

# ARCHIVED REPORT

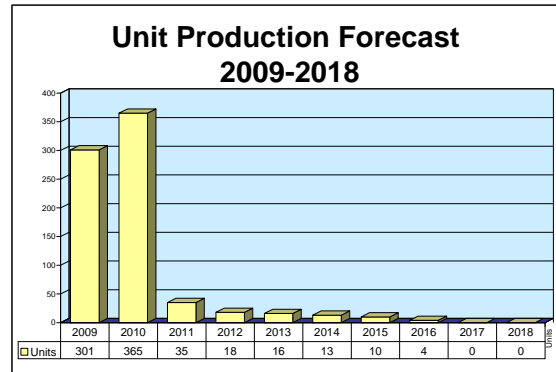
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## USQ-140 Multifunctional Information Distribution System (MIDS) – ViaSat

### Outlook

- In June 2009, ViaSat delivered the first pre-qualification pre-production terminal (PPT) version of MIDS-JTRS to the U.S. Navy
- SPAWAR awards MIDS-LVT Lot 10 contract worth \$21 million to ViaSat in June 2009
- Vendors await U.S. Navy award of one or more contracts for 61 limited-rate initial production (LRIP) MIDS-JTRS terminals



### Orientation

**Description.** The Multifunctional Information Distribution System (MIDS) is a datalink that provides jam-resistant, secure, digital voice and data communications to the warfighter.

#### Sponsor

U.S. Space and Naval Warfare Systems Command  
Arlington, VA  
USA

U.S. Navy Program Executive Office (Space,  
Communications and Sensors)  
MIDS International Program Office  
Washington, DC  
USA

**Status.** In production and service.

**Application.** MIDS terminals from ViaSat are intended for use on aircraft, helicopters, and ground sites.

LVT(1) terminals were designed for airborne platforms including A-10, B-52, EA-6B, Eurofighter, F-16, Mirage and Rafale aircraft, and the MH-60 helicopter.

LVT(2) terminals are intended for use on the JICO Support System (JSS), PM-TRCS (Tactical Radio Communication System), TFIS (Tactical Data Link Fielding and Integration Support System), J-UCAS (Joint-Unmanned Combat Air System), Army Airspace Command and Control (A2C2) system, and SHORAD (Short Range Air Defense) systems, and at the Air Battle Management Operation Center (ABMOC), Battery Command Post (BCP), Patriot Information and Coordination Central (ICC), and TOC/AMDC (Tactical Operation Center/Air Missile Defense Command and Control).

**Price Range.** Forecast International estimates the price of airborne MIDS units to range between \$175,000 and \$375,000 based on quantity and variant. These costs are derived from a June 2006 contract worth \$34.6 million for 193 MIDS (\$179,275 each), primarily for the U.S., and a January 2003 contract worth \$14 million for 40 MIDS (\$350,000 each) for South Korea.

Information on LVT(2) and LVT(11) ground-based terminals pricing is limited. A range of between \$200,000 and \$750,000 million can be speculated, depending on quantity and options ordered. This range

## USQ-140 (MIDS) - ViaSat

is based on a \$2.4 million contract awarded in September 2007 by the U.S. Navy for four LVT(11) ground terminals (\$600,000 each) for South Korea.

Also, U.S. Army budget documentation for FY10 shows expected procurement of 114 LVT(2) terminals for \$26.3 million, or approximately \$231,000 each.

## Contractors

## Prime

<b>ViaSat Inc</b>	<a href="http://www.viasat.com">http://www.viasat.com</a> , 6155 El Camino Real, Carlsbad, CA 92009-1699 United States, Tel: + 1 (760) 476-2200, Fax: + 1 (760) 929-3941, Prime
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## Technical Data

	<u>Metric</u>	<u>U.S.</u>
<b><u>LVT(1) Airborne Terminals</u></b>		
<b>Physical Characteristics</b>		
<i>Main Terminal and RFA</i>		
Weight	19.3 kg	42.4 lb
Size (W x H x L)	19.3 x 19.0 x 38.1 cm	7.6 x 7.5 x 15 in
<i>Remote Power Supply</i>		
Weight	4.1 kg	9.1 lb
Size (W x H x L)	193. x 5.7 x 39.4 cm	7.6 x 2.23 x 15.5 in
<b>Operating Characteristics</b>		
Functions		
Datalink	TADIL-J, IJMS	
Secure Voice Capability	2.4 kbps LPC-10, 16 kbps CVSD	
TACAN Capability	Air-to-Ground, Air-to-Air	
Power Source (Basic)	115 V AC (400 Hz), 3 Phase, 140 DVC	
Power Consumption	0% TSDF 150 Watts, 70% TSDF 350 Watts	

**Design Features.** The Multifunctional Information Distribution System (MIDS) Low-Volume Terminal (LVT) provides secure, digital, anti-jam voice communications (in real time) in the L-band (960-1,215 MHz), and communicates beyond line-of-sight through automatic relay techniques. MIDS complies with NATO STANAG 4175 and 5516 (Link 16) transmission parameters, and is a third-generation Link 16 system.

MIDS incorporates Very High Speed Integrated Circuit (VHSIC) and Microwave/Millimeter Wave Monolithic Integrated Circuit (MIMIC) technology. While interoperable, MIDS is smaller and lighter than JTIDS (Joint Tactical Information Distribution System) terminals. Roughly 0.6 cubic feet (1.6 cu ft for JTIDS) and 64.3 pounds (29.5 kg - about half the JTIDS weight), MIDS comprises one main unit and a smaller secondary unit (3/4 ATR and 1/4 ATR, respectively). Each terminal can send or receive up to 238 kbits/sec. MIDS is ideal for platforms unable to accommodate JTIDS.

**Operational Characteristics.** With MIDS, pilots are able to analyze current tactical air situations almost immediately, enhancing effectiveness and survivability.

The elimination of nodal stations between communicators allows hundreds of omnidirectional links simultaneously without jeopardizing the integrity of the signal or performance of the system architecture. MIDS features electronic warfare techniques such as rapid frequency hopping, spread spectrum modulation (which allows signals to remain undetected in background noise), a powerful error detection and correction code, formatted message catalogs, and voice or text transmission encryption.

In Air Force applications, MIDS allows multi-service links, including the broadcast of general air situation information (AWACS, C<sup>2</sup>, interceptors), airborne relays, and information on ground or weather conditions. In naval applications, air surveillance is increased between aircraft and air defense ships as well as surface and anti-submarine warfare operations. Armies stand to benefit

## USQ-140 (MIDS) - ViaSat

from increased battlefield air management, as MIDS boosts the interoperability of weapons and networks.

## Variants/Upgrades

**LVT(1).** The Low Volume Terminal Version 1 is for aircraft applications, expect for the F-15 aircraft.

**LVT(2).** The LVT(2) is for use by Army combat systems and was initially developed for Patriot missile batteries.

**LVT-3 or Fighter Data Link (FDL).** The FDL terminal is unique to F-15 aircraft and was developed by BAE Systems and Rockwell Collins jointly (as Data Link Solutions).

**LVT(4).** An LVT(1) without TACAN capability.

**LVT(6).** An LVT(1) without voice capability.

**LVT(7).** An LVT(1) that does not have TACAN or voice capability.

**LVT(11).** An LVT(2) ground terminal with voice capability.

**MIDS-JTRS or MIDS-J.** Upgraded version of MIDS that is compatible with Joint Tactical Radio system (JTRS) waveforms. The four-channel MIDS-J will initially run Link 16 and TACAN and additional waveforms will be added later.



Link 16 MIDS Tactical Data Link Terminal Made by ViaSat

Source: ViaSat Inc

## Program Review

**Background.** The MIDS concept can be traced back to a Thomson-CSF (now Thales) SINTAC terminal developed in the early 1970s. Several SINTAC functions would become invaluable elements of the Joint Tactical Information Distribution System (JTIDS).

### *MIDS: A Sleeker, Lighter JTIDS*

Because JTIDS terminals were too large for certain applications, MIDS was developed. Its smaller, more advanced design is able to fit into a larger number of fighters, helicopters, ground sites, and ships. In 1988, Canada, France, Germany, Italy, Norway, Spain, the U.K., and the U.S. agreed to undertake a Phase I study to establish program objectives and determine a labor division upon approval for full-scale MIDS development. Several European electronics formed MIDSCO in June 1989 to pursue full-scale development.

### *Problems, Delays, and Approvals*

Delivery of the first MIDS-LVT EMD terminal was delayed until December 1997 due to minor problems with French Rafale aircraft integration and software. In March 1998, the U.S. DoD accepted delivery of the first LVT engineering and manufacturing development (EMD) system from MIDSCO. Additionally, a funding shortfall delayed the first EMD flight from April 1998 to December 1998. Final approval of MIDS was granted in late 1999. By April 2000, the U.S. Defense Acquisition Board had approved Lot 1 low-rate initial production (LRIP) of MIDS by ViaSat and its rival, Data Link Solutions (DLS).

During the Joint Combat Identification Evaluation Team (JCIET) exercise conducted in April 2002, MIDS was installed on an F/A-18 Hornet to increase the aircrew's situational awareness. This effort proved that MIDS could perform in a real-life battlefield situation.

## USQ-140 (MIDS) - ViaSat

***U.S. and International Deliveries***

In October 2003, SPAWAR placed a \$43.8 million order with ViaSat that called for an unspecified number of MIDS airborne and ground-based terminals. At the end of the year, the Royal Netherlands Air Force (RNAF) acquired approximately 120 MIDS terminals from ViaSat for \$30 million for its F-16 fighters.

ViaSat was awarded a Lot 5 contract in June 2004 to supply MIDS units to the U.S., Canada, Japan, and Taiwan. Both airborne and ground-based MIDS terminals were included in this order.

In the spring of 2005, Turkey signed a deal worth \$1.1 billion to upgrade 117 Block 30/50 F-16 fighters. Seventy-six of the Block 50s will be equipped with MIDS. The Turkish defense minister said the modernization effort would be completed by 2012.

In June 2005, SPAWAR awarded Lot 6 contracts for the production of MIDS for, primarily, the U.S., with the remainder going to Japan. Supplements were added to the contract in September 2005 and April 2006.

In summer 2006, the VAQ-137 EA-6B squadron began operations with MIDS. This was reported in *U.S. Navy Institute Proceedings*. The Navy is also equipping the VAQ-138 EA-6B squadron with MIDS.

In June 2006, ViaSat received a \$39.6 million order for MIDS-LVT. This Lot 7 package combines systems destined not only for the U.S. but also for Portugal, Turkey, and Germany under the FMS program. Shortly thereafter, in September, ViaSat was awarded an additional \$8.7 million for further production of MIDS. This Lot 7 add-on consists primarily of LVT(2) ground components and spares, along with LVT(4) and LVT(6) airborne terminals. At the same time, ViaSat announced an order valued at just over \$2.2 million for production of ground-based LVT(2) terminals for the Naval Surface Warfare Center, Crane Division. A second Lot 7 add-on, having a value of \$3.1 million, was awarded in February 2007 for additional MIDS-LVT(1)s, LVT(2)s, and LVT(7)s for U.S. Navy and Air Force applications.

***MIDS Gets On the JTRS Bandwagon***

In December 2004, ViaSat and DLS were awarded contracts to cooperate on the development of MIDS to a four-channel architecture compliant with JTRS software. JTRS is the next-generation, software-based radio designed to replace most legacy communications systems. Later, the two firms will compete for sales. The MIDS-JTRS will have one Link 16 channel and three channels for advanced waveforms.

The MIDS Program Office completed its MIDS-JTRS Critical Design Review (CDR) in May 2006. The review concluded that the design was on schedule to meet government specifications and that no significant changes were required. In April 2007, ViaSat was awarded a not-to-exceed \$15.6 million order for MIDS-JTRS Production Transition Terminals (PTTs). The contract ran to April 2009. DLS was awarded a comparable MIDS-JTRS PTT contract in the same timeframe.

*Defense System Daily* broke the news that in October 2007, MIDS-JTRS made its first flight in an F/A-18 at China Lake. Flights in 2007 tested TACAN performance, while flights in 2008 simultaneously tested TACAN and Link 16.

***New Technologies***

**TTNT.** In September 2006, *Defense Technology International* reported that the USAF was planning to insert the new Rockwell Collins TTNT (Tactical Targeting Network Technology) datalink transceiver into existing MIDS terminals. TTNT automatically creates an ad hoc airborne Internet among TTNT users. TTNT can transmit eight still images per second, while Link 16 can take up to 40 seconds to transmit one image.

In May 2007, *Inside the Pentagon* reported that the MIDS Program Office is proceeding with the development of the MIDS-JTRS 2 terminal to host the TTNT waveform. The program uses an MIDS-JTRS core terminal along with a Link 16 waveform and the Tactical Air Navigation System, and adds a new TTNT transceiver and TTNT external power amplifier. The upgrade will be a "kit-able" modification to an MIDS-JTRS core terminal.

In December 2008, the USAF selected Northrop Grumman's Multifunction Advanced Data Link (MADL) over TTNT. However, Rockwell Collins reports that the USAF and U.S. Navy are continuing to fund TTNT, although at smaller amounts.

**IP Connection.** In March 2007, ViaSat and DRS Technologies demonstrated an Internet Protocol (IP) data connection from an F/A-18 Hornet cockpit to a ground network. The datalink uses MIDS LVT(1) terminals modified to provide IP communications to and from an onboard DRS airborne tactical server (ATS). In the test, the aircrew created video captures and transferred the IP data files to the ground network in seconds – fast enough to support streaming video. This minor modification brought IP to the cockpit with no added weight, space, or changes to operational flight software. The images could be used during intelligence

USQ-140 (MIDS) - ViaSat

and reconnaissance missions to identify and locate targets, enemy movements, or friendly forces.

**MIDS-LVT Production Continues**

In July 2007, ViaSat was awarded a \$44.95 million contract (Lot 8) for production of MIDS-LVTs for the U.S., Portugal, and Germany. Approximately 95 percent of the order is for U.S. platforms. Deliveries began in June 2008 and were completed by May 2009. According to ViaSat, the new award includes production of LVT(1) terminals and spares for F/A-18, E/A-18G, F-16, and AC 130 aircraft, and MH-60R/S and CH-53K helicopters. The Lot 8 order also includes production of LVT(2) variants and spares for various U.S. Army and Air Force applications, MIDS-LVT(1)

terminals for Portuguese F-16 aircraft, and LVT(2) terminals for German ground-based applications.

Approximately one year later, in June 2008, SPAWAR awarded ViaSat and DLS Lot 9 MIDS contracts. The ViaSat portion is worth approximately \$51.9 million and supports Turkey, Portugal, and the U.S. military. Three months later, SPAWAR added another \$7 million to ViaSat Lot 9 production. ViaSat reports that Lot 9 includes production of LVT(1) terminals and spares for E-2D, E/A-18G, F/A-18, and F-16 aircraft and MH 60R/S and CH-53K helicopters. ViaSat will also supply LVT(1) terminals for Portuguese and Turkish F-16 aircraft. The Lot 9 order also includes production of LVT(2) variants and spares for various U.S. Army, USAF, and USMC applications; work under this contract will be completed by April 2010.

Funding

**FUNDING, U.S. NAVY**

	FY08 <u>AMT</u>	FY09 <u>QTY</u>	FY10 <u>AMT</u>
<b>RDT&amp;E (U.S. Navy)</b>			
PE#0604280N			
Joint Tactical Radio System			
3020 MIDS-JTRS	79.70	27.27	12.66

All \$ are in millions.

The FY10 budget support development and implementation of a Crypto Modernization and Frequency Remapping capabilities, as well as MDS system engineering and technical support to the program.

Source: U.S. Navy FY10 Budget Estimates, May 2009, RDT&E, Navy Budget Activity 5

**FUNDING, U.S. NAVY**

	Prior <u>QTY</u>	Prior <u>AMT</u>	FY08 <u>QTY</u>	FY08 <u>AMT</u>	FY09 <u>QTY</u>	FY09 <u>AMT</u>	FY10 <u>QTY</u>	FY10 <u>AMT</u>
<b>Procurement (U.S. Navy)</b>								
PE#52500 F-18 Modification								
OSIP #012-99 MIDS								
MIDS-LVT	415	117.6			-	0	-	0
MIDS-JTRS	12	7.2	12	7.7	24	10.6	36	12.3
OSIP #021-00 USMC F/A-18								
Upgrade (EXP 583)								
ECP 583R2	25	12.0	16	10.2	6	1.9		

All \$ are in millions.

OSIP #012-99 MIDS includes platforms: F/A-18C/D/E/F and EA-18G

OSIP #021-00 USMC includes platforms F/A-18A/B/C/D

ECP 583R2 includes MIDS LVT, Color Displays, JHMCS, ALE-47, TAMMAC

Source: U.S. Navy FY10 Budget Estimates, May 2009, Aircraft Procurement, Volume II: Budget Activity 5

## USQ-140 (MIDS) - ViaSat

**FUNDING, U.S. ARMY**

	<u>FY08</u> <u>QTY</u>	<u>FY08</u> <u>AMT</u>	<u>FY09</u> <u>QTY</u>	<u>FY09</u> <u>AMT</u>	<u>FY10</u> <u>QTY</u>	<u>FY10</u> <u>AMT</u>
<b>Procurement (U.S. Army)</b> PE#B22603 Radio Terminal Sets MIDS LVT(2) Hardware –ViaSat						
	114	26.3	28	7.1	25	6.5

All \$ are in millions.

Source: U.S. Army FY10 Budget Estimates, May 2009, Other Procurement, Army Communications & Electronics, Budget Activity 2

## Contracts/Orders & Options

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<u>Contractor</u>	<u>Award</u> <u>(\$ millions)</u>	<u>Date/Description</u>
ViaSat	3.3	Apr 2006 – Final add-on to Lot 6 for MIDS-LVT(2) ground-based terminal and spares. This add-on brings the Lot 6 order value to more than \$74 million. SPAWAR was the contracting agency.
ViaSat	3.5	Apr 2006 – Order to begin development of specifications for an airborne networking waveform (ANW) for MIDS-JTRS. Under this effort, the integration of TTNT into MIDS-JTRS will begin. SPAWAR is the contracting agency.
ViaSat	39.6	Jun 2006 – FMS order for MIDS-LVT(1) and LVT(2) Lot 7 for the U.S. (83.5%), Portugal (11%), Turkey (4.5%), and Germany (1%. Work was completed May 2008. SPAWAR was the contracting agency. (N00039-00-D-2101)
ViaSat	8.7	Sep 2006 – Lot 7 add-on for MIDS, primarily LVT(2)s and spares, LVT(4)s, and LVT(6)s. SPAWAR was the contracting agency.
ViaSat	2.2	Sep 2006 – MIDS-LVT(2) ground terminals and support equipment for Naval Surface Warfare Center, Crane Division.
ViaSat	36.7	Oct 2006 – FMS order for MIDS-LVTs for the Turkish Air Force – specifically, 194 MIDS-LVT(6)s for F-16 fighters. Deliveries were expected to begin in Oct 2006 and end in Mar 2010. U.S. DoD shows deliveries until Jan 2013.
ViaSat	12.0	Jan 2007 – FMS contract for MIDS-LVT(1)s for Taiwan. Work is expected to be completed in Feb 2009. SPAWAR is the contracting agency. (N00039-00-D-2101)
ViaSat	3.1	Feb 2007 – Lot 7 add-on for MIDS-LVT(1)s, LVT(2)s, and LVT(7)s for U.S. Navy and Air Force applications. SPAWAR is the contracting agency.
ViaSat	15.6	Apr 2007 – Not-to-exceed order for MIDS-JTRS PTTs. Work is expected to be completed by Apr 2009. SPAWAR is the contracting agency. (N00039-00-D-2101)
ViaSat	44.95	Jul 2007 – Order for MIDS-LVTs (Lot 8) for the U.S. (94.8%), Portugal (3.5%) under FMS, and Germany (1.7%) under the MIDS MoU. Work is expected to be completed by May 2009. SPAWAR is the contracting agency. (N00039-00-D-2101).
ViaSat	2.4	Sep 2007 – Order for MIDS terminals in support of the Republic of Korea. Work under this 24-month contract began in May 2008 and includes production of four LVT(11) ground terminals and associated support equipment.
ViaSat	51.9	Jun 2008 – FMS order for MIDS-LVTs (Lot 9) for the U.S. (82%), Turkey (12%), and Portugal (6%). Work is expected to be completed by Apr 2010. SPAWAR is the contracting agency. (N00039-00-D-2101)

## USQ-140 (MIDS) - ViaSat

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
ViaSat	9.79	Jul 2008 – FFP order for MIDS-JTRS pre-production terminals (PPTS). Work is expected to be completed by Sep 2009. SPAWAR is the contracting agency. (N00039-00-D-2101)
ViaSat	7.05	Sep 2008 – Order for MIDS-LVTs (Lot 9 Mod) for the U.S. Work is expected to be completed by Apr 2010. SPAWAR is the contracting agency. (N00039-00-D-2101).
ViaSat	21.0	Jun 2009 – FMS order for MIDS-LVTs (Lot 10) for the U.S. (80%), Germany (13%), and Canada (7%). Work is expected to be completed by Dec 2010. SPAWAR is the contracting agency. (N00039-00-D-2101)

## Timetable

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<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Fall	1988	MoU for Phase I study into MIDS life-cycle costs and technical specifications
Jun	1989	MIDSCO consortium formed
Mar	1990	U.S. MIDS management switched to Navy
Apr	1990	MIDS Mission Needs Statement
Oct	1991	Demonstration/validation phase begins
Mar	1992	Joint AT/Navy and AF/Navy testing and evaluation
Jun	1993	Operational Requirements Document
	1993	International project office set up; MIDS engineering integrated with F/A-18
Mar	1994	EMD phase begun
Mar	1996	Completion of initial MIDS software construction and F/A-18 modifications for incorporation into Operational Flight Program (OFF)
Mar	1998	First MIDS-LVT (EMD model) delivered to U.S. DoD
Aug	1998	Completion of shipboard operational testing for U.S. Navy
	1999	MIDS LRIP production contracts awarded
Dec	2000	U.S. DoD reaches an agreement with France, Germany, Italy, and Spain for the cooperative production of MIDS
Feb	2001	MIDS achieves IOC after being fitted on F-15C fighter
Oct	2003	SPAWAR places its first order with ViaSat
Dec	2004	Global Power Bomber Test Force conducts Link 16 integration tests on B-2A Stealth Bomber
Dec	2004	DLS and ViaSat receive contracts to incorporate JTRS into MIDS
Mar	2006	Fast Access Secure Transfer (FAST) waveform test flown in a MIDS-FDL
Sep	2006	USAF plans to insert the new TTNT datalink transceiver into existing MIDS terminals
Feb	2007	Contract awarded to develop second spiral of the FAST waveform for transition into MIDS-LVT(1)
Apr	2007	DLS and ViaSat receive contracts for MIDS-JTRS PTTs
Mar	2007	ViaSat demonstrates an IP data connection from the cockpit of an F/A-18 Hornet with a MIDS-LVT(1) to a ground network
	2008	MIDS-JTRS PTTs to be delivered to SPAWAR
Feb	2009	MIDS-JTRS capacity to be delivered to the Fleet
Dec	2010	MIDS-LVT Lot 10 deliveries scheduled to be completed

## Worldwide Distribution/Inventories

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MIDS terminals have been, or will be, installed on a variety of platforms in the following countries: **Australia, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Japan, the Netherlands, New Zealand, Norway, Poland, Portugal, Saudi Arabia, Spain, South Korea, Sweden, Switzerland, Taiwan, Turkey, the U.K., and the U.S.**

## USQ-140 (MIDS) - ViaSat

## Forecast Rationale

*International Customers*

**Turkey.** The Turkish Air Force ordered an additional 194 MIDS-LVT(6) systems for its F-16 aircraft under the FMS program in August 2006. This quantity is in addition to the MIDS Lot 7 award, bringing the total expected production to 203 terminals. Deliveries began in October 2006 and are projected to be completed in March 2010.

**Taiwan.** In 2007, ViaSat received a \$12 million FMS contract for production of MIDS-LVT(1) units for Taiwan. Work was to be completed in February 2009.

**Republic of Korea.** In September 2007, ViaSat received a \$2.4 million order for production of four LVT(11) ground-based terminals plus support equipment. Work under the 24-month contract began in May 2008 and should be completed in 2010.

*Deadly Duo*

In April 2009, *Flug Revue* stated that an MIDS terminal mounted in a Spanish Eurofighter Typhoon sent target data to a second MIDS-equipped Typhoon that was in radar "passive" mode. The passive Typhoon was "invisible" to Electronic Support Measures (ESM) systems when it fired its AMRAAM missile using the data from the first MIDS-equipped Typhoon. The report suggests both aircraft were separated by some distance.

*MIDS-LVT Production Continues*

ViaSat and DLS were both awarded Lot 10 contracts in June 2009. The ViaSat portion is valued at approximately \$21 million and includes LVT(1) airborne terminals for F/A-18+, E/A-18G, F-16 aircraft, and MH-60R/S and CH-53K helicopters. The Lot 10 order also includes production of LVT(2) variants for various U.S. Army and Air Force applications. The order includes terminals for Canada and Germany. Work is expected to be completed by December 2010.

*The Next Generation – MIDS-JTRS*

ViaSat and DLS are cooperatively developing an MIDS-JTRS terminal. In July 2008, ViaSat was awarded a \$9.8 million firm-fixed-price (FFP) order for MIDS-JTRS pre-production terminals (PPTs) that were to be delivered in September 2009. ViaSat made its first delivery of a pre-qualification PPT in June 2009.

In December 2008, the USAF selected Northrop Grumman's MADL capability over Rockwell Collins TTNT link for the F-22. DLS had planned to insert TTNT into MIDS terminals, so the company may be working on inserting MADL capability at this time. New capabilities for MIDS-JTRS also include the yet-to-be-selected airborne networking waveform (ANW).

In April 2009, the Navy issued a presolicitation on FedBizOpps.gov stating that the service had plans to award one or more contracts for an estimated quantity of 61 limited-rate initial production (LRIP) MIDS-JTRS terminals. The estimated award date was July 2009. At the time of this report's publication, an announcement on an award had not been made.

ViaSat delivered the first pre-qualification PPT version of MIDS-JTRS to the U.S. Naval Air Warfare Center (NAWC) China Lake for developmental flight testing on an F/A-18 in June 2009. According to ViaSat, previous flight tests were conducted with advanced engineering developmental terminals, referred to as Air Worthiness Terminals (AWTs). The MIDS-JTRS is completing contractor qualification testing and F/A-18 integration in anticipation of an LRIP order.

*Outlook: MIDS Demand Is High*

In October 2008, *Aerospace Daily & Defense Report* quoted Jim Pits, DLS director, as saying that the Navy plans to forward-fit MIDS-JTRS on new F/A-18E/F and EA-18G and has a requirement for more than 300 terminals. Another market is the replacement of older version MIDS terminals with new MIDS-JTRS units. *Aerospace Daily & Defense Report* stated that approximately 4,000 MIDS-LVTs have been delivered by DLS, Viasat, and the EuroMIDS consortium.

Also in October 2008, *Inside Defense* reported that the Defense Security Cooperation Agency (DSCA) announced a draft of an FMS package for Taiwan. The \$3.1 billion draft included 50 MIDS terminals.

The U.S. Navy will likely continue to split airborne orders between its two suppliers, DLS and ViaSat. At some point, MIDS-LVTs will be faded out in favor of the MIDS-J terminals. Part of this is seen in the April 2009 U.S. Navy announcement of its plans to award one or more contracts for LRIP MIDS-JTRS terminals. With the advent of MIDS-J, orders should be strong for the entire forecast period.



## Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
<b>ViaSat Inc</b>												
<b>MIDS-JTRS &lt;&gt; United States &lt;&gt; Navy</b>												
	0	30	0	35	18	16	13	10	4	0	0	126
<b>USQ-140 (MIDS) &lt;&gt; Canada &lt;&gt; Armed Services</b>												
	4	0	6	0	0	0	0	0	0	0	0	6
<b>USQ-140 (MIDS) &lt;&gt; Germany &lt;&gt; Armed Services</b>												
	6	0	11	0	0	0	0	0	0	0	0	11
<b>USQ-140 (MIDS) &lt;&gt; Portugal &lt;&gt; Air Force &lt;&gt; F-16</b>												
	18	8	15	0	0	0	0	0	0	0	0	23
<b>USQ-140 (MIDS) &lt;&gt; Taiwan &lt;&gt; Armed Services</b>												
	74	6	0	0	0	0	0	0	0	0	0	6
<b>USQ-140 (MIDS) &lt;&gt; Turkey &lt;&gt; Air Force &lt;&gt; F-16</b>												
	139	64	30	0	0	0	0	0	0	0	0	94
<b>USQ-140 (MIDS) &lt;&gt; United States &lt;&gt; Low Volume Terminals (LVT) (Air Force, Army, Navy)</b>												
	807	50	70	0	0	0	0	0	0	0	0	120
<b>USQ-140 (MIDS) &lt;&gt; United States &lt;&gt; Armed Services</b>												
	80	143	233	0	0	0	0	0	0	0	0	376
<b>Total</b>	1,128	301	365	35	18	16	13	10	4	0	0	762
ESTIMATED CALENDAR YEAR RDT&E FUNDING (in millions \$)												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
<b>MIDS JTRS &lt;&gt; United States &lt;&gt; Department of Defense</b>												
	73.66	15.92	.00	.00	.00	.00	.00	.00	.00	.00	.00	15.92
<b>Total</b>	73.66	15.92	.00	.00	.00	.00	.00	.00	.00	.00	.00	15.92