Selected Acquisition Report (SAR)

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

NMT

As of December 31, 2011

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

Navy Multiband Terminal (NMT)

DoD Component

Navy

Responsible Office

Responsible Office

Mr. Vince Squitieri
4301 Pacific Coast Highway
San Diego, CA 92110-3127

vincent.squitieri@navy.mil

Phone 619-524-7954
Fax 619-524-3501
DSN Phone 524-7954
DSN Fax --
Date Assigned June 17, 2009

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 October 4, 2010

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 to 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 and 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 Military Strategic and Tactical Relay (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

With the initiation of its Low Rate Initial Production (LRIP), the Navy Multiband Terminal (NMT) program began Production Year (PY)-1 procurements in the last quarter of FY 2010, with an authorization of 90 units (65 for the NMT program and 25 for other customers). On March 14, 2011, Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN (RD&A)) signed a revised Acquisition Decision Memorandum (ADM) authorizing NMT to procure an additional 42 units (22 units for NMT and 20 units for other customers). The program awarded contract modifications on March 31, April 7, May 19, and August 25, 2011, completing the PY-1 and PY-2 procurements, with 87 units for the Program of Record (POR) and 41 for other customers.

In addition, the NMT program completed Development Testing (DT) in July - August 2011 and conducted Initial Operational Test and Evaluation (IOT&E). As a result of the IOT&E, NMT was assessed as operationally effective, but not operationally suitable, by the Office of the Director, Operational Test and Evaluation (DOT&E) and the Navy's Commander Operational Test and Evaluation Force (COMOPTEVFOR). COMOPTEVFOR did, however, recommend Fleet introduction for the NMT system as a replacement for the legacy Q-band, Ka-band, and X-band systems. The NMT program has taken expedient action to address the deficiencies from IOT&E and, thus far, has significantly reduced programmatic and technical risk. Final closure of deficiency risks will be conducted with COMOPTEVFOR and DOT&E via a Verification of Correction of Deficiencies and is expected in the fourth quarter of FY 2012. NMT is seeking approval for FY 2012 procurements with a scheduled decision review in January 2012. The NMT program will schedule a Full-Rate Production Decision Review (FRP-DR) when supported by deficiency corrections to support FY 2013 and follow-on procurements.

The official NMT inventory objective remains at 276 systems. The President's Budget (PB) FY 2013 for NMT shows an inventory objective of 250 systems. The quantity decrease is from decommissioning 16 afloat systems and a reduction of 10 ashore systems. This results in a fact-of-life increase of 10.49% for the Program Acquisition Unit Cost (PAUC) and 12.45% for the Average Procurement Unit Cost (APUC), which is a cost deviation for both the PAUC and APUC.

Based on an urgent Fleet need for NMT to operate in Anti-Access/Area Denial (A2AD) areas, the Office of the Chief of Naval Operations (OPNAV) added funds in FY 2013, which are Research, Development, Test, and Evaluation (RDT&E) funds prior to review/approval by the Navy's Configuration Steering Board (CSB). The A2AD costs are not part of the NMT POR/Acquisition Program Baseline (APB) until review/approval by the CSB and completion of an Independent Cost Estimate (ICE).

The NMT program will continue to refine its Program Life Cycle Cost Estimate (PLCCE) and support a follow-up Service Cost Position (SCP) in preparation for an FRP-DR and then update the NMT APB as appropriate.

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

Threshold Breaches

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

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

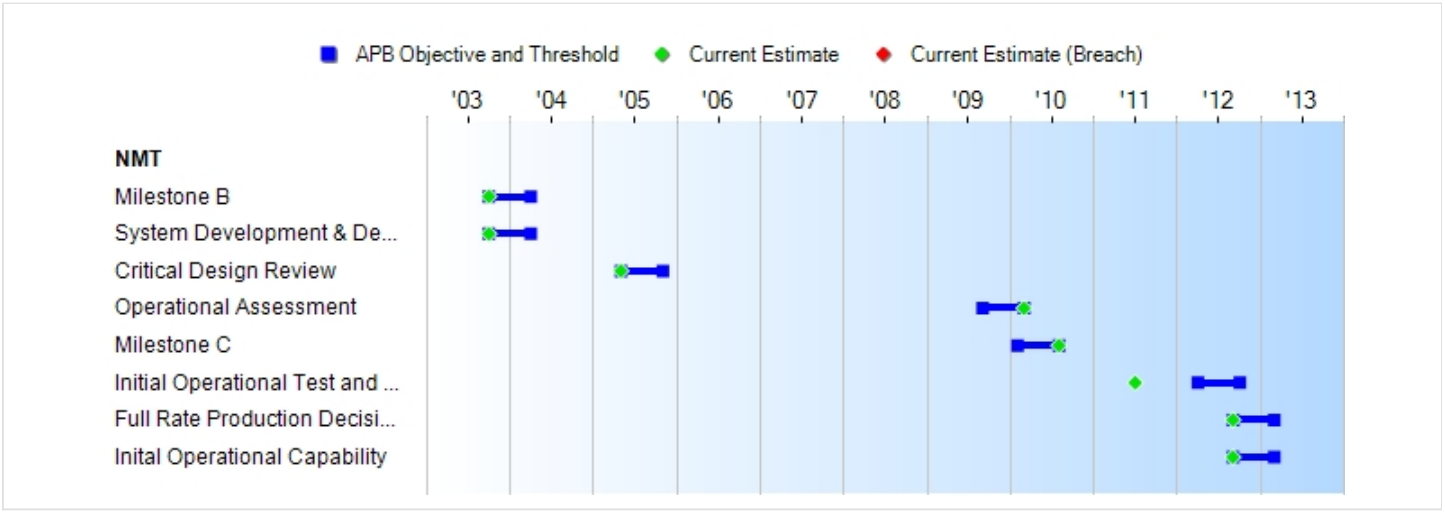
Explanation of Breach

The SAR indicates a cost deviation in the NMT Program Acquisition Unit Cost (PAUC) and Average Procurement Unit Cost (APUC).

The official NMT inventory objective remains at 276 systems. The FY 2013 President's Budget (PB) for NMT shows an inventory objective of 250 systems. The quantity decrease is from decommissioning 16 afloat systems and a reduction of 10 ashore systems. This results in a fact-of-life increase of 10.49% for the PAUC and 12.45% for the APUC, which is a cost deviation to the PAUC and APUC.

The NMT program will continue to refine its Program Life Cycle Cost Estimate (PLCCE) and support a follow-up Service Cost Position (SCP) in preparation for a Full Rate Production Decision Review and will then update the NMT Acquisition Program Baseline (APB) as appropriate.

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	(Ch-1)
Full Rate Production Decision Review	SEP 2012	SEP 2012	MAR 2013	SEP 2012	
Inital Operational Capability	SEP 2012	SEP 2012	MAR 2013	SEP 2012	

Change Explanations

(Ch-1) Initial Operational Test and Evaluation (Start) date changed from APR 2012 to JUL 2011 in order to provide the Fleet with the NMT capability sooner. Additionally, the necessary platforms were available for a single Operational Test.

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 0º 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 0º 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.	Demonstrated 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 0º 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 Between Failure (MTBF)	>= 2200 hrs	>= 2200 hrs	>= 1100 hrs	Sub: 68.3 hrs Ship: 62.9 hrs Shore: 270.9 hrs	>= 2200 hrs
Materiel	>= 4200 hrs	>= 4200 hrs	>= 1400 hrs	Sub: 204.8	>= 4200 hrs

Reliability - Mean Time Between Critical Failure (MTBCF)				hrs Ship: 146.7 hrs Shore: 270.9 hrs	
Maintainability					
Mean Time to Repair (MTTR)	<= 1 hr	<= 1 hr	<= 3 hrs	Sub: 4.3 hrs Ship: 32.7 hrs Shore: 2.3 hrs	<= 1 hr
Cost					
Ownership Cost	<= $298M	<= $298M	<= $328M	<=$298M	<= $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 Antenna) Sub (Periscope) Shore (10 Ft) Ship	The NMT 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	The NMT 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	The NMT 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	TBD	The NMT shall protect against downlink electronic jamming to counter the specified threats in the 2006 Space Capstone Threat Assessment. Minimum Jammer-to-Terminal Separation: [Classified] nautical mile

	CPD] nmi with jammer at [See Classified CPD] nmi altitude.	CPD] nmi with jammer at [See Classified CPD] nmi altitude.	CPD] nmi with jammer at [See Classified CPD] nmi altitude.		(nm) with jammer at [Classified] nm altitude.
Low Probability of Intercept (LPI) (AEHF Only)					
Sub (Mast)	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits.	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beams: MRCA/ HRCA, Message Size: [See Classified CPD] bits.	CEVR [See Classified CPD] nmi, 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] nmi, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] Characters.	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] Characters.	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] Characters.	TBD	CEVR [Classified] nm, Data rate: [Classified] bps, Beam: HGEC, Message Size: [Classified] Characters.
Ship	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beams: MRCA/HRC A, Message Size: [See Classified CPD] bits. CEVR [See Classified	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beams: MRCA/HRC A, Message Size: [See Classified CPD] bits. CEVR [See Classified	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beams: MRCA/HRC A, Message Size: [See Classified CPD] bits. CEVR [See Classified	TBD	CEVR [Classified] nm, Data rate: [Classified] bps, Beams: MRCA/HRC A, Message Size: [Classified] bits. CEVR [Classified] nm, Data rate: [Classified]

	CPD] nmi, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.	CPD] nmi, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.	CPD] nmi, Data rate: [See Classified CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.		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, and XDR communicat-ion modes.	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, and XDR communicat-ion modes.	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 communicat-ion modes.	TBD	NMT shall provide AEHF/EHF capability with two-way military Ka-band (ship only), GBS (sub/ship) and X-band (ship /subs) simultaneousl y. The NMT shall operate in the EHF/AEHF LDR, MDR, and XDR communicati on 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-	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-	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	Interoperabilit y: NMT is capable of supporting operations in the joint operations environment. The NMT interfaced and operated with other communicati ons systems over Milstar, WGS, and DSCS satellite systems. The NMTs	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	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	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	conducted end-to-end communications 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 communications. Information Assurance: The Navy Information Operations Command performed information assurance testing during the integrated test period.	Centric military operations to include: 1) DISR mandated GIG IT standards and profiles identified in the TV-1 2) DISR mandated Global Information Grid (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

	architecture views.	architecture views.	views.		joint and system integrated architecture views.

Requirements Source: NMT Capability Production Document (CPD) approved November 18, 2008 via Joint Requirements Oversight Council Memorandum (JROCM) 221-08

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
DoD - Department of Defense
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
KPP - Key Performance Parameter
lat - Latitude
LDR - Low Data Rate
MDR - Medium Data Rate
MRCA - Medium Resolution Coverage Area
MTBCF - Mean Time Between Critical Failure
MTBF - Mean Time Between Failure
MTTR - Mean Time To Repair
N - North
NCOW RM - Net-Centric Operational Warfare Reference Model
nm - nautical mile
NMT - Navy Multiband Terminal
S - South
sub - submarine
TBD - To Be Determined
TTY - Teletype
TV - Technical View
XDR - Expanded Data Rate

Change Explanations

None

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

Track To Budget

RDT&E

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

$78M (TY) dollars are not shown for Adaptive Coding (AC) and Anti-Access/Area Denial (A2AD) until the requirement is confirmed and approved by the Configuration Steering Board.

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

	BY2002 $M			BY2002 $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	555.9	555.9	611.5	553.8	631.3	631.3	629.4
Procurement	962.0	962.0	1058.2	979.9	1221.7	1221.7	1270.8
Flyaway	962.0	--	--	979.9	1221.7	--	1270.8
Recurring	517.1	--	--	503.3	655.6	--	643.0
Non Recurring	444.9	--	--	476.6	566.1	--	627.8
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	1517.9	N/A	1533.7	1853.0	1853.0	1900.2

Confidence Level For the Current APB Cost 52%.

Based on the Service Cost Position (SCP) established and approved by the Naval Center for Cost Analysis (NCCA) in July 2010, the program is estimated at the risk adjusted mean of approximately 52% and is low risk largely due to the existing Firm Fixed Price (FFP) production contract.

The Office of the Chief of Naval Operations (OPNAV) added funds based on an urgent Fleet need for NMT to operate in Anti-Access/Area Denial (A2AD) areas, which are Research, Development, Test, and Evaluation (RDT&E) funds prior to review/approval by the Navy's Configuration Steering Board (CSB). The $78M dollars associated with this effort are not shown until the requirement is confirmed and approved by the Configuration Steering Board.

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

Cost and Funding

Funding Summary

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

Appropriation	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
RDT&E	588.2	18.8	22.4	0.0	0.0	0.0	0.0	0.0	629.4
Procurement	173.1	107.3	184.8	217.1	289.0	117.1	57.0	125.4	1270.8
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2013 Total	761.3	126.1	207.2	217.1	289.0	117.1	57.0	125.4	1900.2
PB 2012 Total	806.9	127.8	198.1	185.0	232.2	162.3	156.2	44.1	1912.6
Delta	-45.6	-1.7	9.1	32.1	56.8	-45.2	-99.2	81.3	-12.4

Quantity	Undistributed	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
Development	28	0	0	0	0	0	0	0	0	28
Production	0	87	26	39	45	38	15	0	0	250
PB 2013 Total	28	87	26	39	45	38	15	0	0	278
PB 2012 Total	28	87	26	32	39	39	26	27	0	304
Delta	0	0	0	7	6	-1	-11	-27	0	-26

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	--	--	--	--	--	--	108.8
2010	--	--	--	--	--	--	79.0
2011	--	--	--	--	--	--	18.0
2012	--	--	--	--	--	--	18.8
2013	--	--	--	--	--	--	22.4
Subtotal	**28**	**--**	**--**	**--**	**--**	**--**	**629.4**

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	--	--	--	--	--	--	92.6
2010	--	--	--	--	--	--	66.2
2011	--	--	--	--	--	--	14.8
2012	--	--	--	--	--	--	15.2
2013	--	--	--	--	--	--	17.8
Subtotal	**28**	**--**	**--**	**--**	**--**	**--**	**553.8**

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	--	91.6	217.1	--	217.1
2015	38	154.5	--	134.5	289.0	--	289.0
2016	15	50.9	--	66.2	117.1	--	117.1
2017	--	--	--	57.0	57.0	--	57.0
2018	--	--	--	118.7	118.7	--	118.7
2019	--	--	--	4.4	4.4	--	4.4
2020	--	--	--	2.3	2.3	--	2.3
Subtotal	**250**	**643.0**	**--**	**627.8**	**1270.8**	**--**	**1270.8**

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	43.9	--	7.2	51.1	--	51.1
2011	54	71.1	--	19.7	90.8	--	90.8
2012	26	45.4	--	40.4	85.8	--	85.8
2013	39	90.6	--	54.8	145.4	--	145.4
2014	45	97.0	--	70.9	167.9	--	167.9
2015	38	117.3	--	102.2	219.5	--	219.5
2016	15	38.0	--	49.4	87.4	--	87.4
2017	--	--	--	41.8	41.8	--	41.8
2018	--	--	--	85.5	85.5	--	85.5
2019	--	--	--	3.1	3.1	--	3.1
2020	--	--	--	1.6	1.6	--	1.6
Subtotal	**250**	**503.3**	**--**	**476.6**	**979.9**	**--**	**979.9**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	7/21/2003	3/14/2011
Approved Quantity	90	132
Reference	Milestone B AS	Milestone C ADM
Start Year	2010	2010
End Year	2011	2011

The current total Low Rate Initial Production (LRIP) quantity is more than 10% of the total production quantity due to the strong technical performance of NMT during Operational Assessment, the necessity to ensure a smooth and consistent establishment of production capacity, and significant operational benefits from providing the NMT capability aligned with the satellites with which it will operate.

An LRIP decision quantity of 90 units was identified in the NMT Acquisition Strategy (AS) that was prepared for Milestone B and signed on July 21, 2003 by Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN(RD&A)). Milestone B was approved by ASN (RD&A) on October 21, 2003.

ASN (RD&A) approved a Milestone C LRIP quantity of 90 units in the Acquisition Decision Memorandum (ADM) on August 25, 2010, which was later modified on March 14, 2011 to authorize a total of 132 LRIP units (87 for the NMT program and 45 for other customers). ASN (RD&A) authorized this additional quantity to maintain a desirable and orderly production rate for FY 2012 and to avoid a break in production between LRIP and Full Rate Production (FRP). With respect to the other customers, this increase allowed execution of their acquisition programs without impairment from NMT. Lastly, for all NMT users, this increase facilitated significant cost efficiencies.

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

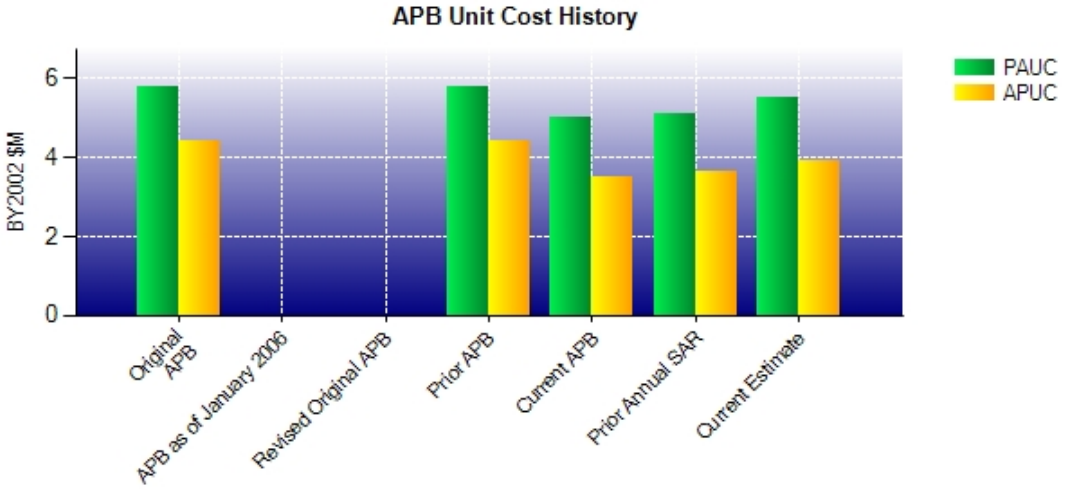
Unit Cost

Unit Cost Report

Unit Cost	BY2002 $M Current UCR Baseline (OCT 2010 APB)	BY2002 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1517.9	1533.7	
Quantity	304	278	
Unit Cost	4.993	5.517	+10.49
Average Procurement Unit Cost (APUC)			
Cost	962.0	979.9	
Quantity	276	250	
Unit Cost	3.486	3.920	+12.45

Unit Cost	BY2002 $M Original UCR Baseline (DEC 2006 APB)	BY2002 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1923.4	1533.7	
Quantity	333	278	
Unit Cost	5.776	5.517	-4.48
Average Procurement Unit Cost (APUC)			
Cost	1345.6	979.9	
Quantity	305	250	
Unit Cost	4.412	3.920	-11.15

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	DEC 2006	5.776	4.412	6.970	5.544
Current APB	OCT 2010	4.993	3.486	6.095	4.426
Prior Annual SAR	DEC 2010	5.127	3.646	6.291	4.661
Current Estimate	DEC 2011	5.517	3.920	6.835	5.083

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	0.054	0.295	0.000	0.000	0.391	0.000	0.000	0.740	6.835

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	0.057	0.155	0.000	0.000	0.445	0.000	0.000	0.657	5.083

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	SEP 2012
Total Cost (TY $M)	N/A	2321.1	1853.0	1900.2
Total Quantity	N/A	333	304	278
Prog. Acq. Unit Cost (PAUC)	N/A	6.970	6.095	6.835

Cost Variance

Cost Variance Summary

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	631.3	1221.7	--	1853.0
Previous Changes				
Economic	-0.5	-2.2	--	-2.7
Quantity	--	--	--	--
Schedule	--	+3.2	--	+3.2
Engineering	--	--	--	--
Estimating	-4.5	+63.6	--	+59.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-5.0	+64.6	--	+59.6
Current Changes				
Economic	+1.1	+16.5	--	+17.6
Quantity	--	-76.3	--	-76.3
Schedule	--	-3.3	--	-3.3
Engineering	--	--	--	--
Estimating	+2.0	+47.6	--	+49.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+3.1	-15.5	--	-12.4
Total Changes	-1.9	+49.1	--	+47.2
CE - Cost Variance	629.4	1270.8	--	1900.2
CE - Cost & Funding	629.4	1270.8	--	1900.2

Summary Base Year 2002 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	555.9	962.0	--	1517.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-3.8	+44.4	--	+40.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-3.8	+44.4	--	+40.6
Current Changes				
Economic	--	--	--	--
Quantity	--	-55.9	--	-55.9
Schedule	--	-0.7	--	-0.7
Engineering	--	--	--	--
Estimating	+1.7	+30.1	--	+31.8
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1.7	-26.5	--	-24.8
Total Changes	-2.1	+17.9	--	+15.8
CE - Cost Variance	553.8	979.9	--	1533.7
CE - Cost & Funding	553.8	979.9	--	1533.7

Previous Estimate: December 2010

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+1.1
Adjustment for current and prior escalation. (Estimating)	-0.8	-0.9
Decrease due to budget adjustments. (Estimating)	-0.9	-1.0
Increase of funding affected actuals. (Estimating)	+3.4	+3.9
RDT&E Subtotal	+1.7	+3.1

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+16.5
Total Quantity variance resulting from a decrease of 26 systems from 276 to 250. (Subtotal)	-71.2	-97.1
Quantity variance resulting from a decrease of 26 systems from 276 to 250. (Quantity)	(-55.9)	(-76.3)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(-0.7)	(-1.0)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-14.6)	(-19.8)
Acceleration of procurement buy profile in FY 2013 and FY 2014 to provide the Fleet with NMT capability and to utilize contract discounts. (Schedule)	0.0	-2.3
Adjustment for current and prior escalation. (Estimating)	-2.6	-3.3
Increase due to budget adjustments (e.g. for procurement acceleration). (Estimating)	+5.4	+7.1
Results from a formal Naval Center for Cost Analysis (NCCA) Cost Review Board (CRB). (Estimating)	+41.9	+63.6
Procurement Subtotal	-26.5	-15.5

(QR) Quantity Related

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 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 to the NMT inventory objective. 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	2	2	250	0.80%
Total Program Quantities Delivered	30	30	278	10.79%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	1900.2	Years Appropriated	12
Expenditures To Date	761.3	Percent Years Appropriated	60.00%
Percent Expended	40.06%	Appropriated to Date	887.4
Total Funding Years	20	Percent Appropriated	46.70%

Operating and Support Cost

Assumptions And Ground Rules

1. Operation and Support (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 total O&S costs represent the NMT JAN 2012 Naval Center for Cost Analysis (NCCA) Cost Estimate results.
5. 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 JAN 2012 NCCA Cost Estimate results.
6. 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 as well as the JAN 2012 NCCA Cost Estimate.

The unit of measure, excluding Unit-Level Manpower, is Total Base Year (BY) 2002 O&S dollars from FY 2011 to FY 2028, divided by the total years (18). Unit-Level Manpower represents BY 2002 O&S dollars from FY 2012 to FY 2028 divided by the total number of years (17). These totals were further divided by the total number of NMT systems (250). Quantities and dollar values reflect the JAN 2012 NCCA Cost Estimate results.

The NMT program will continue to refine its Program Life Cycle Cost Estimate (PLCCE) and support a Service Cost Position (SCP) in preparation for a Full Rate Production Decision Review (FRP DR) (estimated to occur in the fourth quarter of FY 2012) and then will update the NMT Acquisition Program Baseline (APB) accordingly.

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.

Costs BY2002 $K		
Cost Element	**NMT Avg. Annual Cost Per System**	**No Antecedent N/A**
Unit-Level Manpower	14.7	--
Unit Operations	--	--
Maintenance	0.7	--
Sustaining Support	14.2	--
Continuing System Improvements	--	--
Indirect Support	24.4	--
Other	--	--
Total Unitized Cost (Base Year 2002 $)	54.0	--

Total O&S Costs $M	NMT	No Antecedent
Base Year	176.7	--
Then Year	257.0	--