurred.

(Ch-2) The NMT Initial Operational Capability date changed from SEP 2012 to DEC 2012, which is when it was achieved.

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
NMT Antenna Control Coverage	The NMT shall be capable of pointing and tracking satellites with elevation angles of 0 deg (20 deg for the mast) above the horizon and 360 deg in azimuth with full platform dynamics. In the absence of sea state or submarine dynamics, the antenna shall have the capability to point at satellites down to 0 deg relative to the horizon.	The NMT shall be capable of pointing and tracking satellites with elevation angles of 0 deg (20 deg for the mast) above the horizon and 360 deg in azimuth with full platform dynamics. In the absence of sea state or submarine dynamics, the antenna shall have the capability to point at satellites down to 0 deg relative to the horizon.	The NMT shall be capable of pointing and tracking satellites with elevation angles of 10 deg (20 deg for the mast) above the horizon and 360 deg in azimuth with full platform dynamics.	Demonstrat-ed capability to acquire and track Milstar, WGS, and DSCS satellites.	The NMT shall be capable of pointing and tracking satellites with elevation angles of 0 deg (20 deg for the mast) above the horizon and 360 deg in azimuth with full platform dynamics. In the absence of sea state or submarine dynamics, the antenna shall have the capability to point at satellites down to 0 deg relative to the horizon.
Sustainment					
Materiel Availability	>= 0.95	>= 0.95	>= 0.75	Sub: 0.963 Ship: 0.932 Shore: 0.834	>= 0.95
Operational Availability (Ao)	>0.999 (sub) > 0.999 (ship/shore)	>0.999 (sub) > 0.999 (ship/shore)	> 0.940 (sub) > 0.900 (ship/shore)	Sub: 0.963 Ship: 0.932 Shore: 0.834	>0.999 (sub) > 0.999 (ship/shore)
Reliability					
Materiel Reliability – Mean Time	>= 2200 hrs	>= 2200 hrs	>= 1100 hrs	Ship: 1460 hrs	>= 2200 hrs

Between Failure (MTBF)				(10/15/2012) Shore: 700.5 hrs (10/15/2012) Sub: 216.95 hrs (11/14/2011)	
Materiel Reliability - Mean Time Between Critical Failure (MTBCF)	>= 4200 hrs	>= 4200 hrs	>= 1400 hrs	Ship: 1460 hrs (10/15/2012) Shore: 700.5 hrs (10/15/2012) Sub: 216.95 hrs (11/14/2011)	>= 4200 hrs
Maintainability					
Mean Time to Repair (MTTR)	<= 1 hr	<= 1 hr	<= 3 hrs	Ship: 1.18 hrs (10/15/2012) Shore: 1.25 hrs (11/14/2011) Sub: 4.3 hrs (11/14/2011)	<= 1 hr
Cost					
Ownership Cost	<= $298M	<= $298M	<= $328M	$257.0M	<= $298M
Survivability					
Survive an EMP (AEHF Only)	NMT AEHF/EHF functionality shall be capable of surviving indirect nuclear detonation EMP and thermal blast effects as defined in ELEX-S-488G and SR-3000 Appendix B-8.4	NMT AEHF/EHF functionality shall be capable of surviving indirect nuclear detonation EMP and thermal blast effects as defined in ELEX-S-488G and SR-3000 Appendix B-8.4	NMT AEHF/EHF functionality shall be capable of surviving indirect nuclear detonation EMP and thermal blast effects as defined in ELEX-S-488G and SR-3000 Appendix B-8.4	TBD	NMT AEHF/EHF functionality shall be capable of surviving indirect nuclear detonation EMP and thermal blast effects as defined in ELEX-S-488G and SR-3000 Appendix B-8.4
Electronic Jamming Protection (AEHF Only)					
Sub (Mast	The NMT	The NMT	The NMT	TBD	The NMT

Antenna) Sub (Periscope) Shore (10 Ft) Ship	shall protect against downlink electronic jamming to counter the specified threats in the 2006 Space Capstone Threat Assessment. Minimum Jammer-to-Terminal Separation: [See Classified CPD] nm with jammer at [See Classified CPD] nm altitude.	shall protect against downlink electronic jamming to counter the specified threats in the 2006 Space Capstone Threat Assessment. Minimum Jammer-to-Terminal Separation: [See Classified CPD] nm with jammer at [See Classified CPD] nm altitude.	shall protect against downlink electronic jamming to counter the specified threats in the 2006 Space Capstone Threat Assessment. Minimum Jammer-to-Terminal Separation: [See Classified CPD] nm with jammer at [See Classified CPD] nm altitude.		shall protect against downlink electronic jamming to counter the specified threats in the 2006 Space Capstone Threat Assessment. Minimum Jammer-to-Terminal Separation: [Classified] nm with jammer at [Classified] nm altitude.
Low Probability of Intercept (LPI) (AEHF Only)					
Sub (Mast)	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits.	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits.	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, MRCA Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits.	TBD	CEVR [Classified] nm, Data rate: [Classified] bps, Beams: MRCA/ HRCA, Message Size: [Classified] bits.
Sub (Periscope)	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beam: HGEC,	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beam: HGEC,	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beam: HGEC,	TBD	CEVR [Classified] nm, Data rate: [Classified] bps, Beam: HGEC, Message Size:

	Message Size: [See Classified CPD] Characters.	Message Size: [See Classified CPD] Characters.	Message Size: [See Classified CPD] Characters.		[Classified] Characters.
Ship	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits. CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits. CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.	CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits. CEVR [See Classified CPD] nm, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.	TBD	CEVR [Classified] nm, Data rate: [Classified] bps, Beams: MRCA/ HRCA, Message Size: [Classified] bits. CEVR [Classified] nm, Data rate: [Classified] bps, Beam: HGEC, Message Size: [Classified] TTY Characters.
NMT Multiband Terminal Operations	NMT shall provide AEHF/EHF capability with two-way military Ka-band (ship only), GBS (sub/ship) and X-band (ship /subs) simultan-eously. The NMT shall operate in the EHF/AEHF LDR, MDR,	NMT shall provide AEHF/EHF capability with two-way military Ka-band (ship only), GBS (sub/ship) and X-band (ship /subs) simultan-eously. The NMT shall operate in the EHF/AEHF LDR, MDR,	NMT shall provide AEHF/EHF capability with two-way military Ka-band (ship only), GBS (sub/ship) and X-band (ship/subs). The NMT shall operate in the EHF/AEHF LDR, MDR, and XDR communica-	TBD	NMT shall provide AEHF/EHF capability with two-way military Ka-band (ship only), GBS (sub/ship) and X-band (ship /subs) simultaneou-sly. The NMT shall operate in the EHF/AEHF LDR, MDR, and XDR

	and XDR communica-tion modes.	and XDR communica-tion modes.	tion modes.		communicat-ion modes.
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 transition to Net-Centric military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1 2) DISR mandated GIG KIPs identified in the KIP declaration table 3) NCOW RM Enterprise Services 4) Information assurance requirements resulting in issuance of an ATO by	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 transition to Net-Centric military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1 2) DISR mandated GIG KIPs identified in the KIP declaration table 3) NCOW RM Enterprise Services 4) Information assurance requirements resulting in issuance of an ATO by	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) DISR mandated GIG IT standards and profiles identified in the TV-1 2) DISR mandated GIG KIPs identified in the KIP declaration table 3) NCOW RM Enterprise Services 4) Information assurance requirements resulting in issuance of an ATO by the DAA,	Interoperabil-ity: NMT is capable of supporting operations in the joint operations environment. The NMT interfaced and operated with other communicat-ions systems over Milstar, WGS, and DSCS satellite systems. The NMTs conducted end-to-end communicat-ions with other NMTs and legacy EHF and SHF terminals. During testing and ongoing operations, the Navy sent a large number of e-mails through the Secure Internet Protocol Router Network (SIPRNET) as their preferred mode of	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 transition to Net-Centric military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1 2) DISR mandated GIG KIPs identified in the KIP declaration table 3) NCOW RM Enterprise Services 4) Information assurance requirements resulting in issuance of an ATO by

	the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	communicat-ions. Information Assurance: The Navy Information Operations Command performed information assurance testing during the integrated test period.	the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.

Requirements Source: Capability Production Document (CPD) dated November 18, 2008

Acronyms And Abbreviations

AEHF - Advanced Extremely High Frequency
ATO - Approval to Operate
bps - bits per second
CEVR - Circularly Equivalent Vulnerability Radius
CPD - Capability Production Document
DAA - Designated Approval Authority
deg - degree
DISR - DoD Information Standards Registry
DSCS - Defense Satellite Communication System
EHF - Extremely High Frequency
EMP - Electro Magnetic Pulse
ft - feet
GBS - Global Broadcast Service
GIG - Global Information Grid
HGEC - High Gain Earth Coverage
HRCA - High Resolution Coverage Area
hrs - hours
IT - Information Technology
KIP - Key Interface Profile
LDR - Low Data Rate
MDR - Medium Data Rate
MRCA - Medium Resolution Coverage Area
NCOW RM - Net-Centric Operational Warfare Reference Model
nm - nautical mile
NMT - Navy Multiband Terminal
SHF - Super High Frequency
sub - submarine
TBD - To Be Determined
TTY - Teletype
TV - Technical View
WGS - Wideband Global SATCOM
XDR - Extended Data Rate

Change Explanations

None

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

Memo

Note for Shore (for MTBF and MTBCF): Represents Initial Operational Test and Evaluation (IOT&E) and Verification of Correction of Deficiencies (VCD) testing results; mission impact deemed insignificant due to multiple terminals at Shore site.
Note for Sub (for MTBF, MTBCF and MTTR): Represents IOT&E hours; test duration limit for Submarines.

Track To Budget

RDT&E				
APPN 1319	BA 07	PE 0303109N	(Navy)	
	Project X0728	Navy Multiband Terminal	(Shared)	(Sunk)
	Project X9889	Navy Multiband Terminal	(Shared)	(Sunk)

Procurement				
APPN 1810	BA 02	PE 0303109N	(Navy)	
	ICN 321600	Navy Multiband Terminal		

Item Control Number (ICN) 9020 is a shared control number; therefore, it is not included in the NMT FY 2013 President's Budget baseline.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2002 $M			BY2002 $M	TY $M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	555.9	564.1	620.5	557.8	631.3	642.4	635.5
Procurement	962.0	964.3	1060.7	968.0	1221.7	1254.3	1267.4
Flyaway	962.0	--	--	968.0	1221.7	--	1267.4
Recurring	517.1	--	--	501.2	655.6	--	645.6
Non Recurring	444.9	--	--	466.8	566.1	--	621.8
Support	0.0	--	--	0.0	0.0	--	0.0
Other Support	0.0	--	--	0.0	0.0	--	0.0
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	1517.9	1528.4	N/A	1525.8	1853.0	1896.7	1902.9

Confidence Level for Current APB Cost 73% -
The NMT Cost Section is based on the Naval Center for Cost Analysis (NCCA) Service Cost Position (SCP) memo dated November 5, 2012 which was estimated at the Risk Adjusted Mean (RAM). Estimates for major NMT cost drivers included a high amount of variation using right skewed distributions which resulted in a confidence level of 73% at the risk adjusted mean.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	28	28	28
Procurement	276	250	250
Total	304	278	278

The inventory objective for NMT remains at 276 but due to overall Navy financial initiatives the platform quantity has been reduced to 250.

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	605.5	22.4	4.2	1.5	1.9	0.0	0.0	0.0	635.5
Procurement	280.4	184.8	216.0	278.1	128.8	57.1	58.0	64.2	1267.4
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 2014 Total	885.9	207.2	220.2	279.6	130.7	57.1	58.0	64.2	1902.9
PB 2013 Total	887.4	207.2	217.1	289.0	117.1	57.0	118.7	6.7	1900.2
Delta	-1.5	0.0	3.1	-9.4	13.6	0.1	-60.7	57.5	2.7

The Office of the Chief of Naval Operations (OPNAV) added Research, Development, Test, and Evaluation (RDT&E) funds based on an urgent Fleet need for NMT to operate in Anti-Access/Area Denial (A2AD) areas prior to review/approval by the Navy’s Configuration Steering Board (CSB). The $70.6M associated with this effort is not included in the Cost and Funding until the requirement is confirmed and approved by the Configuration Steering Board.

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
Development	28	0	0	0	0	0	0	0	0	28
Production	0	113	39	45	29	24	0	0	0	250
PB 2014 Total	28	113	39	45	29	24	0	0	0	278
PB 2013 Total	28	113	39	45	38	15	0	0	0	278
Delta	0	0	0	0	-9	9	0	0	0	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
2001	--	--	--	--	--	--	3.4
2002	--	--	--	--	--	--	6.6
2003	--	--	--	--	--	--	29.4
2004	--	--	--	--	--	--	64.1
2005	--	--	--	--	--	--	58.1
2006	--	--	--	--	--	--	55.4
2007	--	--	--	--	--	--	77.7
2008	--	--	--	--	--	--	87.7
2009	--	--	--	--	--	--	108.7
2010	--	--	--	--	--	--	78.8
2011	--	--	--	--	--	--	18.1
2012	--	--	--	--	--	--	17.5
2013	--	--	--	--	--	--	22.4
2014	--	--	--	--	--	--	4.2
2015	--	--	--	--	--	--	1.5
2016	--	--	--	--	--	--	1.9
Subtotal	**28**	**--**	**--**	**--**	**--**	**--**	**635.5**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2002 $M	Non End Item Recurring Flyaway BY 2002 $M	Non Recurring Flyaway BY 2002 $M	Total Flyaway BY 2002 $M	Total Support BY 2002 $M	Total Program BY 2002 $M
2001	--	--	--	--	--	--	3.4
2002	--	--	--	--	--	--	6.5
2003	--	--	--	--	--	--	28.8
2004	--	--	--	--	--	--	61.0
2005	--	--	--	--	--	--	53.9
2006	--	--	--	--	--	--	49.8
2007	--	--	--	--	--	--	68.2
2008	--	--	--	--	--	--	75.6
2009	--	--	--	--	--	--	92.5
2010	--	--	--	--	--	--	66.0
2011	--	--	--	--	--	--	14.8
2012	--	--	--	--	--	--	14.0
2013	--	--	--	--	--	--	17.6
2014	--	--	--	--	--	--	3.2
2015	--	--	--	--	--	--	1.1
2016	--	--	--	--	--	--	1.4
Subtotal	**28**	**--**	**--**	**--**	**--**	**--**	**557.8**

Annual Funding TY$
1810 | Procurement | Other 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
2010	33	52.9	--	8.7	61.6	--	61.6
2011	54	87.4	--	24.1	111.5	--	111.5
2012	26	56.7	--	50.6	107.3	--	107.3
2013	39	115.1	--	69.7	184.8	--	184.8
2014	45	125.5	--	90.5	216.0	--	216.0
2015	29	144.4	--	133.7	278.1	--	278.1
2016	24	63.6	--	65.2	128.8	--	128.8
2017	--	--	--	57.1	57.1	--	57.1
2018	--	--	--	58.0	58.0	--	58.0
2019	--	--	--	64.2	64.2	--	64.2
Subtotal	**250**	**645.6**	**--**	**621.8**	**1267.4**	**--**	**1267.4**

Annual Funding BY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2002 $M	Non End Item Recurring Flyaway BY 2002 $M	Non Recurring Flyaway BY 2002 $M	Total Flyaway BY 2002 $M	Total Support BY 2002 $M	Total Program BY 2002 $M
2010	33	43.6	--	7.2	50.8	--	50.8
2011	54	70.9	--	19.6	90.5	--	90.5
2012	26	45.1	--	40.3	85.4	--	85.4
2013	39	89.9	--	54.4	144.3	--	144.3
2014	45	96.2	--	69.3	165.5	--	165.5
2015	29	108.6	--	100.5	209.1	--	209.1
2016	24	46.9	--	48.1	95.0	--	95.0
2017	--	--	--	41.4	41.4	--	41.4
2018	--	--	--	41.2	41.2	--	41.2
2019	--	--	--	44.8	44.8	--	44.8
Subtotal	**250**	**501.2**	**--**	**466.8**	**968.0**	**--**	**968.0**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	7/21/2003	2/28/2012
Approved Quantity	90	113
Reference	Milestone B AS	Extended LRIP ADM
Start Year	2010	2010
End Year	2011	2012

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the strong technical performance of NMT during Operational Assessment.

The Total LRIP is also more than 10% in order to ensure a smooth and consistent establishment of production capacity, as well as to take advantage of the significant operational benefits from providing the NMT capability aligned with the satellites with which it will operate.

A Gate-6/Full-Rate Production Decision Review (FRP-DR) was conducted on November 8, 2012 and approved via an Acquisition Decision Memorandum (ADM) on November 30, 2012. This ADM authorized full production and installation for the NMT Program of Record and Other Customers.

Approved Quantity reflects the United States buy, and does not include Other Customer Funds (OCF) quantities.

Foreign Military Sales

The Navy has a current requirement for the development/procurement of 44 Navy Multiband Terminal (NMT) - International Partner Variant (IPV) terminals, to satisfy signed Foreign Military Sales (FMS) cases for Canada, The Netherlands and the United Kingdom.

Nuclear Cost

None

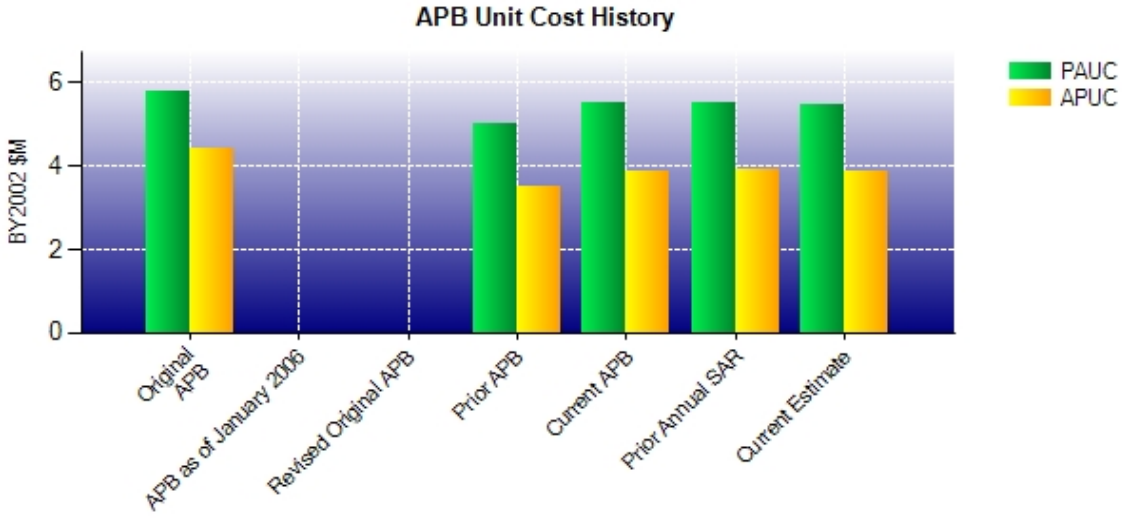
Unit Cost

Unit Cost Report

Unit Cost	BY2002 $M Current UCR Baseline (APR 2013 APB)	BY2002 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1528.4	1525.8	
Quantity	278	278	
Unit Cost	5.498	5.488	-0.18
Average Procurement Unit Cost (APUC)			
Cost	964.3	968.0	
Quantity	250	250	
Unit Cost	3.857	3.872	+0.39

Unit Cost	BY2002 $M Original UCR Baseline (DEC 2006 APB)	BY2002 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1923.4	1525.8	
Quantity	333	278	
Unit Cost	5.776	5.488	-4.99
Average Procurement Unit Cost (APUC)			
Cost	1345.6	968.0	
Quantity	305	250	
Unit Cost	4.412	3.872	-12.24

Unit Cost History



		BY2002 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	DEC 2006	5.776	4.412	6.970	5.544
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	OCT 2010	4.993	3.486	6.095	4.426
Current APB	APR 2013	5.498	3.857	6.823	5.017
Prior Annual SAR	DEC 2011	5.517	3.920	6.835	5.083
Current Estimate	DEC 2012	5.488	3.872	6.845	5.070

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	
6.970	0.082	0.637	0.034	0.000	-1.210	0.000	-0.418	-0.875	6.095

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
6.095	0.095	0.297	0.001	0.000	0.357	0.000	0.000	0.750	6.845

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	
5.544	0.047	0.553	0.038	0.000	-1.295	0.000	-0.461	-1.118	4.426

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
4.426	0.101	0.156	0.002	0.000	0.385	0.000	0.000	0.644	5.070

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	OCT 2003	OCT 2003	OCT 2003
Milestone C	N/A	FEB 2010	FEB 2010	AUG 2010
IOC	N/A	SEP 2012	SEP 2012	DEC 2012
Total Cost (TY $M)	N/A	2321.1	1853.0	1902.9
Total Quantity	N/A	333	304	278
Prog. Acq. Unit Cost (PAUC)	N/A	6.970	6.095	6.845

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	631.3	1221.7	--	1853.0
Previous Changes				
Economic	+0.6	+14.3	--	+14.9
Quantity	--	-76.3	--	-76.3
Schedule	--	-0.1	--	-0.1
Engineering	--	--	--	--
Estimating	-2.5	+111.2	--	+108.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-1.9	+49.1	--	+47.2
Current Changes				
Economic	+0.6	+11.0	--	+11.6
Quantity	--	--	--	--
Schedule	--	+0.5	--	+0.5
Engineering	--	--	--	--
Estimating	+5.5	-14.9	--	-9.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+6.1	-3.4	--	+2.7
Total Changes	+4.2	+45.7	--	+49.9
CE - Cost Variance	635.5	1267.4	--	1902.9
CE - Cost & Funding	635.5	1267.4	--	1902.9

Summary Base Year 2002 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	555.9	962.0	--	1517.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	-55.9	--	-55.9
Schedule	--	-0.7	--	-0.7
Engineering	--	--	--	--
Estimating	-2.1	+74.5	--	+72.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-2.1	+17.9	--	+15.8
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+4.0	-11.9	--	-7.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+4.0	-11.9	--	-7.9
Total Changes	+1.9	+6.0	--	+7.9
CE - Cost Variance	557.8	968.0	--	1525.8
CE - Cost & Funding	557.8	968.0	--	1525.8

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.6
Adjustment for current and prior escalation. (Estimating)	-0.5	-0.6
Revised estimate to reflect updated Naval Center for Cost Analysis (NCCA) Service Cost Position (SCP). (Estimating)	+4.5	+6.1
RDT&E Subtotal	+4.0	+6.1

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+11.0
Procurement buy profile shift of 9 units from FY 2015 to FY 2016 in an effort to sync with NMT funding profile. (Schedule)	0.0	+0.5
Adjustment for current and prior escalation. (Estimating)	-2.1	-2.7
Revised estimate to reflect updated NCCA SCP. (Estimating)	-9.8	-12.2
Procurement Subtotal	-11.9	-3.4

Contracts

Appropriation: Procurement	
Contract Name	**NMT Production & Deployment**
Contractor	Raytheon
Contractor Location	Marlboro, MA 01752
Contract Number, Type	N00039-04-C-0012/3, FFP
Award Date	September 07, 2010
Definitization Date	September 07, 2010

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
641.5	N/A	276	492.1	N/A	250	492.1	492.1

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 the potential reduction in inventory objective from 276 to 250 units. The official NMT inventory objective remains at 276 systems; however, in response to overall Navy financial initiatives, the Office of the Chief of Naval Operations (OPNAV) has identified potential changes. For example, the Naval Center for Cost Analysis (NCCA) utilized a total reduction of 26 systems in their most recent Cost Review Board (CRB), to reflect up to 16 afloat systems decommissioning, as well as a reduction of 10 ashore systems.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	28	28	28	100.00%
Production	80	80	250	32.00%
Total Program Quantities Delivered	108	108	278	38.85%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	1902.9	Years Appropriated	13
Expenditures To Date	781.4	Percent Years Appropriated	68.42%
Percent Expended	41.06%	Appropriated to Date	1093.1
Total Funding Years	19	Percent Appropriated	57.44%

The above data is current as of 3/31/2013.

Production Deliveries to Date reflect United States buys, and do not include Other Customer Funds (OCF) quantities.

Operating and Support Cost

NMT

Assumptions and Ground Rules

Cost Estimate Reference:

1. The total Operation and Support (O&S) costs represent the NMT November 2012 Naval Center for Cost Analysis (NCCA) Cost Estimate results.
2. NMT total Operations and Maintenance, Navy (O&MN) costs exclude Mission Personnel, or Unit Level Manpower. However, these costs are included in the Unit Level Manpower table below, and are reflective of the Manpower Estimate Report (MER) cost estimates that were included in the November 2012 NCCA Cost Estimate.

Sustainment Strategy:

1. O&S costs are the sum of all costs resulting from the operation, maintenance and support of NMT terminals after acceptance into the Navy Inventory.
2. Operating costs are the sum of the costs of operational personnel, facilities, and software maintenance.
3. Support costs include depot maintenance, sustaining support, In Service Engineering Activity (ISEA), demilitarization & disposal, program management, system engineering, system test & evaluation, and facilities costs.
4. The prime equipment inventory at Full Operational Capability (FOC) will consist of 131 Ships, 74 Submarines, 32 Shores, eight Trainers and five Test systems, based on the November 2012 NCCA Cost Estimate results.

Antecedent Information:

The Navy Extremely High Frequency (EHF) Satellite Program (NESP) and WSC-6 Super High Frequency (SHF) programs were established to satisfy an array of requirements and missions. Throughout the lifecycle of these systems, several of these requirements and missions were no longer needed. The NMT program will assume some of these requirements and missions, as well as, satisfy requirements and missions which neither the NESP nor WSC-6 were tasked. Due to this fractional overlap, it is undetermined what fraction of the NESP and WSC-6 program costs could truly be considered antecedent. This undetermined fractional overlap is also the reason the cost data was not readily available when the request came to list NESP, WSC-6, and any other antecedent program costs. Determining what fraction of the NESP and WSC-6 costs could be considered antecedent would take significant time and resources. Therefore, NESP and WSC-6 SHF are antecedent programs to NMT, but program costs are not readily available.

Unitized O&S Costs BY2002 $K		
Cost Element	**NMT Avg. Annual Cost Per System**	**No Antecedent (Antecedent) N/A**
Unit-Level Manpower	20.0	0.0
Unit Operations	0.0	0.0
Maintenance	0.6	0.0
Sustaining Support	13.1	0.0
Continuing System Improvements	0.0	0.0
Indirect Support	25.6	0.0
Other	0.0	0.0
Total	59.3	--

Unitized Cost Comments:

The unit of measure, excluding Unit-Level Manpower, is Total Base Year (BY) 2002 O&S dollars from FY 2013 to FY 2028, divided by the total years (16). These totals were further divided by the total number of NMT systems (250). Quantities and dollar values reflect the November 2012 NCCA Cost Estimate results.

	Total O&S Cost $M			
	Current Production APB Objective/Threshold		Current Estimate	
	NMT		NMT	No Antecedent (Antecedent)
Base Year	157.6	173.4	157.4	N/A
Then Year	223.5	N/A	223.1	N/A

Total O&S Costs Comments:

The O&S Cost variance from the previous SAR is the result of changes to the NMT Cost Estimate, which was revised in preparation for the November 2012 Full Rate Production Decision Review (FRP-DR), and resulted in an updated Service Cost Position (SCP). The revised estimate reduced Total O&S Costs from $176.7M, to $157.4M (BY 2002).

Disposal Costs

The Total NMT Disposal Costs are $0.2M in Base Year (BY) 2002 and $0.4M in Then Year (TY).