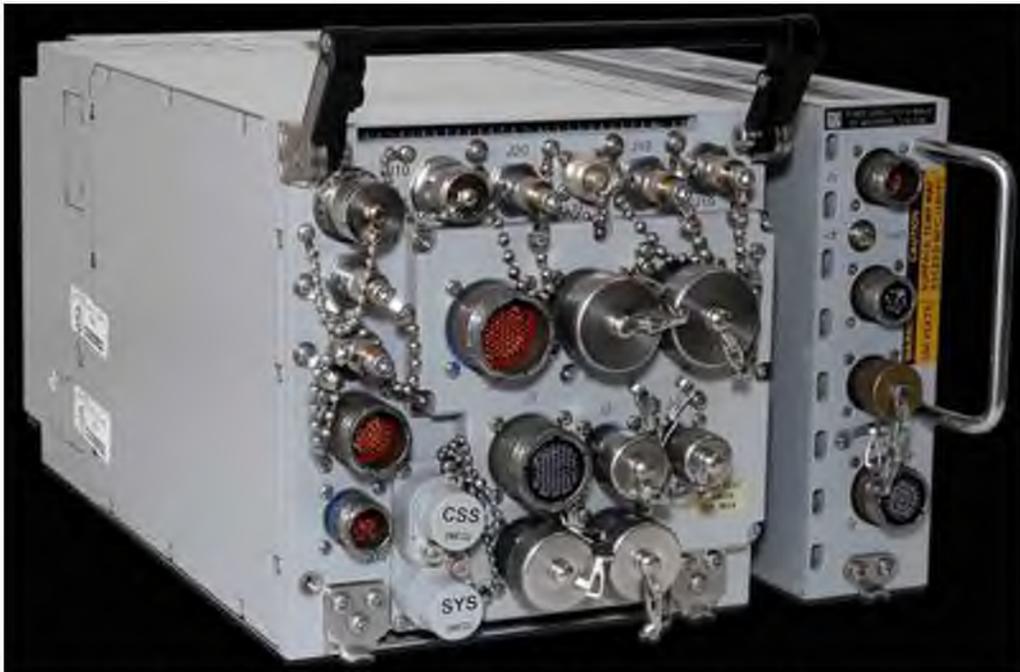


UNCLASSIFIED



RCS: DD-A&T(Q&A)823-554



Multifunctional Information Distribution System (MIDS)

As of FY 2021 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs	3
Program Information	5
Responsible Office	5
References	6
Mission and Description	7
Executive Summary	8
Threshold Breaches	12
Schedule	13
Performance	16
Track to Budget	31
Cost and Funding	35
Charts	72
Risks	74
Low Rate Initial Production	76
Foreign Military Sales	77
Nuclear Costs	80
Unit Cost	81
Cost Variance	84
Contracts	88
Deliveries and Expenditures	92
Operating and Support Cost	93

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

Program Information

Program Name

Multifunctional Information Distribution System (MIDS)

DoD Component

Navy

Joint Participants

Air Force; Army

Navy is the lead Component as specified in the USD(AT&L) Navy Program Delegation Decisions Acquisition Decision Memorandum (ADM) dated July 24, 2012.

Responsible Office

CAPT Shaun Swartz
MIDS Program Office
33050 Nixie Way
Bldg 17A, Suite 422
San Diego, CA 92147-5416

Phone: 619-524-1549

Fax: 619-524-1639

DSN Phone: 524-1549

DSN Fax: 524-1639

Date Assigned: June 19, 2019

shaun.swartz@navy.mil

References

SAR Baseline (Production Estimate)

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated March 22, 2006

Approved APB

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated November 16, 2017

Mission and Description

The Multifunctional Information Distribution System (MIDS) program consists of two products, MIDS Low Volume Terminal (MIDS-LVT) and MIDS Joint Tactical Radio System (MIDS JTRS).

The MIDS-LVT is the product of the MIDS International Program Office (IPO), a multinational (U.S., France (FRA), Germany (DEU), Italy (ITA), and Spain (ESP)) cooperative development program with joint service participation (U.S. Navy (USN), U.S. Army (USA), and U.S. Air Force (USAF)). The DoD established the program to design, develop and deliver low volume, lightweight tactical information system terminals for U.S. and Allied fighter aircraft, bombers, helicopters, ships, and ground sites. MIDS-LVT provides interoperability with North Atlantic Treaty Organization (NATO) and non-NATO users, significantly increasing force effectiveness and minimizing hostile actions and friend-on-friend engagements.

Three principal configurations of the terminal are in production and use an open system, modular architecture. MIDS-LVT (1) includes voice, Tactical Air Navigation (TACAN) and variable power transmission and provides a Link 16 capability to the F/A-18, which was previously unable to use Joint Tactical Information Distribution System (JTIDS) due to space and weight limitations. MIDS-LVT(2) is an Army variant of MIDS-LVT tailored as a functional replacement for the JTIDS Class 2M terminal. MIDS-LVT(3), also referred to, as MIDS Fighter Data Link (FDL), is a reduced function terminal for the Air Force (no voice, no TACAN). MIDS-LVT developed Block Upgrade 2 (BU2) to incorporate Cryptographic (Crypto) Modernization (CM), Enhanced Throughput (ET), and Frequency Remapping (FR) in the MIDS-LVT terminal.

MIDS JTRS is designed as a U.S. Only Pre-Planned Product Improvement (P3I), executed as an Engineering Change Proposal (ECP) to the production MIDS-LVT configuration, and is fully compatible with MIDS-LVT. MIDS JTRS completed qualification in first quarter of FY 2010. It facilitated the Joint Program Executive Office (JPEO) JTRS incremental approach for fielding advanced JTRS transformational networking capability and transformed the MIDS-LVT into a four channel, Software Communications Architecture (SCA) compliant, Joint Tactical Radio. A form-fit-function replacement to MIDS-LVT, MIDS JTRS also adds three programmable 2 Megahertz (MHz) to 2 Gigahertz (GHz) channels capable of hosting the JTRS legacy and networking Waveforms (WFs). In addition to the Link 16, TACAN, and voice functionality found in MIDS-LVT, and MIDS-LVT BU2, MIDS JTRS adds capabilities such as CM, ET, FR, software programmability, Four Net Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4), and Tactical Targeting Network Technology (TTNT). CMN-4 and TTNT are foundational components of Naval Integrated Fire Control (NIFC).

Executive Summary

Program Highlights Since Last Report

As of February 3, 2020, the MIDS Program Office (MPO) has contracted for 4,823 MIDS Joint Tactical Radio System (JTRS) Terminals, of which 2,319 have been delivered and accepted by the government. The quantity of Terminals delivered and accepted represents an increase of over 500 terminals from December 2018. Together with over 10,500 MIDS-Low Volume Terminal (LVT) Terminals procured and delivered, these milestones reflect the strong commitment by the U.S., the 5-Nation Partners covered under the International Program Office (IPO) Program Memorandum of Understanding, and our industry partners to deliver interoperable, affordable and secure Link 16 and programmable networking technologies for the Joint, Coalition, and International Warfighter. The MPO continues to focus on accelerating the delivery of MIDS JTRS and MIDS-LVT Terminals to the maximum extent possible in order for our Joint, Coalition and International partners to meet the National Security Agency mandate for Crypto Modernization (CM) by January 2022.

The MIDS-LVT Block Upgrade 2 (BU2) provides the critical upgrades to meet the National Security Agency mandate for CM and National Telecommunications and Information Agency and Federal Aviation Agency mandate for Frequency Remapping (FR) capability to the MIDS-LVT terminal. As of January 2020, MIDS-LVT BU2 development and formal government qualification acceptance testing is complete and vendors have started production/retrofit activities.

MIDS JTRS Four Net Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4) is an enhancement to Link 16 and provides a significant capability upgrade to the Fleet. A Full Fielding and Production Decision was granted February 25, 2019. The final Operational Test report was signed April 30, 2019 and MIDS JTRS CMN-4 was found to be operationally suitable and effective. The IOC ADM was signed May 30, 2019 by Commander, Naval Air Forces – Atlantic and endorsed by Deputy Assistant Secretary of the Navy (Air Programs) on July 26, 2019. As of January 2020, 30 operational squadrons and three training squadrons are equipped with MIDS JTRS CMN-4.

The U.S. Air Force has continued to fund development efforts to support migrating F-15, F-16 and F-22 aircraft to MIDS JTRS CMN-4. F-15 and F-16 program offices have been concurrently conducting early flight-testing with the updated Integrated Build 8.X.F-16 IOC is projected to be attained in March 2020. F-15 Validation/Verification (equivalent of IOC) is projected to be attained in July 2020. In June 2019, the MIDS JTRS F-22 Terminal, a modified configuration of MIDS JTRS CMN-4, was integrated into the communications suite of the Flying Test Bed (FTB) as part of the Orange Flag exercise. The MIDS F-22 Terminal performed as intended. Formal qualification testing continued during this reporting period with the first flight developmental test scheduled for February 2020. The MPO continues to coordinate and collaborate with the PEO (Joint Strike Fight (JSF)) to address Link 16 interoperability requirements for future implementation into the F-35 platform. MIDS JTRS Engineering Release 0H includes the software fix for a known interoperability issue. Flight testing at China Lake ongoing to verify interoperability.

MIDS Modernization is a continuous technology development/acquisition strategy for robust interoperable communications for MIDS JTRS hosted waveforms. The first phase of this capability is a Link 16 enhancement to the MIDS JTRS CMN-4 known as Block Upgrade 3 (BU3). MIDS JTRS BU3 consists of a hardware upgrade to the Link 16 Transceiver Shop Replaceable Unit. The development contract/delivery orders for BU3 were awarded March 4, 2019. Preliminary Design Review was successfully conducted June 26-27, 2019. Schedule Risk Assessments and Integrated Baseline Reviews with both Viasat and DLS completed in August and September 2019. An Incremental Design Review was successfully conducted January 29-30, 2020. Test Readiness Review (TRR) is scheduled for January 2021, and formal qualification testing and certification is scheduled for 3Q FY 2021. The next evolution of this modernized capability, funded to commence in FY 2021, provides an additional \$83M of RDT&E to update the software and firmware necessary to meet the Joint Combatant Commander's prioritized requirements for Integrated Fires Control and Joint Tactical Grid information exchange requirements at the Tactical Edge. An additional \$30M RDT&E supports the development of a field loadable capability directly enabling rapid technology insertion and enhanced readiness, permitting significant upgrades without Terminal returns to the manufacturer.

MIDS JTRS Tactical Targeting Network Technology (TTNT) provides an Internet Protocol-based networking capability on tactical aircraft. Throughout 2019 delivery of Production Representative Terminals to platforms continues to support early integration and airworthiness testing. The Operational Assessment (OA) Phase 1 was conducted in July 2019. The Risk

Assessment Report from Commander, Operational Test and Evaluation Force was completed in August 2019 with a low risk recommendation to proceed. A Limited Production and Fielding (LP&F) Decision was granted in September 2019. This accelerated LP&F decision provides early insight for tests, reduces risk for platform OT and maintains milestones towards IOC. The MIDS JTRS TTNT (V6) TRR was held November 14, 2019. The Terminal first flight is scheduled for 3Q FY 2020. OA Phase 2 is scheduled to complete in April 2020 followed by final government qualification testing and platform DT/OT. MIDS JTRS TTNT IOC with two Navy platforms is projected to be declared in 1Q FY 2021, and one Navy platform in 1Q FY 2022.

A summary of the significant MIDS Program contract actions during 2019 include:

- Lot 8 MIDS JTRS CMN-4 Production (February 2019) - Firm Fixed Price Delivery Orders awarded for 698 Terminals for a total value of \$155M.
- MIDS-JTRS BU3 Development (March 2019) – CPFF Delivery Orders awarded for a total value of \$53M.
- Lot 8a MIDS JTRS CMN-4 Production (July 2019) - Firm Fixed Price Delivery Orders awarded for 428 Terminals for a total value of \$93.5M.
- MIDS-LVT BU2 Retrofit Contract was awarded July 2019 for a value of \$62.3M.
- Lot 8a Emergent MIDS JTRS CMN-4/FMS Production (September 2019) - Firm Fixed Price Delivery Orders awarded for 563 Terminal for a total value of \$123.1M.
- Lot 20 MIDS-LVT Production/Retrofit (September 2019) - Firm Fixed Price Delivery Orders awarded for 89 Terminals for a total value of \$23M.
- Lot 8b MIDS JTRS TTNT Production (September 2019) - Firm Fixed Price Delivery Orders awarded for 53 Terminals for a total value of \$62.9M.
- Lot 8c MIDS JTRS CMN-4/F-22 Production (October 2019) - Firm Fixed Price Delivery Orders awarded for 147 Terminals for a total value of \$25.4M.
- Lot 8d MIDS JTRS CMN-4/FMS Production (December 2019) - Firm Fixed Price Delivery Orders awarded for 152 Terminals for a total value of \$25.6M.
- Lot 20 Emergent MIDS-LVT/FMS Production/Retrofit (December 2019) - Firm Fixed Price Delivery Orders awarded for 110 Terminals for a total value of \$26.6M.
- Lot 8e MIDS JTRS CMN-4/FMS Production (January 2020) - Firm Fixed Price Delivery Order s awarded for 212 Terminals for a total value of \$40.8M.

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

History of Significant Developments Since Program Initiation	
--	--

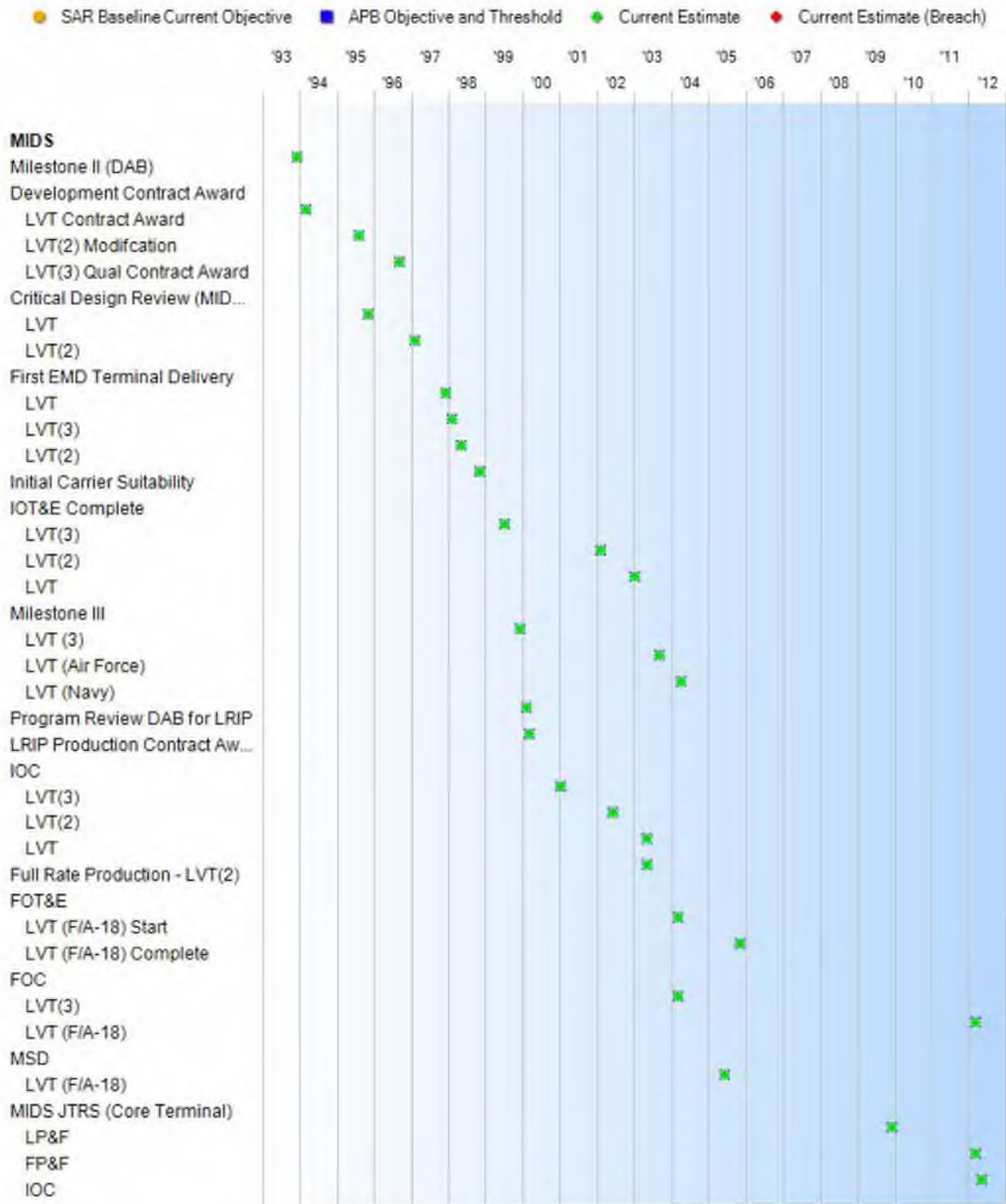
History of Significant Developments Since Program Initiation	
Date	Significant Development Description
April 1990	Joint Requirements Oversight Council Memorandum (JROCM 031-90) approved the Mission Need Statement (MNS) for MIDS-LVT.
December 1993	At MS II, USD(AT&L) authorized MIDS to proceed with MIDS-LVT EMD.
September 2001	USD(AT&L) directed the MIDS Program to update the Acquisition Strategy to include a JTRS Compliance Migration Strategy.
September 2003	At MS III, Assistant Secretary of the Navy for Research, Development & Acquisition (ASN(RDA)) authorized Full Rate Production for MIDS-LVT.
July 2004	ASN(RDA) approved the Acquisition Strategy to develop MIDS JTRS via an Engineering Change Proposal (ECP).
February 2005	USD(AT&L) authorized the establishment of the Joint Program Executive Office (JPEO) Joint Tactical Radio System (JTRS) for authority over all JTRS products, including MIDS.
May 2008	JROCM 112-08 approved MIDS JTRS Capability Production Document.
December 2009	MIDS JTRS completed Contractor First Article Qualification Test and Government First Article Qualification Test (GFAQT). USD(AT&L) approved the Limited Production & Fielding of MIDS JTRS.
April 2011	MIDS JTRS completed Initial Operational Test & Evaluation including Verification of the Correction of Deficiencies(VCD), COMOPTEVFOR (Naval Command Operational Test and Evaluation Force) and Director of Operational Test & Evaluation Reports.
April 2012	USD(AT&L) approved the Full Production and Fielding of MIDS JTRS.
July 2012	USD(AT&L) directed the JPEO JTRS reorganization and realignment to transfer MIDS to Navy MDA alignment and designated MIDS as an ACAT IC program.
November 2012	ASN(RDA) approved MIDS JTRS IOC.
January 2013	ASN(RDA) designated MIDS as the Program Manager Air/Program Manager Warfare-101.
January 2013	ASN(RDA) authorized development of MIDS JTRS TTNT and MIDS JTRS CMN-4 capabilities to be managed as ECPs to the MIDS ACAT IC Program.
January 2013	PEO(Tactical Aircraft) assigned MIDS as the Naval Integrated Fire Control – Counter Air From the Air Advanced Tactical Data Link (ATDL) lead to coordinate with F/A-18, E-2D, EA-18G and other platform offices.
May 2013	Procurement, and Operating and Sustainment (O&S) breaches were realized due to increased procurement quantities of MIDS terminals by F/A-18. Program Deviation Report was submitted by the MIDS PM and approved by ASN(RD&A).
July 2013	MIDS JTRS CMN-4 Cooperative Development delivery orders were awarded to ViaSat and DLS.
November 2013	Due to the May Program Deviation Report, a revised APB was approved by ASN(RD&A).
November 2013	MIDS-LVT Block Upgrade 2 (BU2) Award. MIDS-LVT BU2 development contracts were awarded to DLS, EuroMIDS and ViaSat. MIDS-LVT BU2 is a 39-month ECP to bring National Security Agency mandated Crypto Modernization and National Telecommunications and Information Agency and Federal Aviation Administration mandated Frequency Remapping capabilities to the MIDS-LVT Link-16 product line.
August 2014	MIDS JTRS TTNT L-Band Full Development Contract was awarded to DLS and ViaSat.
November 2014	MIDS JTRS TTNT waveform development was completed. The next step is early porting and

	demonstration of the waveform.
March 2015	Conducted the first MIDS JTRS CMN-4 flight on F/A-18 aircraft at China Lake.
May 2015	MIDS Modernization Increment 1 (MMI 1) demonstration testing was conducted, and development delivery orders were awarded to DLS and ViaSat.
June 2015	Responsibilities for the Link-16 waveform were transferred to MIDS program office from Joint Tactical Networking Center (JTNC).
January 2016	The MIDS Program delivered its 10,000 th MIDS-LVT terminal.
November 2017	The MIDS Program delivered its 1,000th MIDS JTRS terminal.
November 2017	ASN(RD&A) delegated future approval authority to PEO (T)(Tactical Aircraft) for procurements of the MIDS JTRS CMN-4 terminals and authority for production fielding of the MIDS JTRS CMN-4 terminal with H-12 and H-14 based off of satisfactory results November 8, 2017.
November 2017	MIDS APB Change 5 approved by ASN(RD&A) November 16, 2017.
September 2018	PEO(T) authorized the Full Production & Limited Fielding for the MIDS JTRS CMN-4 Terminal subject to the availability of funds September 10, 2018.
February 2019	PEO(T) authorized the Full Production and Full Fielding for the MIDS JTRS CMN-4 Terminal on February 20, 2019.
May 2019	Commander, Naval Air Force N421, as the operational authority, declared MIDS JTRS CMN-4 had met the requirements for IOC on May 30, 2019.
September 2019	ASN(RD&A) approved MIDS JTRS TTNT Limited Production and Fielding on September 24, 2019. This was subsequent to a successful From the Air Advanced Tactical Data Link Interim Program Review #7 conducted on September 9, 2019.

Threshold Breaches

APB Breaches			Explanation of Breach
Schedule		<input type="checkbox"/>	<p>An RDT&E breach occurred in 2019 SAR as a result of an overall 11% growth in RDT&E since Change 5 APB of 2017. Growth driven by an additional \$148M RDT&E in PB 2021 controls and consists of:</p> <p>1) \$83M beginning in FY 2021 to upgrade MIDS JTRS software and firmware necessary to meet Joint Combatant Commander's prioritized requirements for Integrated Fire Control.</p> <p>2) \$30M beginning in FY 2021 to develop a field loadable capability, directly enabling rapid technology insertion and enhanced readiness.</p> <p>3) \$35M beginning in FY 2021 to upgrade special test equipment to be WIN10 compliant and update documentation to comply with new National Security Agency (NSA) Information Assurance Software Requirements Document.</p> <p>The O&S breach occurred in 2019 SAR as a result and overall 19% growth in O&S since Change 5 APB of 2017. Growth driven by a cumulative MIDS JTRS Terminal quantity increase of 1,617. The procurement of these additional terminals resulted in the O&S breach. The Procurement, PAUC and APUC overall continue below thresholds.</p> <p>A PDR was signed by the MIDS PM on February 7, 2020. A revised APB is in process.</p>
Performance		<input type="checkbox"/>	
Cost	RDT&E	<input checked="" type="checkbox"/>	
	Procurement	<input type="checkbox"/>	
	MILCON	<input type="checkbox"/>	
	Acq O&M	<input type="checkbox"/>	
O&S Cost		<input checked="" 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



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Milestone II (DAB)	Dec 1993	Dec 1993	Dec 1993	Dec 1993
Development Contract Award				
LVT Contract Award	Mar 1994	Mar 1994	Mar 1994	Mar 1994
LVT(2) Modification	Aug 1995	Aug 1995	Aug 1995	Aug 1995
LVT(3) Qual Contract Award	Sep 1996	Sep 1996	Sep 1996	Sep 1996
Critical Design Review (MIDS Terminal)				
LVT	Nov 1995	Nov 1995	Nov 1995	Nov 1995
LVT(2)	Feb 1997	Feb 1997	Feb 1997	Feb 1997
First EMD Terminal Delivery				
LVT	Dec 1997	Dec 1997	Dec 1997	Dec 1997
LVT(3)	Feb 1998	Feb 1998	Feb 1998	Feb 1998
LVT(2)	May 1998	May 1998	May 1998	May 1998
Initial Carrier Suitability	Nov 1998	Nov 1998	Nov 1998	Nov 1998
IOT&E Complete				
LVT(3)	Jul 1999	Jul 1999	Jul 1999	Jul 1999
LVT(2)	Feb 2002	Feb 2002	Feb 2002	Feb 2002
LVT	Jan 2003	Jan 2003	Jan 2003	Jan 2003
Milestone III				
LVT (3)	Dec 1999	Dec 1999	Dec 1999	Dec 1999
LVT (Air Force)	Sep 2003	Sep 2003	Sep 2003	Sep 2003
LVT (Navy)	Apr 2004	Apr 2004	Apr 2004	Apr 2004
Program Review DAB for LRIP	Feb 2000	Feb 2000	Feb 2000	Feb 2000
LRIP Production Contract Award	Mar 2000	Mar 2000	Mar 2000	Mar 2000
IOC				
LVT(3)	Jan 2001	Jan 2001	Jan 2001	Jan 2001
LVT(2)	Jun 2002	Jun 2002	Jun 2002	Jun 2002
LVT	May 2003	May 2003	May 2003	May 2003
Full Rate Production - LVT(2)	May 2003	May 2003	May 2003	May 2003
FOT&E				
LVT (F/A-18) Start	Mar 2004	Mar 2004	Mar 2004	Mar 2004
LVT (F/A-18) Complete	Nov 2005	Nov 2005	Nov 2005	Nov 2005
FOC				
LVT(3)	Mar 2004	Mar 2004	Mar 2004	Mar 2004
LVT (F/A-18)	Mar 2012	Mar 2012	Mar 2012	Mar 2012

MSD				
LVT (F/A-18)	Jun 2005	Jun 2005	Jun 2005	Jun 2005
MIDS JTRS (Core Terminal)				
LP&F	N/A	Dec 2009	Dec 2009	Dec 2009
FP&F	N/A	Mar 2012	Mar 2012	Mar 2012
IOC	N/A	May 2012	May 2012	May 2012

Change Explanations

None

Acronyms and Abbreviations

FOT&E - Follow-On Test and Evaluation
 FP&F - Full Production and Fielding
 IOT&E - Initial Operational Test and Evaluation
 JTRS - Joint Tactical Radio System
 LP&F - Limited Production and Fielding
 LVT - Low Volume Terminal
 MSD - Material Support Date
 Qual - Qualification

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Demonstrated Performance	Current Estimate	
Interoperability				
All top level IERs in SMORD	All top level IERs in SMORD	All critical top level IERs in SMORD	100% Demonstrated	All top level IERs in SMORD
Waveform Compatibility				
STANAG 4175 & JTIDS SSS	STANAG 4175 & JTIDS SSS	(T=O) STANAG 4175 & JTIDS SSS	JITC Certified	STANAG 4175 & JTIDS SSS
Message Standard				
STANAG 5516 (& 5616 for Data Fwds) & MIL-STD-6016B	STANAG 5516 (& 5616 for Data Fwds) & MIL-STD-6016B	(T=O) STANAG 5516 (& 5616 for Data Fwds) & MIL-STD-6016B	JITC Certified	STANAG 5516 (& 5616 for Data Fwds) & MIL-STD-6016B
Maximum Power Transmission (w)				
LVT				
Multiple selectable levels	Multiple selectable levels	>=200 with IF for 1000	200 with IF	Multiple selectable levels
LVT(2)				
Multiple selectable levels	Multiple selectable levels	>=200 or 25 selectable	200/25	Multiple selectable levels
LVT(3)				
Multiple selectable levels	Multiple selectable levels	>=50	50	Multiple selectable levels
IER (Kbps)				
1000	>=1000	28.8 -115.2	1100 kbps	>=1000
Paired Time Slot Relay Capability				
Integral and automated	Integral and automated	(T=O) Integral and automated	Integral and automated	Integral and automated
Repromulgation Relay (nm) MIDS-LVT(2)				
4 hop	4 hops	3 hops	4 hops	4 hops
Paired Time Slot Relay Range (nm) (USN Only)				

1200	>=1200	>=500	520	>=1200
Communication Range				
LVT (USN: C2 to C2)				
300	>=300	(T=O) >=300	350	>=300
LVT (USN: Non-C2 to C2)				
240	>=240	>=220	240	>=240
LVT (USN: Non-C2 to Non-C2)				
200	>=200	>=180	220	>=200
LVT (USN: Surface Platforms)				
LOS up to 300	LOS >=300	(T=O) LOS >=300	300	LOS >=300
LVT (F-16: Non-C2 to C2)				
300	>=300	>=200	200	>=300
LVT (F-16: Non-C2 to Non-C2)				
150	>=150	>=100	150	>=150
LVT(2)				
Up to 300 with LOS at 200 w	Up to 300 with LOS at 200 w	(T=O) Up to 300 with LOS at 200 w	300	Up to 300 with LOS at 200 w
LVT(3) (Non-C2 to C2)				
300	>=300	>=200	300	>=300
LVT(3) (Non-C2 to Non-C2)				
150	>=150	>=100	170	>=150
Voice Channels: LVT (USN)				
Capable of 2	Capable of 2	1	2	Capable of 2
Coded Message Error Probability (%)				
LVT				
1	<=1	<=2	Passed	<=1
LVT(3)				
< 1 detected	<= 1 detected	<=2	Passed	<= 1 detected
LVT(2)				
1	<=1	<=2	Passed	<=1
Jam Resistance				
LVT (USN) (db)				
MJCS-194 - 89	MJCS-194-89	(T=O) MJCS-194-89	Compliant	MJCS-194-89
LVT (F-16) (%)				

< 1 detected error	<=1 detected error	(T=O) <=1 detected error	Passed	<=1 detected error
LVT(2) (%)				
< 1 detected error	<= 1 detected error	<= 5	Passed	<= 1 detected error
LVT(3) (%)				
< 1 detected error	<= 1 detected error	(T=O) <= 1 detected error	Passed	<= 1 detected error
Ao				
LVT				
.90	>=.90	(T=O) >=.90	.91	>=.90
LVT(2) (Terminal)				
.94	>=.94	>=.90	.94	>=.94
LVT(3)				
.97	>=.97	>=.95	.965	>=.97
MTBF (hr)(lab)				
USN				
1000	>=1000	(T=O) >=1000	1850	>=1000
USA				
1800	>=1800	>=1000	1850	>=1800
USAF				
1500	>=1500	>=1000	1850	>=1500
MFHBOMF/MTBOMF (hr)				
System				
25	>=25	(T=O) >=25	32	>=25
LVT (Aircraft) (Terminal)				
300	>=300	>=220	240	>=300
LVT (Ships) (Terminal)				
350	>=350	>=257	275	>=350
LVT(2) (Terminal)				
393	>=393	(T=O) >=393	425	>=393
MTTR (O-level) (min)				
LVT(2) (Terminal)				
30	<=30	(T=O) <=30	25	<=30
MCMTOMF				
LVT (USN Aircraft)				

60	<=60	<=90	75	<=60	
LVT (USN Ships)					
60	<=60	<=90	80	<=60	
LVT (USAF)					
MRT < 20	MRT < 20	MRT < 30	25	MRT < 20	
LVT(3)					
MRT < 20	MRT < 20	MRT < 30	28	MRT < 20	
Volume (Cubic Feet)					
LVT					
< .6	<= .6	(T=O) <= .6	.58	<= .6	
LVT(2)					
< 1.4	<=1.4	(T=O) <=1.4	1.32	<=1.4	
LVT(3)					
< .6	<= .6	(T=O) <= .6	.56	<= .6	
Weight (lbs)					
LVT					
< 65	<=65	(T=O) <=65	63.8	<=65	
LVT(2)					
< 88	<=88	(T=O) <=88	87.9	<=88	
LVT(3)					
< 65	<=65	(T=O) <=65	63.8	<=65	
MIDS-LVT Enhancement ECPs					
Message Standards					
N/A	STANAG 5516 (& 5616 for Data Fwds) & MIL-STD-6016C	STANAG 5516 (& 5516 for Data Fwds) & MIL-STD-6016B	STANAG 5516 (& 5616 for Data Fwds) & MIL-STD-6016C	STANAG 5516 (& 5616 for Data Fwds) & MIL-STD-6016C	(Ch-1)
Communications Range					
N/A	see note 12c through 17c	(T=O) see note 12c through 17c	Met Objective - see not 12c-17c	Met Objective - see not 12c-17c	(Ch-1)
Information Exchange Rate (Kbps)					
LET 0					
N/A	>=358	>=107	>=358	>=358	(Ch-1)
LET 1					
N/A	>=546	>=358	>=546	>=546	(Ch-1)
LET 2					
N/A	>=833	>=546	>=833	>=833	(Ch-1)
LET 3					
N/A	>=968	>=833	>=968	>=968	(Ch-1)

LET 4					
N/A	>=1100	>=968	>=1100	>=1100	(Ch-1)
Coded Message Error Probability (%)					
LET 0					
N/A	<=1%	<=2%	<=1%	<=1%	(Ch-1)
LET 1					
N/A	<=1%	<=2%	<=1%	<=1%	(Ch-1)
LET 2					
N/A	<=1%	<=2%	<=1%	<=1%	(Ch-1)
LET 3					
N/A	<=1%	<=2%	<=1%	<=1%	(Ch-1)
LET 4					
N/A	<=1%	<=2%	<=1%	<=1%	(Ch-1)
Jam Resistance					
N/A	MJCS-194-89	(T=O) MJCS-194-89	MJCS-194-89	MJCS-194-89	(Ch-1)
MIDS JTRS Performance Parameters					
Link-16 Waveform compatibility					
N/A	STANAG 4175 and MIDS LVT SSS	(T=O) STANAG 4175 and MIDS LVT SSS	Passed JITC waveform conformance test.	Passed JITC waveform conformance test.	
Link-16 Message Standard					
N/A	MIL-STD-6016C and STANAG 5516	(T=O) MIL-STD-6016C and STANAG 5516	Passed JITC waveform conformance test.	Passed JITC waveform conformance test.	
Link-16 IER					
Normal Operations with JTRS					
N/A	>=1100 Kbps	>=28-115.2 Kbps	128	128	
LET 0					
N/A	>=358	>=107	107	107	
LET 1					
N/A	>=546	>=358	358	358	
LET 2					
N/A	>=833	>=546	546	546	
LET 3					
N/A	>=968	>=833	837	837	
LET 4					
N/A	>=1100	>=968	968	968	
Interoperability: All top level IERs will be satisfied to the standards specified in the threshold (T) and objective (O) values.					

N/A	All top-level Information exchange Requirements (IERs) are met.	(T=O) All top-level Information Exchange Requirements (IERs) are met.	All top-level IERs transferred.	All top-level IERs transferred.
Link-16 Coded Message Error Probability (CMEP)				
LET 0				
N/A	<=1%	<=2%	<=2%	<=1%
LET 1				
N/A	<=1%	<=2%	<=2%	<=1%
LET 2				
N/A	<=1%	<=2%	<=2%	<=1%
LET 3				
N/A	<=1%	<=2%	<=2%	<=1%
LET 4				
N/A	<=1%	<=2%	<=2%	<=1%
Weight/Volume				
N/A	<=65 lbs, <=.6 cu.ft.	(T=O) <=65 lbs, <=.6 cu.ft.	Measured 54.7 lbs; measured .573 cu. ft.	<=65 lbs, <=.6 cu.ft.
Link-16 Jam Resistance				
JTRS (USN) (db)				
N/A	MJCS-194-89	(T=O) MJCS-194-89	Exceeds threshold by 1-3 db in 95% of all cases.	Exceeds threshold by 1-3 db in 95% of all cases.
All Others				
N/A	<=1% Detected message error rate	(T=O) <=1% Detected message error rate	.98%	.98%
Link-16 J-Voice Channels				
N/A	2	(T=O) 2	2	2
Link-16 Communications Range Data				
N/A	=300 nm (C2-C2 w/HPA); =240 nm (C2-non-C2); =200 nm (non-C2-non-C2)	=300 nm (C2-C2 w/HPA); =220 nm (C2-non-C2); =180 nm (non-C2-non-C2)	>=250 nm	>=250 nm.
Link-16 Communications Range J-Voice				
N/A	(T=O) >=220nm (C2-C2 w/HPA); >=140nm (C2-non-C2); >=90nm (non-C2-nonC2/non C2-C2)	(T=O) >=220nm (C2-C2 w/HPA); >=140nm (C2-non-C2); >=90nm (non-C2-nonC2/non C2-C2)	>=220nm (C2-C2 w/HPA) - Not Tested; >=140nm (C2-non-C2 - Not tested; >=90nm (non-C2-nonC2/non C2-C2) - 150.	>=220nm (C2-C2 w/HPA) - Terminal not installed in C2 platform yet; >=140nm (C2-non-C2 - Terminal not installed in C2 platform yet;

				>=90nm (non-C2-nonC2/non C2-C2) - 150.	
Link-16 Relay					
N/A	>=1200nm	>=500nm	Not tested yet.	>=500 nm	
Multi-Channels/Networks					
N/A	4 Channels simultaneously with TACAN/multi-net (single network) Link-16 fixed operation on Channel 1	(T=O) 4 Channels simultaneously with TACAN/multi-net (single network) Link-16 fixed operation on Channel 1	4 Channels passed.	4 Channels passed.	
Scan Frequencies					
N/A	Scan a minimum of 10 frequencies or presets	(T=O) Scan a minimum of 10 frequencies or presets	FOT&E: No MIDS JTRS waveforms require presets.	FOT&E: No MIDS JTRS waveforms require presets.	
Terminal Start-up/Restart (Link-16 only)					
N/A	<=2.0 min	<=3.5 min	1.45 min	3.2 min	(Ch-2)
IBIT Performance (Link-16 only)					
N/A	<=30seconds	<=70 seconds	29 seconds	29 seconds	
Link-16 Net Entry/Synchronization					
N/A	<=30 seconds	Not to exceed 4 min from time that coarse sync is initiated	30 sec - 2.5 min	30 sec - 2.5 min	
Crypto-Rekeying					
N/A	Over the Air Rekeying (OTAR) through electronic media, or common reprogramming hardware / software	At O-level	MIDS JTRS CMN-4 demonstrated Objective during qualification testing. Not yet implemented by platform in operational environment.	OTAR through electronic media, or common reprogramming hardware/software	(Ch-2)
Link-16 Transmission of Unit Position and Status Reports					
N/A	<=100 ft accuracy	<=300 ft accuracy	78 ft	78 ft	
TACAN Performance Start-up/Restart					
N/A	<=14 seconds	<=30 seconds	15 seconds	15 seconds	
MFHBOMF (System/Single Channel)					
N/A	>=36 hrs (Other Platforms)	>=25 hrs (F/A-18E/F, EA-18G, TACAIR)	36.5 hrs.	36.5 hrs	
MTBF Lab (Ch. 1(Link-16))					
N/A	>=1800 hrs	>= 1200 hrs	1285 hrs	1285 hrs	
MTBF Lab (Ch. 2, 3 & 4)					

N/A	>=1800 hrs	>=1550 hrs	1550 hrs	1550 hrs
MFHBOMF (Terminal/Single Channel)				
N/A	>=300 hrs	>=220 hrs	724 (includes lab data)	220 hrs
MCMTOMF (Single Channel)				
N/A	<= 60 min	<=120 min; <= 90 min (F/A -18 E/F, EA-18G, NAVAIR)	60 min	60 min (Single channel)
MRT				
N/A	<= 20 min	<= 45 min	20 min	45 min
BIT PCD				
N/A	PCD>= 98%	PCD>= 95%	97%	97%
BIT MFHBFA				
N/A	MFHBFA: >= 451 hrs	MFHBFA: >= 113 hrs	80 hrs	120 hrs
Start-Up (Terminal/Single Channel)				
N/A	<=2min (OE, crypto and waveform); <=2min (fine sync)	<=3.5min (OE, Crypto and waveform); <=4min (fine sync)	3.2 min	3.2 min
Start-Up (Waveform/Link-16 only)				
N/A	<=2min (OE, crypto, and waveform); <=2min (fine sync)	<=3.5min (OE, crypto, and waveform); <=4min (fine sync)	.5 - 2.5 min	.5 - 2.5 min
Restart < 50 milliseconds (Core configuration only)				
N/A	Operates through	(T=O) Operates through	Operates through	Operates through
Restart <10 seconds (Terminal)				
N/A	<=2min	<=3.5min	2.5 min	2.5 min
Restart <10 seconds (Link-16 waveform)				
N/A	<=10sec	(T=O) <=10sec	9 sec	9 sec
Restart >=10 seconds and <2min (Terminal)				
N/A	<=2min	<=3.5min	3.2 min	3.2 min
Restart >=10 seconds and <2min (Link-16)				
N/A	<=2min	<=4min	3.2 min	3.2 min
Restart >= 2 min (Terminal)				
N/A	<=2min	<=3.5min	3.2 min	3.2 min
Restart >=2 min (Link-16 Waveform)				
N/A	<=2min	<=4min	3.2 min	3.2 min
TACAN Start-up/Restart				
N/A	<=14sec	<=30sec	15 sec	15 sec
IBIT Performance				
N/A	<=30sec	<=70sec	30 sec	30 sec

Terminal Operating Frequency Range				
N/A	Operate 2-2000 MHz	(T=O) Operate 2-2000 MHz	Operation within 2-2000 MHz	Operate 2-2000 MHz
MIDS JTRS Capability				
N/A	F3I for MIDS-LVT (1) and shall meet the performance measures in MIDS JTRS Core Terminal in Table 6 of the CPD in addition to TACAN and J-Voice.	(T=O) F3I for MIDS-LVT (1) and shall meet the performance measures in MIDS JTRS Core Terminal in Table 6 of the CPD in addition to TACAN and J-Voice.	11 of 11 Performance measures have been achieved in a Developmental Test period.	11 of 11 Performance measures have been achieved in a Developmental Test period.
Functionality				
N/A	MIDS JTRS Core Terminal will meet connectivity requirements of ALL Airborne (MIDS JTRS) Domain Waveforms.	The MIDS JTRS Core Terminal shall be capable of supporting secure and non-secure voice, video, and data communications by porting narrowband and wideband JTRS developed waveforms in compliance with the Software Communications Architecture. Where a MIDS JTRS Core Terminal replaces the WF/radio function(s) of one or more legacy radios and continued interoperability with legacy radios is required, software WFs will be ported and JTRS radio shall perform the same WF/radio function(s) and mission(s) supported by the legacy radios. JTRS Core Terminal will meet connectivity requirements of ported Waveforms.	15 of 15 Performance measures have been achieved.	15 of 15 Performance measures have been achieved.
Number of Channels				
N/A	Threshold same as Objective (One TACAN/Link-16 plus three additional channels for JTRS Waveforms).	One TACAN/Link-16 plus three additional channels for JTRS Waveforms. Navy Initial Implementation - TACAN/Link-16 plus 3 additional channels ((2MHz - 2 GHz transceivers) as capability for future JTRS WFs) for F/A-18E/F. USAF Initial Implementation - Link -16 for B-1.	1 of 1 Performance measures have been achieved.	1 of 1 Performance measures have been achieved.

Net Ready				
N/A	<p>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 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 31), 3)NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and issuance of an IATO 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 reviews.</p>	<p>The MIDS JTRS Core Terminal will support Net-Centric military operations via a gateway. 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 systems must have the ability to provide survivable, interoperable, secure and operationally effective information exchanges to enable a Net-centric military capability. 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 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 31), 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authentication, confidentiality, and non-repudiation, and 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 reviews.</p>	<p>5 of 5 Performance measures have been achieved. System certified by NSA in March 2010</p>	<p>5 of 5 Performance measures have been achieved. System certified by NSA in March 2010.</p>

Operational Availability (Ao)				
N/A	Each MIDS JTRS Core Terminal shall demonstrate an Ao of >0.99 for all channels.	Each MIDS JTRS Core Terminal shall demonstrate an Ao of >0.90 for Link-16 / TACAN Channel and >0.96 for the remaining channels.	96.8%.	96.8%
Software Configurable				
N/A	Each MIDS JTRS Core Terminal shall provide any designated operator with the ability to load and reconfigure its modes/ capabilities via software while in the operational environment	(T=O) Each MIDS JTRS Core Terminal shall provide any designated operator with the ability to load and reconfigure its modes/ capabilities via software while in the operational environment	1 of 1 Performance measures have been achieved.	1 of 1 Performance measures have been achieved.
Growth				
N/A	MIDS JTRS Core Terminal shall provide an internal growth capability through an open systems architecture approach, and shall be modular, scaleable and flexible as designed to suit specific operational requirements.	(T=O) MIDS JTRS Core Terminal shall provide an internal growth capability through an open systems architecture approach, and shall be modular, scaleable and flexible as designed to suit specific operational requirements.	2 of 2 Performance measures achieved.	2 of 2 Performance measures achieved.
Navigation – Link-16 Position (PPLI)				
N/A	=100 feet	=300 feet	Operation at ≤100 feet	≤100 feet
Tactical Air Navigation (TACAN)				
N/A	Capabilities equivalent to LVT	(T=O) Capabilities equivalent to LVT	Capabilities equivalent to LVT	Capabilities equivalent to LVT
Spectrum Certification				
N/A	Meets DD-1494 Stage 4	(T=O) Meets DD-1494 Stage 4	DD-1494 Stage 4 issued.	Meets DD-1494 Stage 4
Memory/Processor Reserve				
N/A	Provide growth memory and processor reserve to allow for an increased capability or functionality of each set and with each generation of radios	(T=O) Provide growth memory and processor reserve to allow for an increased capability or functionality of each set and with each generation of radios	Met with no issues.	Provide growth memory and processor reserve to allow for an increased capability or functionality of each set and with each generation of

				radios
Operational Communications				
Passive Synchronization				
N/A	Fine Sync achieved passively	(T=O) Fine Sync achieved passively	Achieved Fine Sync passively	Fine Sync achieved passively
Automatic Message Acknowledgement				
N/A	IAW Mil-STD 6016C	(T=O) IAW Mil-STD 6016C	Automatic Message Acknowledgement IAW Mil-STD 6016C	IAW Mil-STD 6016C
Crypto Control (CTP-11)				
N/A	Proper O-level control of NSA approved crypto device	(T=O) Proper O-level control of NSA approved crypto device	Proper O-level control of NSA approved crypto device	Proper O-level control of NSA approved crypto device
Multi-Net (CTP-10)/8d				
N/A	2 simultaneous nets	(T=O) 2 simultaneous nets	Performance of two simultaneous nets	2 simultaneous nets
GIG Requirements				
N/A	DISR mandated GIG requirements specified in TV-1 of ISP	(T=O) DISR mandated GIG requirements specified in TV-1 of ISP	Met DISR mandated GIG requirements specified in TV-1 of ISP	DISR mandated GIG requirements specified in TV-1 of ISP
Key Information Profile (KIP)				
N/A	DISA mandated GIG KIPs are identified in ISP in the KIP Declaration Table	(T=O) DISA mandated GIG KIPs are identified in ISP in the KIP Declaration Table	The DISA mandated GIG KIPs are identified in the ISP in the KIP Declaration Table	DISA mandated GIG KIPs are identified in ISP in the KIP Declaration Table
Design per NCOW RM				
N/A	NCOW RM Enterprise Services are met	(T=O) NCOW RM Enterprise Services are met	The NCOW RM Enterprise Services are met	NCOW RM Enterprise Services are met
Information Exchange Requirements met				
N/A	Operationally Effective exchanges of all messages IAW ISP	(T=O) Operationally Effective exchanges of all messages IAW ISP	Showed Operationally Effective exchange of all messages IAW ISP	Operationally Effective exchanges of all messages IAW ISP
Enable CMN/CCR Reception				
N/A	Receive on 4 net numbers (CMN); 4	(T=O) Receive on 4 net numbers (CMN); 4	MIDS JTRS CMN-4 demonstrated	Receive 4 net numbers (CMN); 4

(Ch-2)

	receptions within a timeslot (CCR)	receptions within a timeslot (CCR)	Objective during qualification testing.	receptions within a timeslot (CCR)
--	------------------------------------	------------------------------------	---	------------------------------------

Requirements Reference

MIDS ORD (MIDS-LVT) dated July 25, 2004 and MIDS JTRS CPD dated July 16, 2013

Change Explanations

(Ch-1) MIDS-LVT BU2 Enhancement completed development and formal qualification testing. All relevant performance parameter objectives have been demonstrated and met.

(Ch-2) MIDS JTRS CMN-4 IOC was declared in May 2019 after successfully demonstrating all performance parameter objectives have been met.

Acronyms and Abbreviations

AFCAA - Air Force Cost Analysis Agency
 Ao - Operational Availability
 ASN (RD&A) - Assistant Secretary of the Navy for Research, Development & Acquisition
 ATO - Authority to Operate
 BIT - Built in Test
 BU2 - Block Upgrade 2
 C2 - Command and Control
 CFAQT - Contractor First Article Qualification Testing
 CMEP - Coded Message Error Probability
 CMN/CCR - Concurrent Multi-Netting/Concurrent Contention Receive
 CMN-4 - Four Net Concurrent Multi-Netting with Concurrent Contention Receive
 CPFF - Cost Plus Fixed Fee
 cu. ft. - cubic feet
 DAA - Designated Approving Authority
 db - decibel(s)
 DISR - Defense Information Standards Registry
 ECP - Engineering Change Proposal
 ET - Enhanced Throughput
 F3I - Form, Fit, Function and interface
 FDL - Fighter Data Link
 FFP - Firm Fixed Price
 FOT&E - Follow-on Test and Evaluation
 FP&F - Full Production & Fielding
 GFAQT - Government First Article Qualification Testing
 GIG IT - Global Information Grid Information Technology
 HPA - High Power Amplifier
 hr - hour(s)
 IATO - Interim Authority to Operate
 IBIT - Initialization Built in Test
 IDIQ - Indefinite Delivery Indefinite Quantity
 IER - Information Exchange Requirements
 IF - Interface
 JITC - Joint Interoperability Test Command
 JTIDS - Joint Tactical Information Distribution System
 JTRS - Joint Tactical Radio System
 kbps - kilobits per second
 KIPs - Key Interface Profiles
 lbs - Pounds
 LET - Link 16 Enhanced Throughput
 LOS - Line of sight
 LVT - Low Volume Terminal
 MCMTOMF - Mean Corrective Maintenance Time for Operational Mission Failures
 MFHBFA - Mean Flight Hours Between False Alarms
 MFHBOMF - Mean Flight Hours Between Operational Mission Failures
 MHz - Megahertz
 MIDS - Multifunctional Information Distribution System
 Mil-Std - Military Standard
 min - minute(s)
 MJCS - Memorandum Joint Chiefs of Staff
 MRT - Mean Repair Time
 MTBF - Mean Time Between Failure
 MTBOMF - Mean Time Between Operational Mission Failures

MTTR - Mean Time to Repair
NCOW RM - Net-Centric Operations and Warfare Reference Model
nm, nmi - Nautical mile
NSA - National Security Agency
OE - Operational Environment
O-Level - Organization Level
OTAR - Over the Air Re-keying
PAC4 - Packed-4
PCD - Percent Correct Detect
RMD - Resource Management Decision
sec - second(s)
SINGARS - Single Channel Ground and Airborne Radio System
SMORD - Single MIDS ORD
SSS - System Segment Specification
STANAG - Standardization Agreement
TACAN - Tactical Air Navigation
TTNT - Tactical Targeting Network Technology
TV - Technical View
w - watt(s)

Track to Budget

General Notes

The current RDT&E increased to fund MIDS Joint Tactical Radio System (JTRS) Modernization Increment 2 (MMI2); Front Panel Loading; upgrades to special test equipment to be WIN10 compliant; and documentation upgrades to comply with NSA's new IA software requirements documentation.

The current production terminal quantity estimate cumulatively increased by a total of 1,811 (191 Development/1,617 Procurement) terminals (from current Change 5 APB) due to a procurement orders from the U.S. Air Force. This represents an increase of 70 Development/1,057 Procurement terminals from previous SAR.

RDT&E

Appn	BA	PE		
Navy	1319	07	0205604N	
			Project	Name
			2126	ATDLS Integration (Shared) (Sunk)
Navy	1319	05	0205604N	
			Project	Name
			2126	ATDLS Integration (Shared) (Sunk)
Navy	1319	07	0205604N	
			Project	Name
			3020	MIDS/JTRS (Shared) (Sunk)
			Notes:	In FY 2019
Navy	1319	05	0604234N	
			Project	Name
			3051	E-2D Advanced Hawkeye (Shared) (Sunk)
Navy	1319	05	0604270N	
			Project	Name
			0556	EW Counter Response (Shared) (Sunk)
			2781	Navy EA-6B Integration/EA-6B (Shared) (Sunk)
			E0556	EA-6B Integration/EA-6B (Shared) (Sunk)
			E2781	EA-6B Integration/EA-6B (Shared) (Sunk)
Navy	1319	05	0604280N	
			Project	Name
			3020	MIDS/JTRS (Shared)
			Notes:	In FY 2020 PB MIDS RDT&E Funding moved from PE 025604N to 0604280N (Project 3020 for both).
			3073	AMF/JTRS (Shared) (Sunk)
Army	2040	05	0603713A	
			Project	Name
			D370	Army MIDS (Shared) (Sunk)
Army	2040	05	0604280A	
			Project	Name

	162		Network Enterprise Domain (NED)	(Shared) (Sunk)
Air Force	3600	07	0101126F	
	Project		Name	
	675344		B-1B Squadrons	(Shared)
Air Force	3600	07	0101127F	
	Project		Name	
	675345		B-2 Modernization	(Shared) (Sunk)
Air Force	3600	05	0207130F	
	Project		Name	
	F15		Air Force MIDS/F-15C/D	(Shared) (Sunk)
Air Force	3600	05	0207133F	
	Project		Name	
	672671		Air Force MIDS/F-16	(Shared) (Sunk)
Air Force	3600	07	0207133F	
	Project		Name	
	672671		F-16 Squadrons	(Shared)
Air Force	3600	05	0207134F	
	Project		Name	
	674703		Air Force MIDS/F-15E	(Shared) (Sunk)
Air Force	3600	07	0207134F	
	Project		Name	
	676020		F-15 Squadrons	(Shared)
Air Force	3600	07	0207138F	
	Project		Name	
	674788		F-22 Squadrons	(Shared)
Air Force	3600	07	0207417F	
	Project		Name	
	67411L		Airborne Warning and Control System (AWACS)	(Shared) (Sunk)
Air Force	3600	07	0207448F	
	Project		Name	
	675045		C2ISR Tactical Data Link	(Shared) (Sunk)
Air Force	3600	07	0208006F	
	Project		Name	
	675380		Mission Planning Systems	(Shared)
Air Force	3600	07	0305207F	
	Project		Name	
	674754		Manned Reconnaissance Systems	(Shared) (Sunk)
Air Force	3600	05	0604240F	
	Project		Name	
	11B002		Air Force MIDS	(Shared) (Sunk)

Air Force	3600	05	0604280F		
	Project		Name		
	655068		Joint Tactical Radio System (JTRS)	(Shared)	(Sunk)
Air Force	3600	05	0604281F		
	Project		Name		
	655050		TLC System Integration	(Shared)	(Sunk)
Defense-Wide	0400	05	0603883C		
	Project		Name		
	0010		DOD	(Shared)	(Sunk)
Defense-Wide	0400	04	0604250D		
	Project		Name		
	P250		Advanced Innovative Technologies	(Shared)	(Sunk)
Defense-Wide	0400	05	0604771D		
	Project		Name		
	P771		OSD, DA/JTRS	(Shared)	(Sunk)
	P773		OSD, DA/Multifunctional Information Distribution System	(Shared)	(Sunk)

Procurement

	Appn	BA	PE		
Navy	1506	01	0204136N		
	Line Item		Name		
	0145		F/A-18E/F (Fighter) Hornet	(Shared)	(Sunk)
Navy	1506	05	0204154N		
	Line Item		Name		
	0511		EA-6 Series	(Shared)	
Navy	1506	05	0204136N		
	Line Item		Name		
	0525		F-18 Series	(Shared)	
Navy	1506	05	0204152N		
	Line Item		Name		
	0544		E-2 Series	(Shared)	(Sunk)
Navy	1611	02	0204112N		
	Line Item		Name		
	2001		Carrier Replacement Program	(Shared)	
	2086		Multi-Purpose CVNs	(Shared)	(Sunk)
Navy	1611	02	0204222N		
	Line Item		Name		
	2122		DDG-51	(Shared)	
Navy	1611	02	0204230N		

	Line Item	Name	
	2127	Littoral Combat Ship	(Shared)
Navy	1611 03	0204411N	
	Line Item	Name	
	3035	Amphibious Assault Ships	(Shared) (Sunk)
	3036	LPD-17	(Shared)
Navy	1611 05	0204411N	
	Line Item	Name	
	5110	Outfitting	(Shared)
Navy	1810 02	0205604N	
	Line Item	Name	
	2614	Advanced Tactical Data Link System	(Shared)
Army	2035 02	0214400A	
	Line Item	Name	
	B22603	Radio Terminal Set, MIDS-LVT (2)	(Shared)
Air Force	3010 05	0207446F	
	Line Item	Name	
	B00200	B-2A	(Shared)
Air Force	3010 05	0207130F	
	Line Item	Name	
	F01500	F-15	(Shared) (Sunk)
Air Force	3010 07	0207132F	
	Line Item	Name	
	F01500	F-15	(Shared)
Air Force	3010 05	0207133F	
	Line Item	Name	
	F01600	F-16	(Shared)
Air Force	3010 07	0207133F	
	Line Item	Name	
	F0160P	F-16	(Shared) (Sunk)
Air Force	3010 05	0207423F	
	Line Item	Name	
	MN9860	Joint Tactical Radio System	(Shared)
Air Force	3010 05	0207133F	
	Line Item	Name	
	OTHACF	Other Aircraft	(Shared)
	Notes: Battlefield ABN Comm Node (BACN)		
Air Force	3080 03	0207448F	
	Line Item	Name	
	831010	Comsec Equipment	(Shared)
	834010	General Information	(Shared)

Technology			
Air Force	3080	03	0401840F
	Line Item	Name	
	834070	AMC Command and Control (Shared)	
Air Force	3080	03	0201131F
	Line Item	Name	
	835140	Air Combat Command Communication (Shared)	
	Notes:	AFCENT	
Air Force	3080	02	0207133F
	Line Item	Name	
	F01600	F-16	(Shared) (Sunk)
Defense-Wide	0300	02	
	Line Item	Name	
	10	DOD	(Shared) (Sunk)
Defense-Wide	0300	02	0208865C
	Line Item	Name	
	2257	DA, Patriot (Shared) (Sunk)	
Defense-Wide	0300	02	0208861C
	Line Item	Name	
	2260	DA, THAAD (Shared) (Sunk)	
Defense-Wide	0300	02	
	Line Item	Name	
	30	GAPO (Shared) (Sunk)	
Defense-Wide	0350	01	
	Line Item	Name	
	022005	Air National Guard (Shared) (Sunk)	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2003 \$M			BY 2003 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	869.4	1849.9	2034.9	2053.1 ¹	825.8	2029.7	2327.1
Procurement	955.4	2220.5	2442.6	2392.2	993.1	2756.2	2990.0
Flyaway	--	--	--	2233.1	--	--	2819.2
Recurring	--	--	--	2160.5	--	--	2747.8
Non Recurring	--	--	--	72.6	--	--	71.4
Support	--	--	--	159.1	--	--	170.8
Other Support	--	--	--	37.6	--	--	41.8
Initial Spares	--	--	--	121.5	--	--	129.0
MILCON	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
Total	1824.8	4070.4	N/A	4445.3	1818.9	4785.9	5317.1

¹ APB Breach

Current APB Cost Estimate Reference

The generated point estimate is based on the developed Cost Estimating Relationships (CERs) and inputted sunk costs, dated July 25, 2017

Cost Notes

RDT&E costs include the MIDS Low Volume Terminal (MIDS-LVT) and MIDS Joint Tactical Radio System (MIDS JTRS) terminal development, terminal acquisition, integration and test on the U.S. Navy platforms for all current MIDS Program Management Office enhancement efforts.

Procurement costs are for MIDS-LVT and MIDS JTRS terminals purchased by the platforms.

The costs of platform installation and platform kits, and U.S. Air Force and U.S. Army platform integration and testing of MIDS-LVT and MIDS JTRS are to be included in the respective budgets and baseline agreements of the various platforms implementing MIDS.

Independent NAVAIR 4.2 Cost Estimates are prepared annually.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	143	659	850
Procurement	2821	8469	10086
Total	2964	9128	10936

Quantity Notes

The unit of measure is terminals.

Procurement quantities include MIDS terminals for U.S. Navy, U.S. Air Force, and U.S. Army platforms. The current estimate includes MIDS JTRS procurement quantities for the Phase 2B Core terminals, Four Net Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4), and Tactical Targeting Network Technology (TTNT).

Procurement budgets include funding to upgrade terminals, e.g. make a Core terminal CMN-4 capable, CMN-4 to TTNT, and MIDS-LVT to BU2. However, these terminals are not included in future quantity counts as they have already been accounted for when they were initially procured.

The current production terminal procurement estimate increased by a total of 1,811 (191 Development/1,617 Procurement) terminals from Change 5 APB Production Quantity due to procurement orders from the U.S. Navy and Air Force.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2021 President's Budget / December 2019 SAR (TY\$ M)									
Appropriation	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
RDT&E	1992.7	39.2	82.6	64.0	65.8	52.5	30.3	0.0	2327.1
Procurement	2249.5	288.6	157.2	130.6	61.8	41.4	45.1	15.8	2990.0
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 2021 Total	4242.2	327.8	239.8	194.6	127.6	93.9	75.4	15.8	5317.1
PB 2020 Total	4198.2	300.3	235.0	199.5	114.2	79.4	33.5	29.7	5189.8
Delta	44.0	27.5	4.8	-4.9	13.4	14.5	41.9	-13.9	127.3

Quantity Summary										
FY 2021 President's Budget / December 2019 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Development	850	0	0	0	0	0	0	0	0	850
Production	0	7996	849	446	364	159	122	148	2	10086
PB 2021 Total	850	7996	849	446	364	159	122	148	2	10936
PB 2020 Total	780	7718	510	410	308	58	11	13	1	9809
Delta	70	278	339	36	56	101	111	135	1	1127

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
0400 RDT&E Research, Development, Test, and Evaluation, Defense-Wide							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1990	--	--	--	--	--	--	9.0
1991	--	--	--	--	--	--	5.0
1992	--	--	--	--	--	--	16.5
1993	--	--	--	--	--	--	23.9
1994	--	--	--	--	--	--	23.3
1995	--	--	--	--	--	--	49.6
1996	--	--	--	--	--	--	42.7
1997	--	--	--	--	--	--	36.9
1998	--	--	--	--	--	--	45.2
1999	--	--	--	--	--	--	27.9
2000	--	--	--	--	--	--	39.0
2001	--	--	--	--	--	--	12.0
2002	--	--	--	--	--	--	13.1
2003	--	--	--	--	--	--	7.7
2004	--	--	--	--	--	--	7.0
2005	--	--	--	--	--	--	9.6
2006	--	--	--	--	--	--	1.0
2007	--	--	--	--	--	--	2.0
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	0.8
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	0.2
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	0.3
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	0.7
2019	--	--	--	--	--	--	1.1
Subtotal	75	--	--	--	--	--	374.5

Annual Funding							
0400 RDT&E Research, Development, Test, and Evaluation, Defense-Wide							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1990	--	--	--	--	--	--	11.1
1991	--	--	--	--	--	--	5.9
1992	--	--	--	--	--	--	19.1
1993	--	--	--	--	--	--	27.2
1994	--	--	--	--	--	--	26.0
1995	--	--	--	--	--	--	54.3
1996	--	--	--	--	--	--	45.9
1997	--	--	--	--	--	--	39.2
1998	--	--	--	--	--	--	47.6
1999	--	--	--	--	--	--	29.0
2000	--	--	--	--	--	--	40.0
2001	--	--	--	--	--	--	12.1
2002	--	--	--	--	--	--	13.1
2003	--	--	--	--	--	--	7.6
2004	--	--	--	--	--	--	6.7
2005	--	--	--	--	--	--	9.0
2006	--	--	--	--	--	--	0.9
2007	--	--	--	--	--	--	1.8
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	0.7
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	0.2
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	0.2
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	0.5
2019	--	--	--	--	--	--	0.8
Subtotal	75	--	--	--	--	--	398.9

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1990	--	--	--	--	--	--	2.9
1991	--	--	--	--	--	--	4.7
1992	--	--	--	--	--	--	10.0
1993	--	--	--	--	--	--	12.4
1994	--	--	--	--	--	--	23.0
1995	--	--	--	--	--	--	18.4
1996	--	--	--	--	--	--	31.0
1997	--	--	--	--	--	--	28.2
1998	--	--	--	--	--	--	39.8
1999	--	--	--	--	--	--	45.4
2000	--	--	--	--	--	--	62.3
2001	--	--	--	--	--	--	37.7
2002	--	--	--	--	--	--	26.2
2003	--	--	--	--	--	--	16.8
2004	--	--	--	--	--	--	22.4
2005	--	--	--	--	--	--	27.6
2006	--	--	--	--	--	--	98.2
2007	--	--	--	--	--	--	162.5
2008	--	--	--	--	--	--	77.2
2009	--	--	--	--	--	--	26.6
2010	--	--	--	--	--	--	16.2
2011	--	--	--	--	--	--	24.2
2012	--	--	--	--	--	--	100.8
2013	--	--	--	--	--	--	47.2
2014	--	--	--	--	--	--	120.7
2015	--	--	--	--	--	--	80.5
2016	--	--	--	--	--	--	71.0
2017	--	--	--	--	--	--	68.0
2018	--	--	--	--	--	--	46.4
2019	--	--	--	--	--	--	47.0
2020	--	--	--	--	--	--	39.2
2021	--	--	--	--	--	--	82.6
2022	--	--	--	--	--	--	64.0
2023	--	--	--	--	--	--	65.8
2024	--	--	--	--	--	--	52.5
2025	--	--	--	--	--	--	30.3
Subtotal	271	--	--	--	--	--	1729.7

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1990	--	--	--	--	--	--	3.6
1991	--	--	--	--	--	--	5.6
1992	--	--	--	--	--	--	11.6
1993	--	--	--	--	--	--	14.1
1994	--	--	--	--	--	--	25.6
1995	--	--	--	--	--	--	20.1
1996	--	--	--	--	--	--	33.3
1997	--	--	--	--	--	--	30.0
1998	--	--	--	--	--	--	41.9
1999	--	--	--	--	--	--	47.3
2000	--	--	--	--	--	--	63.9
2001	--	--	--	--	--	--	38.2
2002	--	--	--	--	--	--	26.3
2003	--	--	--	--	--	--	16.6
2004	--	--	--	--	--	--	21.5
2005	--	--	--	--	--	--	25.8
2006	--	--	--	--	--	--	89.2
2007	--	--	--	--	--	--	144.0
2008	--	--	--	--	--	--	67.2
2009	--	--	--	--	--	--	22.9
2010	--	--	--	--	--	--	13.7
2011	--	--	--	--	--	--	20.0
2012	--	--	--	--	--	--	82.0
2013	--	--	--	--	--	--	38.0
2014	--	--	--	--	--	--	95.8
2015	--	--	--	--	--	--	63.1
2016	--	--	--	--	--	--	54.7
2017	--	--	--	--	--	--	51.4
2018	--	--	--	--	--	--	34.3
2019	--	--	--	--	--	--	34.0
2020	--	--	--	--	--	--	27.8
2021	--	--	--	--	--	--	57.5
2022	--	--	--	--	--	--	43.7
2023	--	--	--	--	--	--	44.0
2024	--	--	--	--	--	--	34.4
2025	--	--	--	--	--	--	19.5
Subtotal	271	--	--	--	--	--	1462.6

In the 2018 SAR, RDTE quantity of 24 was erroneously missing from 1319 quantity total (although the quantity were listed in the Variance section for 1319 of the 2018 SAR).

Annual Funding							
2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	0.5
1998	--	--	--	--	--	--	2.4
1999	--	--	--	--	--	--	5.2
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	0.1
2002	--	--	--	--	--	--	3.1
2003	--	--	--	--	--	--	0.6
2004	--	--	--	--	--	--	3.1
2005	--	--	--	--	--	--	4.4
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	1.5
2008	--	--	--	--	--	--	1.9
2009	--	--	--	--	--	--	3.3
2010	--	--	--	--	--	--	0.2
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	0.2
2013	--	--	--	--	--	--	0.4
2014	--	--	--	--	--	--	0.2
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	0.2
Subtotal	79	--	--	--	--	--	27.3

Annual Funding							
2040 RDT&E Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	0.5
1998	--	--	--	--	--	--	2.5
1999	--	--	--	--	--	--	5.4
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	0.1
2002	--	--	--	--	--	--	3.1
2003	--	--	--	--	--	--	0.6
2004	--	--	--	--	--	--	3.0
2005	--	--	--	--	--	--	4.1
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	1.3
2008	--	--	--	--	--	--	1.6
2009	--	--	--	--	--	--	2.8
2010	--	--	--	--	--	--	0.2
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	0.2
2013	--	--	--	--	--	--	0.3
2014	--	--	--	--	--	--	0.2
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	--	--	--	--	--	--
2018	--	--	--	--	--	--	--
2019	--	--	--	--	--	--	0.1
Subtotal	79	--	--	--	--	--	26.0

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	3.9
1998	--	--	--	--	--	--	8.0
1999	--	--	--	--	--	--	0.2
2000	--	--	--	--	--	--	6.3
2001	--	--	--	--	--	--	3.9
2002	--	--	--	--	--	--	2.9
2003	--	--	--	--	--	--	4.3
2004	--	--	--	--	--	--	14.3
2005	--	--	--	--	--	--	19.6
2006	--	--	--	--	--	--	4.5
2007	--	--	--	--	--	--	2.2
2008	--	--	--	--	--	--	1.4
2009	--	--	--	--	--	--	5.7
2010	--	--	--	--	--	--	1.5
2011	--	--	--	--	--	--	2.4
2012	--	--	--	--	--	--	2.2
2013	--	--	--	--	--	--	3.6
2014	--	--	--	--	--	--	2.6
2015	--	--	--	--	--	--	20.9
2016	--	--	--	--	--	--	14.6
2017	--	--	--	--	--	--	31.7
2018	--	--	--	--	--	--	27.1
2019	--	--	--	--	--	--	11.8
Subtotal	425	--	--	--	--	--	195.6

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1997	--	--	--	--	--	--	4.1
1998	--	--	--	--	--	--	8.4
1999	--	--	--	--	--	--	0.2
2000	--	--	--	--	--	--	6.5
2001	--	--	--	--	--	--	4.0
2002	--	--	--	--	--	--	2.9
2003	--	--	--	--	--	--	4.3
2004	--	--	--	--	--	--	13.8
2005	--	--	--	--	--	--	18.4
2006	--	--	--	--	--	--	4.1
2007	--	--	--	--	--	--	2.0
2008	--	--	--	--	--	--	1.2
2009	--	--	--	--	--	--	4.9
2010	--	--	--	--	--	--	1.3
2011	--	--	--	--	--	--	2.0
2012	--	--	--	--	--	--	1.8
2013	--	--	--	--	--	--	2.9
2014	--	--	--	--	--	--	2.1
2015	--	--	--	--	--	--	16.5
2016	--	--	--	--	--	--	11.3
2017	--	--	--	--	--	--	24.1
2018	--	--	--	--	--	--	20.2
2019	--	--	--	--	--	--	8.6
Subtotal	425	--	--	--	--	--	165.6

Annual Funding 0300 Procurement Procurement, Defense-Wide								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
1999	11	2.7	0.1	4.5	7.3	0.6	7.9	
2000	--	--	--	--	--	--	--	
2001	19	4.8	0.1	--	4.9	1.0	5.9	
2002	--	--	--	--	--	0.3	0.3	
2003	10	2.5	--	--	2.5	0.1	2.6	
2004	--	--	--	--	--	--	--	
2005	4	1.0	--	--	1.0	--	1.0	
2006	--	--	--	--	--	--	--	
2007	--	--	--	--	--	--	--	
2008	--	--	--	--	--	--	--	
2009	--	--	--	--	--	--	--	
2010	7	1.5	--	--	1.5	--	1.5	
2011	5	1.1	--	--	1.1	--	1.1	
2012	--	--	--	--	--	--	--	
2013	--	--	--	--	--	--	--	
2014	2	0.5	--	--	0.5	--	0.5	
2015	--	--	--	--	--	--	--	
2016	--	--	--	--	--	--	--	
2017	3	0.7	--	--	0.7	--	0.7	
2018	9	2.2	--	--	2.2	--	2.2	
2019	12	2.6	--	--	2.6	--	2.6	
Subtotal	82	19.6	0.2	4.5	24.3	2.0	26.3	

Annual Funding 0300 Procurement Procurement, Defense-Wide							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	11	2.8	0.1	4.7	7.6	0.6	8.2
2000	--	--	--	--	--	--	--
2001	19	4.8	0.1	--	4.9	1.0	5.9
2002	--	--	--	--	--	0.3	0.3
2003	10	2.4	--	--	2.4	0.1	2.5
2004	--	--	--	--	--	--	--
2005	4	0.9	--	--	0.9	--	0.9
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	7	1.3	--	--	1.3	--	1.3
2011	5	0.9	--	--	0.9	--	0.9
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	2	0.4	--	--	0.4	--	0.4
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	3	0.5	--	--	0.5	--	0.5
2018	9	1.6	--	--	1.6	--	1.6
2019	12	1.9	--	--	1.9	--	1.9
Subtotal	82	17.5	0.2	4.7	22.4	2.0	24.4

This appropriation provides for the procurement of the MIDS terminals for the DoD.

This appropriation increased by 12 MIDS terminals since the previous SAR.

Annual Funding 1506 Procurement Aircraft Procurement, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	16	5.9	1.3	0.5	7.7	0.3	8.0
2000	58	15.1	1.8	35.5	52.4	8.3	60.7
2001	64	20.2	3.7	0.2	24.1	2.5	26.6
2002	103	23.9	0.5	--	24.4	10.6	35.0
2003	116	22.7	3.6	--	26.3	10.4	36.7
2004	138	27.8	3.2	--	31.0	8.4	39.4
2005	130	25.7	2.9	--	28.6	13.8	42.4
2006	169	31.0	2.9	0.1	34.0	1.8	35.8
2007	169	35.2	3.0	--	38.2	5.2	43.4
2008	202	40.4	2.9	--	43.3	9.4	52.7
2009	127	28.5	2.9	--	31.4	1.0	32.4
2010	174	29.9	0.2	--	30.1	3.9	34.0
2011	147	29.1	0.2	--	29.3	3.9	33.2
2012	128	31.6	0.2	--	31.8	7.5	39.3
2013	262	74.8	--	--	74.8	--	74.8
2014	177	48.7	--	--	48.7	--	48.7
2015	161	45.7	--	--	45.7	--	45.7
2016	696	190.1	--	--	190.1	--	190.1
2017	103	67.4	--	--	67.4	--	67.4
2018	117	61.4	--	--	61.4	--	61.4
2019	72	42.6	--	--	42.6	--	42.6
2020	211	111.8	--	--	111.8	--	111.8
2021	88	65.4	--	--	65.4	--	65.4
2022	69	58.2	--	--	58.2	--	58.2
2023	27	31.6	--	--	31.6	--	31.6
2024	18	18.2	--	--	18.2	--	18.2
2025	5	12.7	--	--	12.7	--	12.7
2026	1	12.1	--	--	12.1	--	12.1
2027	1	3.7	--	--	3.7	--	3.7
Subtotal	3749	1211.4	29.3	36.3	1277.0	87.0	1364.0

Annual Funding 1506 Procurement Aircraft Procurement, Navy							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	16	6.1	1.3	0.5	7.9	0.3	8.2
2000	58	15.3	1.8	36.1	53.2	8.4	61.6
2001	64	20.2	3.8	0.2	24.2	2.5	26.7
2002	103	23.7	0.5	--	24.2	10.4	34.6
2003	116	22.0	3.5	--	25.5	10.1	35.6
2004	138	26.3	3.0	--	29.3	8.0	37.3
2005	130	23.6	2.7	--	26.3	12.7	39.0
2006	169	27.7	2.6	0.1	30.4	1.6	32.0
2007	169	30.8	2.6	--	33.4	4.5	37.9
2008	202	34.8	2.5	--	37.3	8.1	45.4
2009	127	24.2	2.5	--	26.7	0.8	27.5
2010	174	24.9	0.2	--	25.1	3.2	28.3
2011	147	23.7	0.2	--	23.9	3.2	27.1
2012	128	25.4	0.2	--	25.6	6.0	31.6
2013	262	59.5	--	--	59.5	--	59.5
2014	177	38.3	--	--	38.3	--	38.3
2015	161	35.4	--	--	35.4	--	35.4
2016	696	144.2	--	--	144.2	--	144.2
2017	103	50.1	--	--	50.1	--	50.1
2018	117	44.8	--	--	44.8	--	44.8
2019	72	30.5	--	--	30.5	--	30.5
2020	211	78.5	--	--	78.5	--	78.5
2021	88	45.0	--	--	45.0	--	45.0
2022	69	39.3	--	--	39.3	--	39.3
2023	27	20.9	--	--	20.9	--	20.9
2024	18	11.8	--	--	11.8	--	11.8
2025	5	8.1	--	--	8.1	--	8.1
2026	1	7.5	--	--	7.5	--	7.5
2027	1	2.3	--	--	2.3	--	2.3
Subtotal	3749	944.9	27.4	36.9	1009.2	79.8	1089.0

This appropriation identifies the MIDS Low Volume Terminal and MIDS Joint Tactical Radio System Core, Four Net Concurrent Multi-Netting with Concurrent Contention Receive and Tactical Targeting Network Technology that are planned for the Navy.

This appropriation increased by 88 MIDS terminals since the previous SAR.

Annual Funding 1611 Procurement Shipbuilding and Conversion, Navy								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2001	1	0.4	--	--	0.4	--	0.4	
2002	2	0.9	--	--	0.9	--	0.9	
2003	5	2.1	--	--	2.1	--	2.1	
2004	5	0.9	--	--	0.9	--	0.9	
2005	3	0.7	--	--	0.7	--	0.7	
2006	4	0.7	--	--	0.7	--	0.7	
2007	--	--	--	--	--	--	--	
2008	2	0.4	--	--	0.4	--	0.4	
2009	2	0.4	--	--	0.4	--	0.4	
2010	4	0.7	--	--	0.7	--	0.7	
2011	8	1.4	--	--	1.4	--	1.4	
2012	7	1.3	--	--	1.3	--	1.3	
2013	5	0.9	--	--	0.9	--	0.9	
2014	5	0.9	--	--	0.9	--	0.9	
2015	8	1.4	--	--	1.4	--	1.4	
2016	7	1.4	--	--	1.4	--	1.4	
2017	8	1.5	--	--	1.5	--	1.5	
2018	2	0.4	--	--	0.4	--	0.4	
2019	1	0.2	--	--	0.2	--	0.2	
2020	58	12.9	--	--	12.9	--	12.9	
2021	1	1.7	--	--	1.7	--	1.7	
2022	1	2.7	--	--	2.7	--	2.7	
2023	1	1.6	--	--	1.6	--	1.6	
Subtotal	140	35.5	--	--	35.5	--	35.5	

Annual Funding 1611 Procurement Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2001	1	0.4	--	--	0.4	--	0.4
2002	2	0.9	--	--	0.9	--	0.9
2003	5	1.9	--	--	1.9	--	1.9
2004	5	0.8	--	--	0.8	--	0.8
2005	3	0.6	--	--	0.6	--	0.6
2006	4	0.6	--	--	0.6	--	0.6
2007	--	--	--	--	--	--	--
2008	2	0.3	--	--	0.3	--	0.3
2009	2	0.3	--	--	0.3	--	0.3
2010	4	0.5	--	--	0.5	--	0.5
2011	8	0.9	--	--	0.9	--	0.9
2012	7	0.9	--	--	0.9	--	0.9
2013	5	0.6	--	--	0.6	--	0.6
2014	5	0.6	--	--	0.6	--	0.6
2015	8	0.9	--	--	0.9	--	0.9
2016	7	0.9	--	--	0.9	--	0.9
2017	8	0.9	--	--	0.9	--	0.9
2018	2	0.2	--	--	0.2	--	0.2
2019	1	0.1	--	--	0.1	--	0.1
2020	58	7.3	--	--	7.3	--	7.3
2021	1	0.9	--	--	0.9	--	0.9
2022	1	1.5	--	--	1.5	--	1.5
2023	1	0.9	--	--	0.9	--	0.9
Subtotal	140	22.9	--	--	22.9	--	22.9

This appropriation identifies the MIDS on Ship variant for new construction surface ships.

This appropriation increased by 30 MIDS terminals since the previous SAR.

Annual Funding								
1810 Procurement Other Procurement, Navy								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
1999	3	1.1	--	--	1.1	--	1.1	
2000	--	--	--	--	--	--	--	
2001	--	--	--	--	--	--	--	
2002	2	0.5	--	--	0.5	--	0.5	
2003	6	1.7	--	--	1.7	--	1.7	
2004	8	1.8	--	--	1.8	--	1.8	
2005	--	--	--	--	--	0.1	0.1	
2006	8	1.9	--	0.1	2.0	--	2.0	
2007	17	3.8	--	--	3.8	0.6	4.4	
2008	26	6.6	--	--	6.6	--	6.6	
2009	6	1.2	--	--	1.2	--	1.2	
2010	12	2.5	--	--	2.5	--	2.5	
2011	44	9.8	--	--	9.8	--	9.8	
2012	6	1.2	--	--	1.2	--	1.2	
2013	26	7.0	--	--	7.0	--	7.0	
2014	7	1.5	--	--	1.5	--	1.5	
2015	16	3.0	--	--	3.0	--	3.0	
2016	7	7.5	--	--	7.5	--	7.5	
2017	15	6.7	--	--	6.7	--	6.7	
2018	47	10.0	--	--	10.0	--	10.0	
2019	131	34.4	--	--	34.4	--	34.4	
Subtotal	387	102.2	--	0.1	102.3	0.7	103.0	

Annual Funding 1810 Procurement Other Procurement, Navy							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	3	1.1	--	--	1.1	--	1.1
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--
2002	2	0.5	--	--	0.5	--	0.5
2003	6	1.7	--	--	1.7	--	1.7
2004	8	1.7	--	--	1.7	--	1.7
2005	--	--	--	--	--	0.1	0.1
2006	8	1.7	--	0.1	1.8	--	1.8
2007	17	3.3	--	--	3.3	0.6	3.9
2008	26	5.7	--	--	5.7	--	5.7
2009	6	1.0	--	--	1.0	--	1.0
2010	12	2.1	--	--	2.1	--	2.1
2011	44	8.1	--	--	8.1	--	8.1
2012	6	1.0	--	--	1.0	--	1.0
2013	26	5.6	--	--	5.6	--	5.6
2014	7	1.2	--	--	1.2	--	1.2
2015	16	2.3	--	--	2.3	--	2.3
2016	7	5.7	--	--	5.7	--	5.7
2017	15	5.0	--	--	5.0	--	5.0
2018	47	7.3	--	--	7.3	--	7.3
2019	131	24.8	--	--	24.8	--	24.8
Subtotal	387	79.8	--	0.1	79.9	0.7	80.6

This appropriation increased by 159 MIDS terminals since the previous SAR.

Annual Funding							
2035 Procurement Other Procurement, Army							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2001	1	0.3	--	--	0.3	--	0.3
2002	--	--	--	--	--	--	--
2003	4	1.0	--	--	1.0	0.4	1.4
2004	5	1.3	--	--	1.3	0.4	1.7
2005	62	15.7	--	--	15.7	1.2	16.9
2006	67	16.3	--	--	16.3	0.1	16.4
2007	40	9.4	--	--	9.4	1.1	10.5
2008	144	33.5	--	--	33.5	--	33.5
2009	29	6.4	--	--	6.4	2.2	8.6
2010	30	7.0	--	--	7.0	1.6	8.6
2011	22	4.8	--	--	4.8	1.0	5.8
2012	9	2.0	--	--	2.0	0.1	2.1
2013	5	3.3	--	--	3.3	0.4	3.7
2014	--	--	--	--	--	--	--
2015	2	0.1	--	--	0.1	--	0.1
2016	1	8.2	--	--	8.2	--	8.2
2017	1	5.8	--	--	5.8	--	5.8
2018	2	17.1	--	--	17.1	--	17.1
2019	6	6.7	--	--	6.7	--	6.7
2020	1	23.8	--	--	23.8	--	23.8
2021	1	8.2	--	--	8.2	--	8.2
Subtotal	432	170.9	--	--	170.9	8.5	179.4

Annual Funding							
2035 Procurement Other Procurement, Army							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2001	1	0.3	--	--	0.3	--	0.3
2002	--	--	--	--	--	--	--
2003	4	1.0	--	--	1.0	0.4	1.4
2004	5	1.2	--	--	1.2	0.4	1.6
2005	62	14.5	--	--	14.5	1.1	15.6
2006	67	14.7	--	--	14.7	0.1	14.8
2007	40	8.3	--	--	8.3	0.9	9.2
2008	144	29.0	--	--	29.0	--	29.0
2009	29	5.5	--	--	5.5	1.8	7.3
2010	30	5.9	--	--	5.9	1.3	7.2
2011	22	4.0	--	--	4.0	0.8	4.8
2012	9	1.6	--	--	1.6	0.1	1.7
2013	5	2.6	--	--	2.6	0.3	2.9
2014	--	--	--	--	--	--	--
2015	2	0.1	--	--	0.1	--	0.1
2016	1	6.2	--	--	6.2	--	6.2
2017	1	4.3	--	--	4.3	--	4.3
2018	2	12.5	--	--	12.5	--	12.5
2019	6	4.8	--	--	4.8	--	4.8
2020	1	16.7	--	--	16.7	--	16.7
2021	1	5.7	--	--	5.7	--	5.7
Subtotal	432	138.9	--	--	138.9	7.2	146.1

This appropriation provides for the procurement of the Army unique MIDS-LVT(2) and MIDS-LVT(11) variants.

This appropriation decreased by 2 MIDS-LVT terminals since the previous SAR.

Annual Funding								
3010 Procurement Aircraft Procurement, Air Force								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2001	52	8.5	--	4.4	12.9	6.9	19.8	
2002	150	32.5	--	--	32.5	10.2	42.7	
2003	180	36.8	--	--	36.8	10.5	47.3	
2004	137	24.3	--	--	24.3	13.8	38.1	
2005	164	35.5	--	0.1	35.6	4.3	39.9	
2006	129	25.1	--	--	25.1	1.7	26.8	
2007	152	31.1	--	--	31.1	3.4	34.5	
2008	52	14.7	--	--	14.7	4.4	19.1	
2009	15	5.0	--	--	5.0	1.6	6.6	
2010	51	13.0	--	--	13.0	2.4	15.4	
2011	34	9.5	--	--	9.5	0.2	9.7	
2012	83	25.8	--	--	25.8	--	25.8	
2013	43	11.3	--	--	11.3	--	11.3	
2014	61	11.5	--	--	11.5	--	11.5	
2015	5	7.4	--	--	7.4	--	7.4	
2016	3	0.9	--	--	0.9	--	0.9	
2017	175	45.5	--	--	45.5	--	45.5	
2018	550	128.5	--	--	128.5	--	128.5	
2019	660	145.5	--	--	145.5	--	145.5	
2020	579	140.1	--	--	140.1	--	140.1	
2021	356	81.9	--	--	81.9	--	81.9	
2022	294	69.7	--	--	69.7	--	69.7	
2023	131	28.6	--	--	28.6	--	28.6	
2024	104	23.2	--	--	23.2	--	23.2	
2025	143	32.4	--	--	32.4	--	32.4	
Subtotal	4303	988.3	--	4.5	992.8	59.4	1052.2	

Annual Funding								
3010 Procurement Aircraft Procurement, Air Force								
Fiscal Year	Quantity	BY 2003 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2001	52	8.5	--	4.4	12.9	7.0	19.9	
2002	150	32.2	--	--	32.2	10.1	42.3	
2003	180	35.9	--	--	35.9	10.2	46.1	
2004	137	23.1	--	--	23.1	13.1	36.2	
2005	164	32.8	--	0.1	32.9	3.9	36.8	
2006	129	22.6	--	--	22.6	1.5	24.1	
2007	152	27.2	--	--	27.2	3.0	30.2	
2008	52	12.7	--	--	12.7	3.8	16.5	
2009	15	4.2	--	--	4.2	1.4	5.6	
2010	51	10.8	--	--	10.8	2.0	12.8	
2011	34	7.8	--	--	7.8	0.1	7.9	
2012	83	20.8	--	--	20.8	--	20.8	
2013	43	8.9	--	--	8.9	--	8.9	
2014	61	9.0	--	--	9.0	--	9.0	
2015	5	5.7	--	--	5.7	--	5.7	
2016	3	0.7	--	--	0.7	--	0.7	
2017	175	33.6	--	--	33.6	--	33.6	
2018	550	92.9	--	--	92.9	--	92.9	
2019	660	103.1	--	--	103.1	--	103.1	
2020	579	97.4	--	--	97.4	--	97.4	
2021	356	55.8	--	--	55.8	--	55.8	
2022	294	46.6	--	--	46.6	--	46.6	
2023	131	18.7	--	--	18.7	--	18.7	
2024	104	14.9	--	--	14.9	--	14.9	
2025	143	20.4	--	--	20.4	--	20.4	
Subtotal	4303	746.3	--	4.5	750.8	56.1	806.9	

This appropriation identifies the MIDS Low Volume Terminal and MIDS Joint Tactical Radio System terminals that are planned for the Air Force.

This appropriation increased by 677 MIDS terminals since the previous SAR.

Annual Funding 3080 Procurement Other Procurement, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	6	3.0	--	--	3.0	--	3.0
1997	--	--	--	0.3	0.3	--	0.3
1998	77	18.5	--	15.2	33.7	1.0	34.7
1999	173	33.0	0.3	--	33.3	2.1	35.4
2000	294	49.8	0.7	0.5	51.0	3.8	54.8
2001	148	26.7	0.6	4.4	31.7	1.0	32.7
2002	97	18.6	--	5.6	24.2	--	24.2
2003	30	0.4	--	--	0.4	5.3	5.7
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	1	0.3	--	--	0.3	--	0.3
2016	9	2.1	--	--	2.1	--	2.1
2017	13	3.1	--	--	3.1	--	3.1
2018	49	11.2	--	--	11.2	--	11.2
2019	43	9.3	--	--	9.3	--	9.3
Subtotal	940	176.0	1.6	26.0	203.6	13.2	216.8

Annual Funding 3080 Procurement Other Procurement, Air Force							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	6	3.2	--	--	3.2	--	3.2
1997	--	--	--	0.3	0.3	--	0.3
1998	77	19.2	--	15.8	35.0	1.0	36.0
1999	173	33.8	0.3	--	34.1	2.2	36.3
2000	294	50.3	0.7	0.5	51.5	3.9	55.4
2001	148	26.6	0.6	4.3	31.5	1.0	32.5
2002	97	18.2	--	5.5	23.7	--	23.7
2003	30	0.4	--	--	0.4	5.2	5.6
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	1	0.2	--	--	0.2	--	0.2
2016	9	1.6	--	--	1.6	--	1.6
2017	13	2.4	--	--	2.4	--	2.4
2018	49	8.4	--	--	8.4	--	8.4
2019	43	6.8	--	--	6.8	--	6.8
Subtotal	940	171.1	1.6	26.4	199.1	13.3	212.4

This appropriation identifies the MIDS Fighter Data Link (FDL) terminals for the Air Force that are being procured on a separate contract. The FY 1996 funding (TY \$3.0M) reports the U.S. Air Force funds contributed to the qualification and build of six FDL terminals. Additional funds in excess of \$8.0M were contributed by the contractor, Data Link Solutions L.L.C., for completion of the full qualification program requirements.

This appropriation increased by 65 MIDS terminals since the previous SAR.

Annual Funding							
0350 Procurement National Guard and Reserve Equipment ,Defense							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	15	3.8	--	--	3.8	--	3.8
2017	14	3.2	--	--	3.2	--	3.2
2018	20	4.5	--	--	4.5	--	4.5
2019	4	1.3	--	--	1.3	--	1.3
Subtotal	53	12.8	--	--	12.8	--	12.8

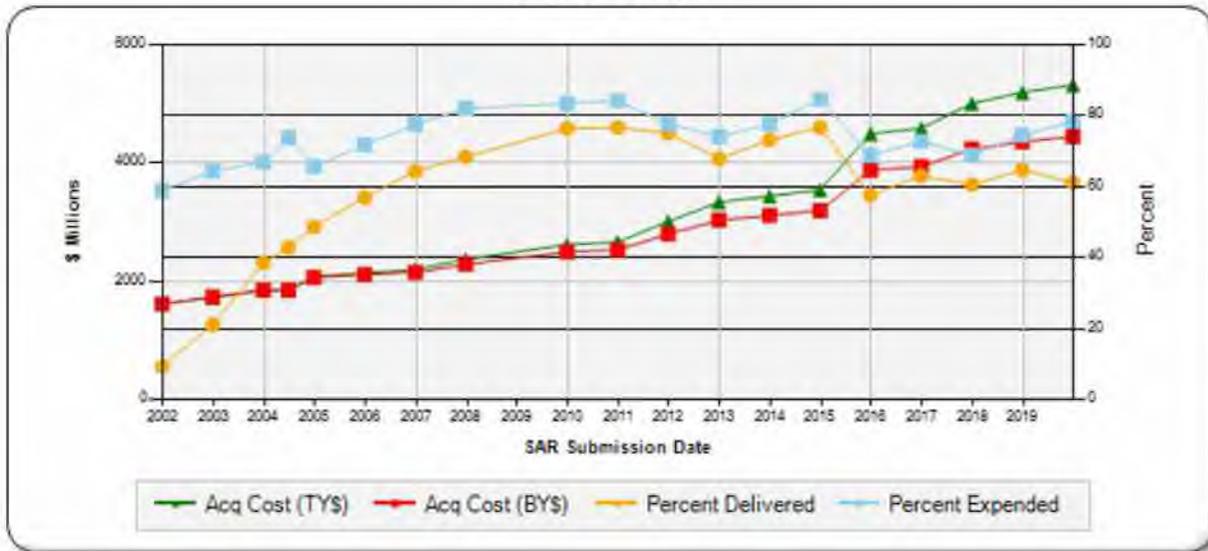
Annual Funding							
0350 Procurement National Guard and Reserve Equipment ,Defense							
Fiscal Year	Quantity	BY 2003 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	15	2.9	--	--	2.9	--	2.9
2017	14	2.4	--	--	2.4	--	2.4
2018	20	3.3	--	--	3.3	--	3.3
2019	4	1.3	--	--	1.3	--	1.3
Subtotal	53	9.9	--	--	9.9	--	9.9

This appropriation increased by 24 MIDS terminals since the previous SAR.

Charts

MIDS first began SAR reporting in December 1997

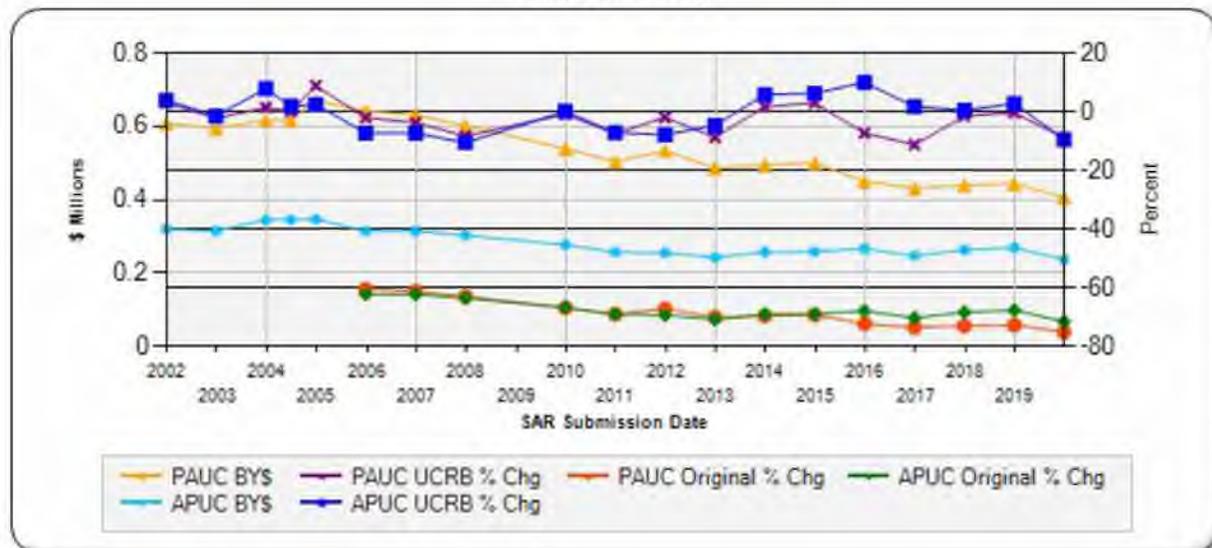
Program Acquisition Cost - MIDS
Base Year 2003 \$M



Quantity - MIDS



Unit Cost - MIDS
Base Year 2003 \$M



Risks

Significant Schedule and Technical Risks

Significant Schedule and Technical Risks	
Milestone III (September 2003)	
1.	Risk: Lack of vendor experience and continued impact to terminal completion and delivery. DLS delivery of LRIP terminals commenced November 2001. ViaSat lacked Multifunctional Information Distribution (MIDS) experience and deliveries did not commence until May 2002 at a lower rate than contractually required. With experience, both vendors met terminal delivery schedules.
2.	Risk: Readiness and successful completion of Operational Evaluation (OPEVAL). The F/A-18 MIDS-LVT Technical Evaluation (TECHEVAL) commenced April 2002. The Operational Evaluation (OPEVAL) commenced late October 2002 and completed March 2003. The OPEVAL Report May 2003 cited MIDS as operationally effective, not operationally suitable. Verification of Correction of Deficiencies (VCD) commenced July 2003 and successfully completed August 2003.
Current Estimate (December 2019)	
1.	Risk: MIDS Terminal Demand versus Production Capacity - MIDS-LVT and MIDS JTRS production capacity is at risk of supporting current and projected Terminal production and delivery schedules in order for platform customers to meet the National Security Agency Cryptographic Modernization (CM) mandates by January 2022. Over 2,000 MIDS-LVT BU2 Terminals/Retrofits and over 5,500 MIDS JTRS Terminal deliveries through FY 2022 is currently projected. If vendors are not prepared to increase production delivery capabilities as production quantity grows (estimated to be approximately >100 Terminals/Month), then Terminal delivery to the Fleet will be delayed and risks U.S., Partner Nations and FMS customers not meeting the CM mandate on time. Mitigation: The MIDS Program Office (MPO) continues to monitor vendor performance; support the procurement of additional test equipment for each vendor; and ensure vendors personnel with appropriate training is in place to support Terminal production. Vendors have added production and test equipment capacity to increase production throughput. The MPO continues to collaborate with platform customers to refine out-year procurement quantity projections to assess current and future demand. The MPO has put in place a rolling wave of Terminal production and procurement opportunities to assist platform partners in their procurement planning for the remainder of FY 2020 and FY 2021. In addition, the MPO is pursuing a Private-Public-Partnership initiative to augment depot repair capacity that would significantly reduce Terminal turn Around Time, thus mitigating any equipment usage conflicts between production and repair activities.

Risks

Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Baseline Estimate (November 2017)	
1.	The Multifunctional Information Distribution System (MIDS) cost model is built using Microsoft Excel 2010. Total Life Cycle Cost Estimate for MIDS is based on a Sigmoid (S)-Curve. The generated point estimate is based on the developed Cost Estimating Relationships (CERs) and inputted sunk costs rather than an estimate at a chosen confidence level. MIDS has incorporated the actual costs of our most recent development of MIDS Joint Tactical Radio System (MIDS JTRS) Phase 2B to build in more confidence and validate the accuracy.
2.	The Program Office Estimate (POE) reflects an updated forecast of the quantity of MIDS terminals (dated January 12, 2019). The O&S costs are based on an estimate which was evaluated by the Air Force Cost Analysis Agency (AFCAA) and Naval Center for Cost Analysis in support of the MIDS JTRS Full Production & Fielding (FP&F) decision. The O&S estimate quantity of 9,029 terminals includes U.S. only terminals currently fielded and on contract plus known requirements. The terminal lifecycle of 20 years includes a phase-in, steady state, and phase-down profile. Development units have no sustainment costs.
Original Baseline Estimate (March 1994)	
1.	Joint Requirements Oversight Council Memorandum (JROCM 031-90) approved the Mission Need Statement (MNS) for MIDS-Low Volume Terminal (MIDS-LVT) in 1990. The original baseline was for MIDS-LVT Milestone (MS) II which authorized MIDS to proceed with MIDS-LVT Engineering Manufacturing and Development (EMD). At MS III, Assistant Secretary of the Navy (Research, Development, and Acquisition) (ASN(RDA)) authorized Full Rate Production for MIDS-LVT in 2003. Later in July 2004 ASN approved the acquisition strategy to develop MIDS JTRS via an Engineering Change Proposal (ECP). The July 2012 ADM designated MIDS as an ACAT IC program transferring program monitoring from Cost Assessment and Program Evaluation office (CAPE) to the Navy Center for Cost Analysis.
Revised Original Estimate (N/A)	
None	
Current Procurement Cost (December 2019)	
1.	The current procurement estimate is \$2.99 Billion (TY\$) which is based on actuals, and the estimated cost of terminals and retrofit kits. MIDS Program Office (MPO) is estimating a quantity of 10,086 U.S. MIDS-LVT and MIDS JTRS terminals. The procurement quantity estimate includes U.S. only terminals currently fielded and on contract plus known requirements FY 2020 through FY 2027. This estimate is dependent on the platform orders and is not controlled by MIDS. It was significantly increased in FY 2015 when the Air Force made the decision to purchase the MIDS JTRS Four Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4).

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	5/11/2000	12/8/2003
Approved Quantity	70	544
Reference	Milestone II ADM	Milestone C ADM
Start Year	2000	2000
End Year	2001	2003

Notes

The MDA authorized LRIP on May 11, 2000 for 70 MIDS Low Volume Terminal (MIDS-LVT). Three additional LRIP decisions were authorized for a cumulative total of 544 MIDS-LVT and MIDS-LVT(2) variants (about 25 percent of the then planned procurement of 2,145 terminals). Based on a Milestone C decision in 2003 for the MIDS program, USD (AT&L) General Counsel and senior staff changed the title of the 2009 DAB decision for MIDS JTRS to Limited Production and Fielding (LP&F). A follow-on decision for the MIDS JTRS variant was made for Full Production and Fielding (FP&F), and not FRP. On December 23, 2009 an ADM approved the award of the limited production of 41 MIDS JTRS variant terminals to support the Navy production schedule and Joint Surveillance Target Attack Radar System (JSTARS) integration and testing requirements. On January 31, 2011, an ADM approved an award of a second limited production for 42 MIDS JTRS variant terminals to support Navy production, Air Force and other Service requirements.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Description
South Korea	10/23/2019	195	38.6	Total Costs are cumulative over multiple years and FMS cases (KS-P-BTV; KS-P-GOL; KS-P-LPN; KS-P-QDW; KS-P-BVB; KS-P-LAA; KS-P-BTZ; KS-P-LQI; KS-D-QEO; KS-P-BWM; KS-P-BWO). Date of sale listed is the most current buy.
Australia	9/30/2019	345	77.4	Total Costs are cumulative over multiple years and FMS cases (AT-D-QCI; AT-P-GOV; AT-P-LAB; AT-P-LCE; AT-P-LCK; AT-P-LCQ; AT-P-LDN; AT-P-LER; AT-P-LET; AT-P-SAF; AT-P-SCF; AT-P-SCI; AT-P-LFA; AT-P-LFG; AT-P-LFO; AT-D-QCS; AT-P-GQF; AT-P-LFT; AT-P-GSU). Date of sale listed is the most current buy.
Switzerland	9/30/2019	107	24.4	Total Costs are cumulative over multiple years and FMS cases (SZ-P-LAC; SZ-P-LAH; SZ-P-LAN; SN-P-LAS). Date of sale listed is the most current buy.
Chile	9/19/2019	28	5.2	Total Cost is cumulative over multiple years and FMS cases (CI-P-LCW; CI-P-LAK). Date of sale listed is the most current buy.
Spain	9/19/2019	1	0.2	Date of sale listed is the most current buy on FMS case SP-B-WAZ.
Sweden	9/19/2019	32	5.9	Total Costs are cumulative over multiple years and FMS cases (SW-P-LAO; SW-P-LBI) Date of sale listed is the most current buy.
Finland	7/22/2019	208	40.5	Total Costs are cumulative over multiple years and FMS cases (FI-P-LBC; FI-P-LBD; FI-P-LBH; FI-P-LBJ; FI-P-GAU). Date of sale listed is the most current buy.
Kuwait	7/22/2019	35	7.5	Total Costs are cumulative over multiple years and FMS cases (KU-P-UMG; KS-P-SBG). Date of sale listed is the most current buy.
Netherlands	6/26/2019	107	8.7	Total Costs are cumulative over multiple years and FMS cases (NE-P-LFT; NE-P-LGT; NE-P-LHW). Date of sale listed is the most current buy.
Romania	5/10/2019	23	4.2	Total Cost is cumulative over multiple years and FMS cases (RO-D-QAH; RO-P-LAM). Date of sale listed is the most current buy.
Japan	4/22/2019	236	47.6	Total Costs are cumulative over multiple years and FMS cases (JA-P-LTY; JA-P-LTD; JA-P-LTV; JA-P-LUD; JA-P-LVM; JA-P-LVY; JA-P-LUO; JA-P-LUP; JA-P-LVE; JA-P-LWC; JA-P-LWJ; JA-P-LWO; JA-P-LXB; JA-P-LXC; JA-P-LXD; JA-P-LXE; JA-P-LXF; JA-P-LXM; JA-P-LXN; JA-P-LXO; JA-P-LYC; JA-P-LYL; JA-P-LYQ; JA-P-LYP; JA-P-LYT; JA-P-LYV; JA-P-LYX; JA-P-LZG; JA-P-NAF; JA-P-NAG; JA-P-NAJ; JA-P-NAL; JA-P-NAU; JA-P-

					-SCJ; JA-P-LZM; JA-P-LZQ; JA-P-NCL; JA-P-NAT; JA-P-CSO). Date of sale listed is the most current buy.
Poland	3/5/2019	105	21.5		Total Costs are cumulative over multiple years and FMS cases (PL-D-SAC; PL-P-LAM; PL-P-LBA). Date of sale listed is the most current buy.
Singapore	11/9/2018	111	16.6		Total Costs are cumulative over multiple years and FMS cases (SN-D-SAA; SN-D-SAC; SN-D-BAA; SN-D-QAT; SN-P-LCF). Date of sale listed is the most current buy. *Not all cost data is available. 20 terminals without pricing.*
Czech Republic	9/28/2018	15	2.6		Date of sale listed is the most current buy on FMS case EZ-P-LCL.
NATO	9/28/2018	20	3.9		Total Cost are cumulative over multiple years and date of sale is most current buy for FMS cases (W3-P-LAB; A6-P-LAC; N1-P-LAA; N4-P-LAF).
United Kingdom	6/28/2018	62	16.4		Total Costs are cumulative over multiple years and FMS cases (UK-D-SAO; UK-P-LVE; UK-P-LVR; UK-P-SAN; UK-P-LVQ). Date of sale listed is the most current buy.
Qatar	5/28/2018	26	6.3		Date of sale listed is the most current buy on FMS case QA-P-LAE.
Portugal	3/20/2017	80	17.6		Total Costs are cumulative over multiple years and FMS cases (PT-D-NAE; PT-P-LDH; PT-P-LDL; PT-P-LDM). Date of sale listed is the most current buy.
Norway	9/8/2016	81	23.6		Total Costs are cumulative over multiple years and FMS cases (NO-D-OAF; NO-D-OAG; NO-P-LBE; NO-P-LBO; NO-P-LCQ). Date of sale listed is the most current buy.
Saudi Arabia	9/8/2016	374	43.4		Total Costs are cumulative over multiple years and FMS cases (SR-D-QAB; SR-D-SAI, SR-P-LCO; SR-D-QBP; SR-P-LCH). Date of sale listed is the most current buy. *Not all cost data is available. 165 terminals without pricing.*
Turkey	9/8/2016	316	63.1		Total Costs are cumulative over multiple years and FMS cases (TK-D-NCU; TK-P-LKT; TK-D-SMB; TK-D-OAD). Date of sale listed is the most current buy.
Taiwan	3/10/2016	248	71.1		Total Costs are cumulative over multiple years and FMS cases (TW-P-GNU; TW-B-YYV; TW-P-GMK; TW-P-LEJ; TW-P-SEG; TW-P-GMG; TW-D-QBZ). Date of sale listed is the most current buy.
Philippines	2/19/2016	15	2.8		Total Cost and date of sale is the most current buy.
Oman	8/31/2015	72	13.7		Total Costs are cumulative over multiple years and FMS cases (MU-D-SAB; MU-P-LAP). Date of sale listed is the most current buy.
Thailand	8/31/2015	24	4.5		Total Costs are cumulative over multiple years and FMS cases (TH-D-QCZ; TH-P-LFA). Date of sale listed is the most current buy.

MIDS					December 2019 SAR
Belgium	1/20/2015	84	18.2	Total Costs are cumulative over multiple years and FMS cases (BE-D-DZV; BE-D-QAT, BE-P-LBB). Date of sale listed is the most current buy.	
Canada	1/20/2015	144	31.9	Total Costs are cumulative over multiple years and FMS cases (CN-P-LHF; CN-P-LHS; CN-P-LIC; CN-P-LIQ; CN-P-LJC, CN-P-LJR). Date of sale listed is the most current buy.	
New Zealand	9/30/2014	8	1.6	Date of sale listed is the most current buy on FMS case (NZ-P-LAJ; NZ-P-LAZ; NZ-P-LAU).	
Jordan	8/7/2014	34	5.6	Total Costs are cumulative over multiple years and FMS cases (JO-P-LAZ; JO-P-LBG; JO-D-QBK) Date of sale listed is the most current buy.	
United Arab Emirates	8/5/2013	19	3.3	Total Costs are cumulative over multiple years and FMS cases (AE-P-LAA; AE-B-UAF; AE-B-ZUG). Date of sale listed is the most current buy.	
Hungary	9/16/2010	22	4.5	Date of sale listed is the most current buy on FMS case HU-P-LAD.	
Pakistan	9/16/2010	68	16.1	Total Costs are cumulative over multiple years and FMS cases (PK-D-NAP; PK-D-SAF). Date of sale listed is the most current buy.	
Morocco	5/14/2010	30	4.8	Date of sale listed is the most current buy on FMS case MO-D-SAY.	
Greece	12/22/2008	40	6.9	Total Costs are cumulative over multiple years and FMS cases (GR-B-XJU; GR-D-SNY). Date of sale listed is the most current buy.	
Austria	5/12/2008	24	0.0	FMS total costs not releasable for Austria. AU-P-LAD.	
Germany	2/20/2004	10	6.4	Date of sale listed is the most current buy on FMS case GY-P-LGI.	
Denmark	5/16/2002	3	0.9	Date of sale listed is the most current buy on FMS case DE-D-OAB.	

Notes

The above FMS cases, with the exception of Australia (AT-P-SCI; AT-P-LFA; AT-P-GQF; AT-P-LFT; AT-D-QCS), Finland (FI-P-GAU), Japan (JA-P-NAZ; JA-P-NBA; JA-P-NCS; JA-P-NCW), Korea (KS-D-QEO; KS-P-LQI; KS-P-BWM; KS-P-BWO), Kuwait (KU-P-SBG), Portugal (PT-P-LDM), Qatar (QA-P-LAE), Switzerland (SZ-P-LAN; SZ-P-LAS) and United Kingdom (UK-D-SAO; UK-P-LVE; UK-P-LVQ; UK-P-LVR; UK-P-SAN), for MIDS Joint Tactical Radio System (MIDS JTRS) terminals, are for MIDS Low Volume Terminals (MIDS-LVT).

SDAF procurement of MIDS JTRS in 2019 totaled 4 units at \$.8M

Direct Commercial Sales (DCS) totaling 971 MIDS-LVT terminals have been implemented to date with Australia, Belgium, Denmark, Greece, Iceland, Japan, Korea, North Atlantic Treaty Organization (NATO) Air Command and Control System (ACCS) Management Agency (NACMA), Netherlands, NATO EuroFighter 2000 and Tornado Management Agency, Norway, Poland, Singapore, Sweden, Turkey and United Kingdom. (Cost information for direct commercial sales is not available nor is date of sale). Per CJCSI 6510.0C, DCS sales for MIDS-LVT and MIDS JTRS are no longer sanctioned, except for a case-by-case basis with Australia, Canada, New Zealand, and the United Kingdom, or a one-time waiver has already been obtained.

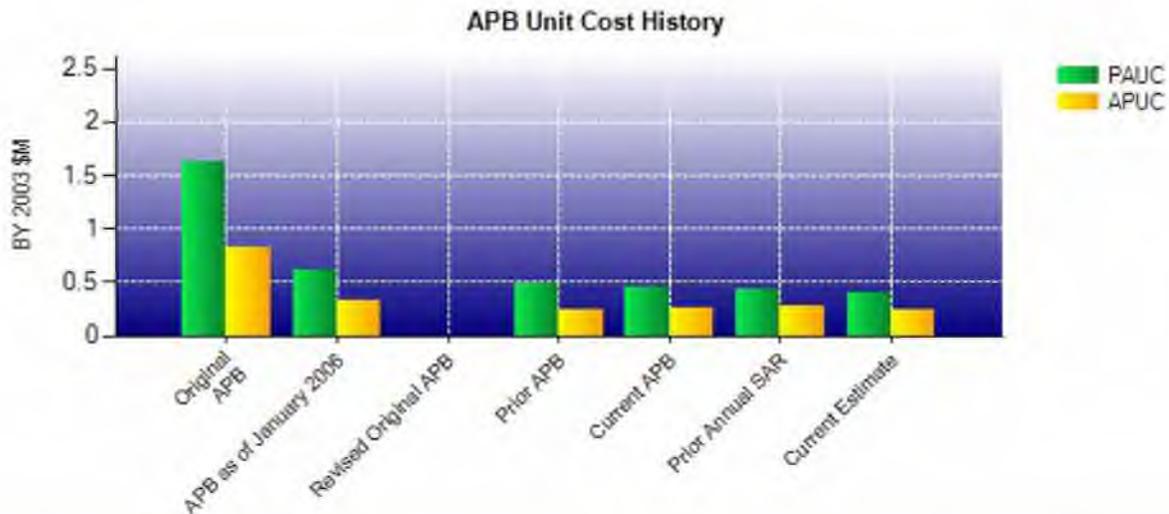
Between December 2018 and December 2019, 140 MIDS-LVT terminals at a cost of \$12.03M were implemented; also during this time, 243 MIDS JTRS terminals at a cost of \$45.3M were implemented through FMS.

Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2003 \$M	BY 2003 \$M	% Change
	Current UCR Baseline (Nov 2017 APB)	Current Estimate (Dec 2019 SAR)	
Program Acquisition Unit Cost			
Cost	4070.4	4445.3	
Quantity	9128	10936	
Unit Cost	0.446	0.406	-8.97
Average Procurement Unit Cost			
Cost	2220.5	2392.2	
Quantity	8469	10086	
Unit Cost	0.262	0.237	-9.54
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2003 \$M	BY 2003 \$M	% Change
	Original UCR Baseline (Mar 1994 APB)	Current Estimate (Dec 2019 SAR)	
Program Acquisition Unit Cost			
Cost	1091.4	4445.3	
Quantity	672	10936	
Unit Cost	1.624	0.406	-75.00
Average Procurement Unit Cost			
Cost	523.7	2392.2	
Quantity	630	10086	
Unit Cost	0.831	0.237	-71.48



APB Unit Cost History					
Item	Date	BY 2003 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Mar 1994	1.625	0.831	1.666	0.931
APB as of January 2006	Jun 2004	0.616	0.339	0.614	0.352
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Nov 2013	0.486	0.243	0.535	0.276
Current APB	Nov 2017	0.446	0.262	0.524	0.325
Prior Annual SAR	Dec 2018	0.444	0.269	0.529	0.338
Current Estimate	Dec 2019	0.406	0.237	0.486	0.296

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
1.670	-0.023	-1.090	0.015	-0.017	0.058	0.000	0.001	-1.056	0.614

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.614	0.002	-0.152	-0.010	0.051	-0.021	0.000	0.002	-0.128	0.486

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.931	-0.019	-0.520	0.016	-0.036	-0.021	0.000	0.001	-0.579	0.352

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.352	0.002	0.047	-0.011	-0.014	-0.082	0.000	0.002	-0.056	0.296

SAR Baseline History					
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate	
Milestone I		N/A	N/A	N/A	N/A
Milestone II		N/A	Dec 1993	Dec 1993	Dec 1993
Milestone III		N/A	N/A	N/A	Dec 1999
IOC		N/A	Dec 2000	N/A	Jan 2001
Total Cost (TY \$M)		N/A	1119.5	1818.9	5317.1
Total Quantity		N/A	672	2964	10936
PAUC		N/A	1.666	0.614	0.486

The baseline includes separate Milestone (MS) III decisions for the MIDS Low Volume Terminal (MIDS-LVT) Variant (1) and MIDS-LVT Variant (3) and a separate IOC for each MIDS variant. A MS III decision was originally planned for the U.S. Army unique MIDS-LVT Variant (2) but it was replaced by an FRP decision approved by the Assistant Secretary of the Navy (Research, Development and Acquisition) in an ADM dated December 8, 2003.

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	825.8	993.1	--	1818.9
Previous Changes				
Economic	+6.2	+18.8	--	+25.0
Quantity	+174.5	+2446.8	--	+2621.3
Schedule	-0.2	-93.7	--	-93.9
Engineering	+705.6	-142.8	--	+562.8
Estimating	+421.3	-190.2	--	+231.1
Other	--	--	--	--
Support	+3.7	+20.9	--	+24.6
Subtotal	+1311.1	+2059.8	--	+3370.9
Current Changes				
Economic	+0.7	-2.4	--	-1.7
Quantity	+13.5	+591.3	--	+604.8
Schedule	--	-12.7	--	-12.7
Engineering	--	--	--	--
Estimating	+176.0	-639.1	--	-463.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+190.2	-62.9	--	+127.3
Total Changes	+1501.3	+1996.9	--	+3498.2
Current Estimate	2327.1	2990.0	--	5317.1

Summary BY 2003 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	869.4	955.4	--	1824.8
Previous Changes				
Economic	--	--	--	--
Quantity	+147.0	+1794.3	--	+1941.3
Schedule	-0.4	-33.1	--	-33.5
Engineering	+592.9	-104.6	--	+488.3
Estimating	+312.6	-198.8	--	+113.8
Other	--	--	--	--
Support	+3.2	+17.7	--	+20.9
Subtotal	+1055.3	+1475.5	--	+2530.8
Current Changes				
Economic	--	--	--	--
Quantity	+9.8	+394.8	--	+404.6
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+118.6	-433.5	--	-314.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+128.4	-38.7	--	+89.7
Total Changes	+1183.7	+1436.8	--	+2620.5
Current Estimate	2053.1	2392.2	--	4445.3

Previous Estimate: December 2018

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	+0.7
Quantity variance from an increase of two MIDS Joint Tactical Radio System (JTRS) terminals. (DOD) (Quantity)	+0.4	+0.5
Quantity variance from an increase of one MIDS Joint Tactical Radio System (JTRS) terminals. (Army) (Quantity)	+0.1	+0.2
Quantity variance from an increase of 24 MIDS Joint Tactical Radio System (JTRS) terminals and 15 Block Upgrade 2 (BU2) retrofit kits and services . (Air Force) (Quantity)	+5.5	+7.6
Quantity variance from an increase of fourteen MIDS Joint Tactical Radio System (JTRS) terminals and two MIDS JTRS Tactical Targeting Network Technology (TTNT) terminals. (Navy) (Quantity)	+3.8	+5.2
Additional funding required in FY 2019 for MIDS TTNT Systems Engineering efforts. (DOD) (Estimating)	+0.4	+0.6
Additional funding required in FY 2019 for MIDS JTRS Systems Engineering efforts. (Air Force) (Estimating)	+4.1	+5.7
FY 2019 Execution Realignment to MIDS RDTE Funding (Navy). (Estimating)	-1.4	-2.0
Adjustment for current and prior escalation. (Estimating)	-0.3	-0.3
Revised estimate to align with FY 2021 PB (Navy). (Estimating)	+19.5	+30.3
Revised estimate for MIDS Modernization Software/Firmware development, Field Loadable capability, Modernizing Special Test Equipment and NSA documentation to IASRD requirements (Navy). (Estimating)	+96.3	+141.7
RDT&E Subtotal	+128.4	+190.2

Procurement	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-2.4
Quantity variance resulting from an increase of 12 terminals from 70 to 82 (Procurement, Defense Wide (PWD)). (Quantity)	+4.4	+6.1
Quantity variance resulting from an increase of 88 terminals from 3,661 to 3,749 (Aircraft Procurement, Navy (APN)). (Quantity)	+33.2	+50.2
Quantity variance resulting from an increase of 30 terminals from 110 to 140 (Ship Conversion, Navy (SCN)). (Quantity)	+11.2	+19.9
Quantity variance resulting from an increase of 159 terminals from 228 to 387 (Other Procurement, Navy (OPN)). (Quantity)	+58.1	+80.5
Quantity variance resulting from an increase of 677 terminals from 3,626 to 4,303 (Aircraft Procurement, Air Force (APAF)). (Quantity)	+254.8	+390.1
Quantity variance resulting from an increase of 65 terminals from 875 to 940 (Other Procurement, Air Force (OPAF)). (Quantity)	+23.6	+32.0
Quantity variance resulting from an increase of 24 terminals from 29 to 53 (National Guard and Reserve Equipment, Defense (NGRED)). (Quantity)	+8.7	+11.3
Quantity variance resulting from an increase of 2 terminals from 430 to 432 (Other Procurement, Army (OPA)). (Quantity)	+0.8	+1.2
Acceleration of procurement buy profile from FY 2021 to 2019 (APN). (Schedule)	0.0	-2.1

Acceleration of procurement buy profile from FY 2021 to 2019 (APAF). (Schedule)	0.0	-10.4
Acceleration of procurement buy profile from FY 2021 to 2019 (NGRED). (Schedule)	0.0	-0.1
Stretch-out of procurement buy profile from 2019 to 2021(SCN). (Schedule)	0.0	+0.1
Acceleration of procurement buy profile from FY 2021 to 2010 (OPA). (Schedule)	0.0	-0.2
Revised estimate due to updated terminal cost estimates (PDW). (Estimating)	-2.5	-3.5
Revised estimate due to updated terminal cost estimates (APN). (Estimating)	-185.5	-273.7
Revised estimate due to updated terminal cost estimates (SCN). (Estimating)	-4.6	-8.2
Revised estimate due to updated terminal cost estimates (OPN). (Estimating)	-28.4	-39.3
Revised estimate due to updated terminal cost estimates (APAF). (Estimating)	-183.4	-272.6
Revised estimate due to updated terminal cost estimates (OPAF). (Estimating)	-13.2	-17.9
Revised estimate due to updated terminal cost estimates (NGRED). (Estimating)	-4.1	-5.5
Revised estimate due to updated terminal cost estimates (OPA). (Estimating)	-12.7	-19.4
Adjustment for current and prior escalation. (Estimating)	+0.9	+1.0
<u>Procurement Subtotal</u>	<u>-38.7</u>	<u>-62.9</u>

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: MIDS JTRS Production Contract
Contractor: BAE Systems/Rockwell Collins Data Link Solutions L.L.C. (DLS)
Contractor Location: 350 Collins Rd NE
 Cedar Rapids, IA 52498
Contract Number: N00039-15-D-0007
Contract Type: Indefinite Delivery Indefinite Quantity (IDIQ), Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: June 17, 2015
Definitization Date: June 17, 2015

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
50.1	N/A	153	554.2	N/A	1707	1084.6	1084.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to exercising options on the IDIQ contract for award of more Delivery Orders (non-Earned Value).

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (IDIQ/FFP/CPFF) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. This is the Firm Fixed Price Production only part of the contract.

Notes

The overall value with all Options included of this contract is \$1,084.6M. In the future, more IDIQ orders will be awarded and options exercised increasing the current of the contract.

This production contract includes nonrecurring engineering, supportability, and the manufacture of MIDS Joint Tactical Radio terminals. FMS are not included in the supplemental contract cost information.

This is a Multiple Award Firm Fixed Price IDIQ contract. Delivery Orders are competed between two vendors, ViaSat and DLS. Current Contract Target Price reflects orders awarded to this vendor.

Contract Identification

Appropriation: Procurement
Contract Name: MIDS JTRS Production Contract
Contractor: ViaSat, INC
Contractor Location: 6155 El Camino Real
 Carlsbad, CA 92009
Contract Number: N00039-15-D-0008
Contract Type: Indefinite Delivery Indefinite Quantity (IDIQ), Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: May 28, 2015
Definitization Date: May 28, 2015

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
19.6	N/A	42	441.2	N/A	1400	798.3	798.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to exercising options on the IDIQ contract for award of more Delivery Orders (non-Earned Value).

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (IDIQ/FFP/CPFF) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. This is the Firm Fixed Price Production only part of the contract.

Notes

The overall value with all Options included of this contract is \$798.3M. In the future, more IDIQ orders will be awarded and options exercised increasing the current of the contract.

This production contract includes nonrecurring engineering, supportability, and the manufacture of MIDS Joint Tactical Radio System terminal. FMS are not included in the supplemental contract cost information.

This is a Multiple Award Firm Fixed Price IDIQ contract. Delivery Orders are competed between two vendors, ViaSat and DLS. Current Contract Target Price reflects orders awarded to this vendor.

Contract Identification

Appropriation: Procurement
Contract Name: MIDS-LVT Production Contract
Contractor: BAE Systems/Rockwell Collins Data Link Solutions L.L.C. (DLS)
Contractor Location: 350 Collins Rd NE
 Cedar Rapids, IA 52498
Contract Number: N00039-15-D-0042
Contract Type: Indefinite Delivery Indefinite Quantity (IDIQ), Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: August 27, 2015
Definitization Date: August 27, 2015

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
14.6	N/A	57	61.8	N/A	188	503.3	503.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to exercising options on the IDIQ contract for award of more Delivery Orders (non-Earned Value).

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (IDIQ/FFP/CPFF) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. This is the Firm Fixed Price Production only part of the contract.

Notes

The overall value with all Options included of this contract is \$503.3M. In the future, more IDIQ orders will be awarded and options exercised increasing the current of the contract.

This production contract includes nonrecurring engineering, supportability, and the manufacture of MIDS-Low Volume Terminal (MIDS-LVT). FMS are not included in the supplemental contract cost information.

This is a Multiple Award Firm Fixed Price IDIQ contract. Delivery Orders are competed between two vendors, ViaSat and DLS. Current Contract Target Price reflects orders awarded to this vendor.

Contract Identification

Appropriation: Procurement
Contract Name: MIDS-LVT Production Contract
Contractor: ViaSat, INC
Contractor Location: 6155 El Camino Real
 Carlsbad, CA 92009
Contract Number: N00039-15-D-0043
Contract Type: Indefinite Delivery Indefinite Quantity (IDIQ), Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: August 21, 2015
Definitization Date: August 21, 2015

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
5.1	N/A	26	90.5	N/A	166	599.1	599.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to exercising options on the IDIQ contract for award of more Delivery Orders (non-Earned Value).

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (IDIQ/FFP/CPFF) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. This is the Firm Fixed Price Production only part of the contract.

Notes

The overall value with all Options included of this contract is \$599.1M. In the future, more IDIQ orders will be awarded and options exercised increasing the current of the contract.

This production contract includes nonrecurring engineering, supportability, and the manufacture of MIDS-Low Volume Terminal (MIDS-LVT). FMS are not included in the supplemental contract cost information.

This is a Multiple Award Firm Fixed Price IDIQ contract. Delivery Orders are competed between two vendors, ViaSat and DLS. Current Contract Target Price reflects orders awarded to this vendor.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	691	696	850	81.88%
Production	6014	5984	10086	59.33%
Total Program Quantity Delivered	6705	6680	10936	61.08%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	5317.1	Years Appropriated	31
Expended to Date	4165.9	Percent Years Appropriated	81.58%
Percent Expended	78.35%	Appropriated to Date	4570.0
Total Funding Years	38	Percent Appropriated	85.95%

The above data is current as of February 20, 2020.

Notes

Total deliveries listed above do not contain EuroMIDS (non-U.S. vendor) terminals (which are not reported in the SAR).

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	January 12, 2018
Source of Estimate:	POE
Quantity to Sustain:	10086
Unit of Measure:	Terminal
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 1996 - FY 2045

The POE reflects an updated forecast of the quantity of MIDS terminals. The O&S costs are based on an estimate which was evaluated by the Air Force Cost Analysis Agency (AFCAA) and Naval Center for Cost Analysis in support of the MIDS Joint Tactical Radio System (JTRS) Full Production & Fielding (FP&F) decision. The quantity of 10,083 includes U.S. only terminals currently fielded, and known requirements for FY 2020 through FY 2027. This period includes a phase-in, steady state, and phase-down profile.

The current production terminal procurement estimate increased by a total of 1,057 terminals due to the increased procurement orders from the U.S. Navy and Air Force. The current Development units increased by 70 terminals and do not have any sustainment costs associated to them.

The 850 development terminals have no sustainment costs.

Sustainment Strategy

For Navy aircraft and Army platforms, maintenance is a three-level structure (i.e. Organizational, Intermediate/Direct Support and Depot). For Navy ships and Air Force aircraft platforms it is a two-level structure (i.e. Organizational and Depot). Navy aircraft support costs assume the use of the Consolidated Automated Support System at the Intermediate level of maintenance. The terminal reliability and maintainability characteristics used are consistent with the requirements contained in the ORD.

Antecedent Information

No Antecedent. The MIDS Low Volume Terminal (MIDS-LVT) does not replace an existing DoD system because it provides Link 16 capability to platforms that were unable to employ analogous systems due to space and weight constraints. The MIDS JTRS terminal is a form, fit, and function replacement and upgrade for MIDS-LVT in selected DoD systems.

Annual O&S Costs BY2003 \$K			
Cost Element	MIDS Average Annual Cost Per Terminal	No Antecedent (Antecedent) N/A	
Unit-Level Manpower	0.250		--
Unit Operations	0.000		--
Maintenance	0.440		--
Sustaining Support	4.120		--
Continuing System Improvements	5.430		--
Indirect Support	0.000		--
Other	0.000		--
Total	10.240		--

Item	Total O&S Cost \$M			
	MIDS		No Antecedent (Antecedent)	
	Current Production APB Objective/Threshold	Current Estimate		
Base Year	1734.5	1908.0	2064.8¹	N/A
Then Year	1865.5	N/A	3662.9	N/A

¹ APB O&S Cost Breach

Equation to Translate Annual Cost to Total Cost

The calculation of total O&S costs is based on total quantities of 10,086 multiplied by an economic life of 20 years multiplied by a unit cost of \$10.24K per year. The increase in O&S is directly due to the increased quantities. No change to the economic life of 20 years. 850 development terminals have no sustainment costs.

O&S Cost Variance		
Category	BY 2003 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2018 SAR	1849.1	
Programmatic/Planning Factors	215.7	Increased quantity
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	215.7	
Current Estimate	2064.8	

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2003 \$M):

Disposal costs are not identified at this time. MIDS expects the disposal estimate to be included in the 2020 SAR.