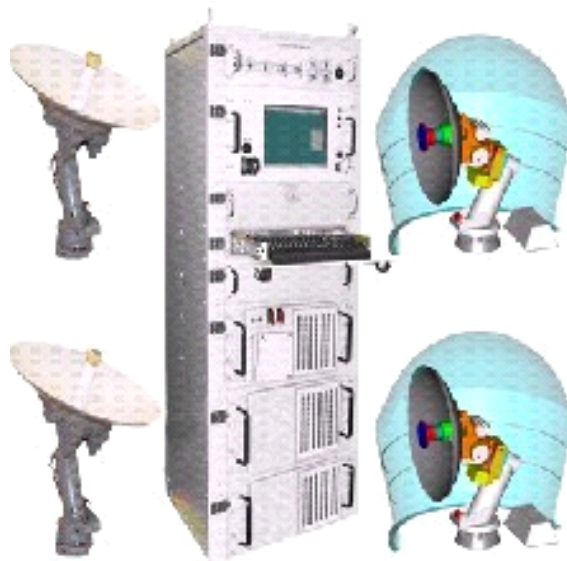




Selected Acquisition Report (SAR)

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



NMT

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

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Program Information

Designation And Nomenclature (Popular Name)

Navy Multiband Terminal

DoD Component

Navy

Responsible Office

Responsible Office

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DSN Fax --
Date Assigned June 17, 2009

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References

SAR Baseline (Development Estimate)

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated December 07, 2006

Approved APB

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 SATCOM (WGS) and shipboard and submarine terminals to communicate with X-Band using the Defense Satellite Communications System (DSCS) and WGS. NMT is compatible with today's Navy Low Data Rate/Medium Data Rate (LDR/MDR) terminals, X-Band terminals 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 (ORDs) 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. The NMT Program consists of competitive prototype development, Engineering Development Model (EDM) development and environmental qualification, on-orbit testing, platform integration and test, software enhancements and regression testing throughout the life of the program. NMT will be a FORCEnet enabler by providing critical bandwidth for war fighter information services.

Executive Summary

On July 29, 2010 the NMT program conducted a successful Gate 6 / Milestone C Review that resulted in approval to procure 90 Low Rate Initial Production (LRIP) systems. Subsequently, the NMT program exercised options for the Production Year (PY) 1 buy of the first approved LRIP procurement of 33 NMT units and 24 Other Customer Funded (OCF) units in September 2010 and is currently authorized for an additional 32 NMT-funded systems and one additional OCF system to be procured in 2nd Quarter FY 2011. The successful Milestone C Review and PY1 buy were supported by the NMT program's successful completion of the Service Cost Position (SCP) cycle with the Naval Center for Cost Analysis (NCCA) and of both Development Testing (DT) and Operational Assessment (OA). Since the last report, the program also received Approval To Connect (ATC) from Air Force Space Command, allowing NMT to be fully used with Military Strategic and Tactical Relay (MILSTAR) for operations. In addition, to support the Milestone C, the program received approval for its updated Acquisition Strategy (AS), Clinger-Cohen Act (CCA) compliance and the Technology Readiness Assessment (TRA) approval for level 7. Lastly the program's Acquisition Program Baseline (APB) was approved by Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN (RDA)). The NMT program continues moving forward toward its next milestone, a Full Rate Production Decision Review (FRP-DR) targeted for November 2012.

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

Threshold Breaches

APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

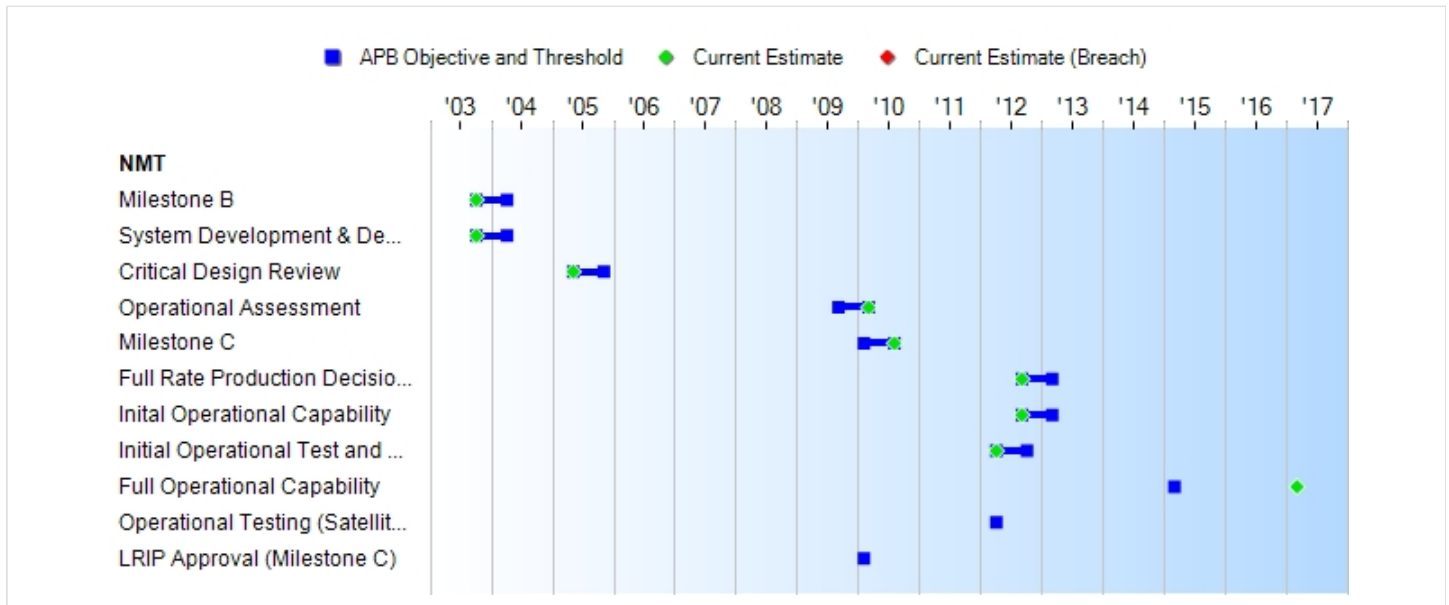
Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

Schedule



Milestones	SAR Baseline Dev Est	Current APB 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	N/A	FEB 2010	AUG 2010	AUG 2010	(Ch-1)
Full Rate Production Decision Review	SEP 2012	SEP 2012	MAR 2013	SEP 2012	(Ch-1)
Initial Operational Capability	SEP 2012	SEP 2012	MAR 2013	SEP 2012	
Initial Operational Test and Evaluation (Start)	N/A	APR 2012	OCT 2012	APR 2012	(Ch-1)
Full Operational Capability	MAR 2015	N/A	N/A	MAR 2017	(Ch-2)
Operational Testing (Satellite Dependent)	APR 2012	N/A	N/A	N/A	(Ch-1)
LRIP Approval (Milestone C)	FEB 2010	N/A	N/A	N/A	(Ch-1)

Acronyms And Abbreviations

LRIP - Low Rate Initial Production

Change Explanations

(Ch-1) The following Milestones were updated to align with the current approved Milestone (MS) C Acquisition Program Baseline (APB):

- Milestone C date changed from JUL 2010 to AUG 2010 to reflect approved Milestone Decision date

- Full Rate Production Decision Review date changed from JAN 2012 to SEP 2012
- Initial Operational Test and Evaluation is projected to start in APR 2012
- Operational Testing (Satellite Dependent) was replaced with Initial Operational Test & Evaluation
- Replaced 'LRIP Approval (Milestone C)' with 'Milestone C' to comply with standard naming convention

(Ch-2) Full Operational Capability (FOC) milestone date adjusted to match approved NMT Capability Production Document (CPD)

Performance

Characteristics	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate	
NMT Antenna Control Coverage	N/A	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° 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.	TBD	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° relative to the horizon.	(Ch-1)
Sustainment						(Ch-1)
Materiel Availability	N/A	>= 0.95	>= 0.75	TBD	>= 0.95	(Ch-1)
Operational Availability (Ao)	N/A	>0.999 (sub) > 0.999 (ship/shore)	> 0.940 (sub) > 0.900 (ship/shore)	TBD	>0.999 (sub) > 0.999 (ship/shore)	(Ch-1)
Reliability						(Ch-1)
Materiel Reliability – Mean Time Between Failure (MTBF)	N/A	>= 2200 hrs	>= 1100 hrs	TBD	>= 2200 hrs	(Ch-1)
Materiel Reliability - Mean Time	N/A	>= 4200 hrs	>= 1400 hrs	TBD	>= 4200 hrs	(Ch-1)

Between Critical Failure (MTBCF)						
Maintainability						(Ch-1)
Mean Time to Repair (MTTR)	N/A	<= 1 hr	<= 3 hrs	TBD	<= 1 hr	(Ch-1)
Cost						(Ch-1)
Ownership Cost	N/A	<= \$298M	<= \$328M	TBD	<= \$298M	(Ch-1)
Survivability						(Ch-1)
Survive an EMP (AEHF Only)	N/A	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	(Ch-1)
Electronic Jamming Protection (AEHF Only)						(Ch-1)
Sub (Mast Antenna) Sub (Periscope) Shore (10 Ft) Ship	N/A	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 CPD] nmi with jammer at [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 CPD] nmi with jammer at [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 (nmi) with jammer at [Classified] nmi altitude.	(Ch-1)

		CPD] nmi altitude.	CPD] nmi altitude.			
Low Probability of Intercept (LPI) (AEHF Only)						(Ch-1)
Sub (Mast)	N/A	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.	TBD	CEVR [Classified] nmi, Data rate: [Classified] bps, Beams: MRCA/ HRCA, Message Size: [Classified] bits.	(Ch-1)
Sub (Periscope)	N/A	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] nmi, Data rate: [Classified] bps, Beam: HGEC, Message Size: [Classified] Characters.	(Ch-1)
Ship	N/A	CEVR [See Classified CPD] nmi, Data rate: [See Classified CPD] bps, Beams: MRCA/HRC A, Message Size: [See Classified CPD] bits. CEVR [See Classified CPD] nmi, Data rate: [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 CPD] nmi, Data rate: [See Classified	TBD	CEVR [Classified] nmi, Data rate: [Classified] bps, Beams: MRCA/HRC A, Message Size: [Classified] bits. CEVR [Classified] nmi, Data rate: [Classified] bps, Beam: HGEC, Message Size:	(Ch-1)

		CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.	CPD] bps, Beam: HGEC, Message Size: [See Classified CPD] TTY Characters.		[Classified] TTY Characters.	
NMT Multiband Terminal Operations	N/A	NMT shall provide AEHF/EHF capability with two-way military Ka-band (ship only), GBS (sub/ship) and X-band (ship /subs) simultaneously. The NMT shall operate in the EHF/AEHF LDR, MDR, and XDR communication 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 communication modes.	TBD	NMT shall provide AEHF/EHF capability with two-way military Ka-band (ship only), GBS (sub/ship) and X-band (ship /subs) simultaneously. The NMT shall operate in the EHF/AEHF LDR, MDR, and XDR communication modes.	(Ch-1)
Net-Ready	N/A	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)	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	TBD	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)	(Ch-1)

		<p>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.</p>	<p>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.</p>		<p>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 joint and system integrated architecture</p>
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					views.	
Coverage AEHF	Provide Global coverage	N/A	N/A	TBD	N/A	(Ch-1)
Coverage WGS	Capable of providing communications connectivity anywhere between 70 deg N and 65 deg S lat w/i the satellites field of view, 24 hrs per day	N/A	N/A	TBD	N/A	(Ch-1)
Capacity AEHF	Shall support at least 1.2 Gbps for the CMTW Scenario; at least 600 Mbps for the Strategic Scenario	N/A	N/A	TBD	N/A	(Ch-1)
Capacity WGS	Min of 3.6 Gbps	N/A	N/A	TBD	N/A	(Ch-1)
Protection AEHF - Electronic Jamming	Support tactical and strategic forces to counter the medium probability threat in the 2000 MILSAT-COM STAR	N/A	N/A	TBD	N/A	(Ch-1)
Protection AEHF - Nuclear	Provide assured communications to survivable nuclear forces exposed to the environment specified in the NCGS89-06 and for	N/A	N/A	TBD	N/A	(Ch-1)

	those critical networks that support situation monitoring, decision making, force direction, force management and planning					
Access and Control AEHF	Provide users the ability to plan, control, and reconfigure critical functions such as situation monitoring, decision making, force direction, force management and planning; capabilities shall not be disrupted by communications configuration changes to noncritical functions; as a minimum, threshold requirements in Par. 4.2.4.1. 3.1, 4.2.4.2. 3, and 4.2.4.6 (subpar. 1-4) shall be accomplished to support these functions.	N/A	N/A	TBD	N/A	(Ch-1)

	The KPP objective criterion is accomplishment of objective requirements in these paragraphs.					
Access and Control WGS	Platform and Payload control capabilities to perform launch and early orbit, on-orbit operations, station-keeping, satellite repositioning, platform and payload maintenance, anomaly identification and resolution	N/A	N/A	TBD	N/A	(Ch-1)
Interoperability AEHF	The AEHF system shall support joint interoperable war-fighter communications among all military Services EHF terminals up to their max data rate (Threshold). The System shall operate with the Milstar system at all LDR and MDR terminal supported data rates and selected	N/A	N/A	TBD	N/A	(Ch-1)

	modes (Threshold). The AEHF System shall support the critical IERs in Table 4-19 (Threshold) and all IERs in Table 4-19 (Objective).					
Interoperability WGS	Satellites fully interoperable with existing and programmed DSCS and GBS terminals	N/A	N/A	TBD	N/A	(Ch-1)
Coverage	Terminals capable of pointing and tracking satellites with elevation angles of 10 deg (20 deg for mast) above the horizon and 360 deg in azimuth with full platform motion	N/A	N/A	TBD	N/A	(Ch-1)
Capacity	Terminal numbers assume the satellite meets its performance requirements contained in the AEHF Technical Requirements Document Revision 10	N/A	N/A	TBD	N/A	(Ch-1)
AEHF Terminal						(Ch-1)

Throughput						
Ship	2 Mbps	N/A	N/A	TBD	N/A	(Ch-1)
Shore	8 Mbps	N/A	N/A	TBD	N/A	(Ch-1)
Submarine Periscope	19.2 Kbps	N/A	N/A	TBD	N/A	(Ch-1)
Submarine Mast	512 Kbps	N/A	N/A	TBD	N/A	(Ch-1)
Ka Throughput						(Ch-1)
Ship	8 Mbps	N/A	N/A	TBD	N/A	(Ch-1)
Access and Control	Functions shall include aspects of control required to gain access to satellite communications resources, initiate, maintain, modify, and terminate services; shall include the following access control protocols/ messages, which are identified in SI-3135 Appendix A and B: - Terminal LOGON - Terminal LOG-OFF - Antenna Point	N/A	N/A	TBD	N/A	(Ch-1)
Interoperability	Assuming interoperable cryptographic equipment, keying material, and baseband devices, the NMT shall support joint interoperable war-fighter communicat-	N/A	N/A	TBD	N/A	(Ch-1)

	ions with all other military branches EHF terminals up to the terminal's max data rate					
Backward Compatible (BC) w/ Existing EHF Systems	NMT shall be backwards-compatible with legacy Navy AN/USC-38 (V)1 -12EHF terminals; in the most robust LDR mode (7.5 bps) and least robust LDR mode (2.4 kbps), the ship NMT shall operate with a legacy NESP ship terminal maintaining a bit error rate of 10E-5 or less; in the most robust MDR mode (4.8 kbps) and least robust MDR mode (512 kbps), the ship NMT shall operate with a legacy NESP ship terminal maintaining a bit error rate of 10E-5 or less	N/A	N/A	TBD	N/A	(Ch-1)
Reliability AEHF						(Ch-1)
MTBF	4400 hrs	N/A	N/A	TBD	N/A	(Ch-1)

MTTR	4 hrs	N/A	N/A	TBD	N/A	(Ch-1)
Availability AEHF						(Ch-1)
Ai for Ship	0.999	N/A	N/A	TBD	N/A	(Ch-1)
Ai for Shore	0.999	N/A	N/A	TBD	N/A	(Ch-1)
Ai for Submarine	0.999	N/A	N/A	TBD	N/A	(Ch-1)
Ao for Ship	0.999	N/A	N/A	TBD	N/A	(Ch-1)
Ao for Shore	0.999	N/A	N/A	TBD	N/A	(Ch-1)
Ao for Submarine	0.999	N/A	N/A	TBD	N/A	(Ch-1)
Effective Isotropic Radiated Power (EIRP)						(Ch-1)
Ka Ship	67.0 dBW	N/A	N/A	TBD	N/A	(Ch-1)
Gain/Noise Temperature (G/T)						(Ch-1)
Ka Ship	21 dB/K	N/A	N/A	TBD	N/A	(Ch-1)
High Altitude Electromagnetic Pulse (HEMP) Protection						(Ch-1)
AEHF- All Platforms	Survive HEMP in accordance with DoD-STD-2169B	N/A	N/A	TBD	N/A	(Ch-1)

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

Acronyms And Abbreviations

AEHF - Advanced Extremely High Frequency
ATO - Approval to Operate
bps - bits per second
CEVR - Circularly Equivalent Vulnerability Radius
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
nmi - nautical mile
NMT - Navy Multiband Terminal
S - South
TTY - Teletype
TV - Technical View
XDR - Expanded Data Rate

Change Explanations

(Ch-0) Space segment KPPs that were included in the previous Acquisition Program Baseline (APB) are not applicable to the Terminal and have been removed. Changes in Objective and Threshold parameters reflected in the CPD and this APB generally detail expected minor increases in performance.

Submarine Operational Availability (Ao) pertains to the NMT Communication Group (CG) only with the higher Ao assigned. For NMT, existing submarine Antenna Group (AG) including Mast Group (MG) and Periscope AG, are covered under SUB ORD Ser #553-87-00.

The NMT must support Net-Centric military operations. The system must be able to enter and be managed in the network, and exchange data in a secure manner to enhance mission effectiveness. The system must provide survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military capability.

(Ch-1) Key Performance Parameters (KPPs) have been updated to reflect NMT's approved Milestone (MS) C Acquisition Program Baseline (APB). KPPs were updated in the MS C APB to reflect the Terminal's KPPs as they are detailed in the approved NMT Capability Production Document (CPD) (JROCM 221-08 of 11/18/2008). NMT KPPs reported in prior Selected Acquisition Reports (SARs) were previously only reported in the classified annex.

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	

Procurement

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

Inventory Control Number (ICN) 9020 is a shared control number; therefore it is not included in the NMT PB12 budget baseline.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2002 \$M			BY2002 \$M	TY \$M		
	SAR Baseline Dev Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Production Objective	Current Estimate
RDT&E	577.8	555.9	611.5	552.1	630.2	631.3	626.3
Procurement	1345.6	962.0	1058.2	1006.4	1690.9	1221.7	1286.3
Flyaway	1244.6	--	--	1006.4	1565.1	--	1286.3
Recurring	759.0	--	--	607.2	944.6	--	773.6
Non Recurring	485.6	--	--	399.2	620.5	--	512.7
Support	101.0	--	--	0.0	125.8	--	0.0
Other Support	63.8	--	--	0.0	79.4	--	0.0
Initial Spares	37.2	--	--	0.0	46.4	--	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	1923.4	1517.9	N/A	1558.5	2321.1	1853.0	1912.6

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

Quantity	SAR Baseline Dev Est	Current APB Production	Current Estimate
RDT&E	28	28	28
Procurement	305	276	276
Total	333	304	304

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	568.2	16.1	18.8	22.9	0.1	0.2	0.0	0.0	626.3
Procurement	61.6	161.0	109.0	175.2	184.9	232.0	162.3	200.3	1286.3
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	629.8	177.1	127.8	198.1	185.0	232.2	162.3	200.3	1912.6
PB 2011 Total	635.3	177.2	216.4	229.0	260.5	278.9	193.7	79.4	2070.4
Delta	-5.5	-0.1	-88.6	-30.9	-75.5	-46.7	-31.4	120.9	-157.8

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	28	0	0	0	0	0	0	0	0	28
Production	0	33	54	26	32	39	39	26	27	276
PB 2012 Total	28	33	54	26	32	39	39	26	27	304
PB 2011 Total	28	28	36	48	40	52	37	35	0	304
Delta	0	5	18	-22	-8	-13	2	-9	27	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	--	--	--	--	--	--	53.5
2007	--	--	--	--	--	--	77.7
2008	--	--	--	--	--	--	87.7
2009	--	--	--	--	--	--	108.7
2010	--	--	--	--	--	--	79.0
2011	--	--	--	--	--	--	16.1
2012	--	--	--	--	--	--	18.8
2013	--	--	--	--	--	--	22.9
2014	--	--	--	--	--	--	0.1
2015	--	--	--	--	--	--	0.2
Subtotal	28	--	--	--	--	--	626.3

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	--	--	--	--	--	--	48.1
2007	--	--	--	--	--	--	68.2
2008	--	--	--	--	--	--	75.6
2009	--	--	--	--	--	--	92.6
2010	--	--	--	--	--	--	66.5
2011	--	--	--	--	--	--	13.4
2012	--	--	--	--	--	--	15.4
2013	--	--	--	--	--	--	18.4
2014	--	--	--	--	--	--	0.1
2015	--	--	--	--	--	--	0.2
Subtotal	28	--	--	--	--	--	552.1

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	53.8	--	7.8	61.6	--	61.6
2011	54	87.4	--	73.6	161.0	--	161.0
2012	26	58.8	--	50.2	109.0	--	109.0
2013	32	111.9	--	63.3	175.2	--	175.2
2014	39	123.3	--	61.6	184.9	--	184.9
2015	39	163.3	--	68.7	232.0	--	232.0
2016	26	90.1	--	72.2	162.3	--	162.3
2017	27	85.0	--	71.2	156.2	--	156.2
2018	--	--	--	44.1	44.1	--	44.1
Subtotal	276	773.6	--	512.7	1286.3	--	1286.3

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	44.9	--	6.5	51.4	--	51.4
2011	54	71.9	--	60.5	132.4	--	132.4
2012	26	47.6	--	40.6	88.2	--	88.2
2013	32	89.1	--	50.4	139.5	--	139.5
2014	39	96.5	--	48.3	144.8	--	144.8
2015	39	125.7	--	52.9	178.6	--	178.6
2016	26	68.2	--	54.7	122.9	--	122.9
2017	27	63.3	--	53.0	116.3	--	116.3
2018	--	--	--	32.3	32.3	--	32.3
Subtotal	276	607.2	--	399.2	1006.4	--	1006.4

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	7/21/2003	8/25/2010
Approved Quantity	90	90
Reference	Approved M/S B Acquisition Strategy	ASN RD&A M/S C ADM
Start Year	2010	2010
End Year	2011	2011

A Low Rate Initial Production Decision (LRIP) quantity of 90 units was identified in the NMT Acquisition Strategy Report (ASR) that was prepared for Milestone (MS) B and signed July 21, 2003 by Assistant Secretary of the Navy (ASN) Research, Development and Acquisition (RD&A). MS B was approved by ASN RD&A on October 21, 2003.

The NMT Acquisition Strategy prepared for MS C, which was approved on June 24, 2010, again requested 90 LRIP units. The MS C Acquisition Decision Memorandum (ADM) approved a total of 90 units, 65 units for the NMT program and 25 units for Other Customers. MS C for NMT was approved by ASN RD&A on August 25, 2010.

ASN RD&A authorized an LRIP quantity in excess of 10% based on NMT's strong technical performance during Operational Assessment, the necessity to ensure a smooth and consistent establishment of production capacity as well as significant operational benefits from providing the NMT capability aligned with the satellites with which it will operate. In addition to avoiding a break in production between LRIP and Full-Rate Production (FRP), the increase will facilitate significant cost efficiencies.

Foreign Military Sales

PMW/A 170 has a current requirement for the development/procurement of 40 NMT - International Partner Variant (IPV) terminals, to satisfy signed Foreign Military Sales (FMS) cases for Canada, The Netherlands and the United Kingdom.

Nuclear Cost

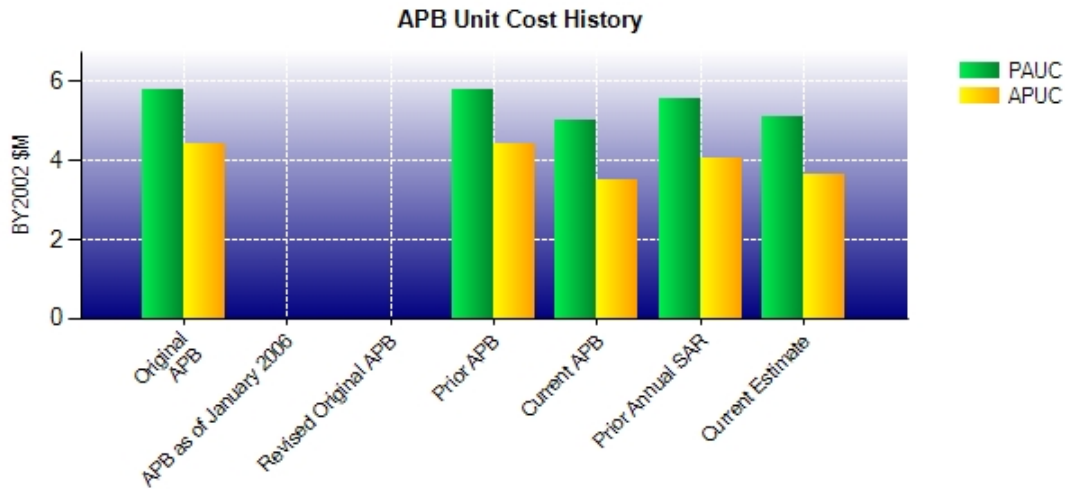
None

Unit Cost**Unit Cost Report**

	BY2002 \$M	BY2002 \$M	
Unit Cost	Current UCR Baseline (OCT 2010 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1517.9	1558.5	
Quantity	304	304	
Unit Cost	4.993	5.127	+2.68
Average Procurement Unit Cost (APUC)			
Cost	962.0	1006.4	
Quantity	276	276	
Unit Cost	3.486	3.646	+4.59

	BY2002 \$M	BY2002 \$M	
Unit Cost	Original UCR Baseline (DEC 2006 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1923.4	1558.5	
Quantity	333	304	
Unit Cost	5.776	5.127	-11.24
Average Procurement Unit Cost (APUC)			
Cost	1345.6	1006.4	
Quantity	305	276	
Unit Cost	4.412	3.646	-17.36

Unit Cost History



	Date	BY2002 \$M		TY \$M	
		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 2009	5.546	4.037	6.811	5.142
Current Estimate	DEC 2010	5.127	3.646	6.291	4.661

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
6.970	0.073	0.637	0.045	0.000	-1.016	0.000	-0.418	-0.679	6.291

Current SAR Baseline to Current Estimate (TY \$M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
5.544	0.039	0.553	0.050	0.000	-1.064	0.000	-0.461	-0.883	4.661

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	N/A	OCT 2003
Milestone C	N/A	FEB 2010	N/A	AUG 2010
IOC	N/A	SEP 2012	N/A	SEP 2012
Total Cost (TY \$M)	N/A	2321.1	N/A	1912.6
Total Quantity	N/A	333	N/A	304
Prog. Acq. Unit Cost (PAUC)	N/A	6.970	N/A	6.291

Cost Variance**Cost Variance Summary**

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	630.2	1690.9	--	2321.1
Previous Changes				
Economic	+11.3	+13.6	--	+24.9
Quantity	--	-8.3	--	-8.3
Schedule	--	+10.4	--	+10.4
Engineering	--	--	--	--
Estimating	+9.6	-160.2	--	-150.6
Other	--	--	--	--
Support	--	-127.1	--	-127.1
Subtotal	+20.9	-271.6	--	-250.7
Current Changes				
Economic	--	-2.7	--	-2.7
Quantity	--	--	--	--
Schedule	--	+3.3	--	+3.3
Engineering	--	--	--	--
Estimating	-24.8	-133.6	--	-158.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-24.8	-133.0	--	-157.8
Total Changes	-3.9	-404.6	--	-408.5
CE - Cost Variance	626.3	1286.3	--	1912.6
CE - Cost & Funding	626.3	1286.3	--	1912.6

Summary Base Year 2002 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	577.8	1345.6	--	1923.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	-2.3	--	-2.3
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-6.0	-128.0	--	-134.0
Other	--	--	--	--
Support	--	-101.0	--	-101.0
Subtotal	-6.0	-231.3	--	-237.3
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-19.7	-107.9	--	-127.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-19.7	-107.9	--	-127.6
Total Changes	-25.7	-339.2	--	-364.9
CE - Cost Variance	552.1	1006.4	--	1558.5
CE - Cost & Funding	552.1	1006.4	--	1558.5

Previous Estimate: December 2009

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised Estimate due to revised cost estimates from the Service Cost Position (SCP) developed by the Naval Center for Cost Analysis (NCCA). (Estimating)	-19.7	-24.8
RDT&E Subtotal	-19.7	-24.8
Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.7
Stretch-out of procurement buy profile resulting in increased procurements in FY16 to meet operational need. Cost growth due to escalation. (Schedule)	0.0	+3.3
Adjustment for current and prior escalation. (Estimating)	+0.2	+0.2
The current program procurement plan is through 2018 vice previous estimate of 2032. (Estimating)	-3.4	-5.4
Revised estimate due to competitive Firm Fixed Price (FFP) contract pricing which resulted in a lower unit cost. (Estimating)	-104.7	-128.4
Procurement Subtotal	-107.9	-133.0

Contracts

Appropriation: RDT&E

Contract Name	NMT SDD EDM
Contractor	Raytheon
Contractor Location	Marlboro, MA 01752
Contract Number, Type	N00039-04-C-0012/2, CPAF
Award Date	October 01, 2007
Definitization Date	October 01, 2007

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
162.3	N/A	20	162.3	N/A	20	187.2	197.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	-37.7	-5.5
Previous Cumulative Variances	-25.3	-16.4
Net Change	-12.4	+10.9

Cost And Schedule Variance Explanations

The unfavorable net change in both the Cost and Schedule Variances resulted almost exclusively from prime contractor schedule concurrency, change notices, material rework, and Engineering Development Model (EDM) system delivery delays. The primary program variances reside in material and subcontract tasks, which are the tasks responsible for the change notices and rework on the program. Not only did these variances drive up program costs, but delayed the assembly and delivery of the EDM units. Despite these delays, all EDMs have been delivered to date. With less than 4% of the work remaining, the Cost Variance is not expected to improve or recover, but the Schedule Variance will continue to burn down to zero through the end of work. The Government team continues to validate contractor Estimate At Complete (EAC) for achievability and realism through independent EACs and Earned Value Management (EVM) analysis, and is working with the contractor to understand and control the cost growth, while exploring incentive opportunities.

Contract Comments

Contract funding numbers include \$33.1M of FMS funding. The NMT SDD EDM contract is more that 90% complete and will no longer be reported.

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	641.5	N/A	276	641.5	641.5

Cost And Schedule Variance Explanations

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

Contract Comments

Cost and Schedule variance reporting is not required on this Firm Fixed Price (FFP) contract.

This is the first time reporting the NMT Production & Deployment (PD) contract.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	28	28	28	100.00%
Production	0	0	276	0.00%
Total Program Quantities Delivered	28	28	304	9.21%

Expenditures and Appropriations (TY \$M)			
Total Acquisition Cost	1912.6	Years Appropriated	11
Expenditures To Date	629.8	Percent Years Appropriated	61.11%
Percent Expended	32.93%	Appropriated to Date	806.9
Total Funding Years	18	Percent Appropriated	42.19%

Of the 28 total development units, 8 are prototypes and 20 are Engineering Development Models (EDMs). All 8 prototypes and all 20 EDMs have been delivered. 13 EDMs were delivered in 2009 and the final 7 were delivered in 2010.

Operating and Support Cost

Assumptions And Ground Rules

Operating and Support (O&S) costs are the sum of all costs resulting from the operation, maintenance, and support of the terminals after acceptance into the Navy Inventory. The operating costs are the sum of the cost of operational personnel, facilities and software maintenance. The projected life cycle support for all NMT systems is 17 years. The prime equipment inventory at Full Operational Capability (FOC) will consist of 146 Ships, 77 Submarines, 42 Shores, 6 Trainers and 5 Test systems (based on approved Acquisition Program Baseline (APB)).

Support costs includes depot maintenance, sustaining support, In Service Engineering Activity (ISEA), demilitarization & disposal, program management, systems engineering, system test & evaluation and facilities costs. The total Operations & Support (O&S) Costs represent NMTs approved Milestone (MS) C APB Operations & Maintenance, Navy (OMN) costs, which exclude Mission Personnel or Unit Level Manpower. Mission Personnel costs are not included in the approved MS C APB OMN total cost, however they are a part of the NMT Service Cost Position (SCP).

The unit of measure, excluding Unit-Level Manpower, is Total Base Year (BY)2002 O&S dollars from FY 2011 to FY 2027 divided by the total years (17). This total was further divided by the total number of NMT systems (276).

The unit of measure for Unit-Level Manpower is Total BY 2002 O&S dollars from FY 2012 to FY 2027 divided by the total years (16). This total was further divided by the total number of NMT systems (276).

Super High Frequency (SHF) and Navy Extremely High Frequency (EHF) Satellite Program (NESP) programs are antecedent programs, 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	59.0	--
Unit Operations	--	--
Maintenance	0.6	--
Sustaining Support	11.2	--
Continuing System Improvements	--	--
Indirect Support	19.5	--
Other	--	--
Total Unitized Cost (Base Year 2002 \$)	90.3	--

Total O&S Costs \$M	NMT	No Antecedent
Base Year	147.2	--
Then Year	219.1	--