MIDS-LVT AND MIDS JTRS TERMINALS SUPPORT EQUIPMENT

MIDS-LVT AND MIDS JTRS TERMINALS PROVIDE SECURE COMMUNICATIONS AND POSITIVE FRIENDLY ID

SUPPORTED PLATFORMS

L3Harris' Multifunctional Information Distribution System (MIDS)-Low Volume Terminal (LVT) was developed to meet the Link 16 requirements of all U.S. Forces and Coalition partners. MIDS-LVT(1) is designed for installation in fighter aircraft, including F-16s, F/A-18s and the Eurofighter 2000. For customers who are using this terminal in a lab environment or ground station, we offer a range of support equipment to meet your needs for power, cooling, control and cabling. In addition to producing MIDS-LVT(1) terminals, we are the major producer of MIDS-LVT(2) and MIDS-LVT(11) terminals. MIDS-LVT(2) is designed to simplify installation in ground stations. This terminal is self-contained and integrates power, cooling and control. All cables are included except the fill cable and host cable. We have a selection of these in stock, as well as a mounting shelf for installation in a mobile rack or vehicle. We also offer integrated mobile solutions for the LVT(2)/(11).

The MIDS JTRS terminal from L3Harris combines the network-centric communications capability of tomorrow with the real-time operating picture of today—all in one unit. This four-channel software-programmable radio delivers existing Link 16 and TACAN functionality, as well as three JTRS advanced networking waveforms and is "plug and play" with MIDS-LVT(1). We offer a range of products to meet your needs for power, cooling, control and cabling.

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FAST. FORWARD.

MIDS-LVT(1) RUGGEDIZED MOBILE SYSTEM

The L3Harris MIDS-LVT(1) Ruggedized Mobile System is an all-in-one, transportable case unit for the MIDS-LVT(1) terminal and its variants. Outfitted with all of the support equipment required to fully operate a MIDS-LVT(1) terminal, this mobile system alleviates all of the hardware challenges normally associated with getting your terminal integrated with your Link 16 host and operational in the network.

SPECIFICATIONS

- Input Power: 120 VAC 60 Hz, 20 amp (IEC C20)
  230/240 VAC 50 Hz, 10 amp (IEC C14)
- Dimensions: 18.1 x 22.5 x 34.5 in.
- Weight (Approximate): 200 lbs

STANDARD CABLES

- W2, W3 and W7 Link 16 Voice/Data/Control
- W4 Crypto
- W10 & W11 Link 16 RF Cables
- RPS 280VDC Power Cable

STANDARD ACCESSORIES

- 120 VAC Input Power Cable, NEMA 5-20P to IEC C19 (specify if international cables are required)
- W1, W12 & W56 – LVT-1 RPS TO MT Cables
- BNC to BNC 1PPS Jumper Cable
- H-250 Handset
- User Guide

PRODUCT DESCRIPTION

- MIDS-LVT(1) Ruggedized Mobile Rack

MIDS-LVT(2)/(11) RUGGEDIZED MOBILE SYSTEM

The L3Harris MIDS-LVT(2)/(11) Ruggedized Mobile System is a small, transportable case unit for the MIDS-LVT(2)/(11) terminal. Outfitted with all of the support equipment required to fully operate a MIDS-LVT(2)/(11) terminal, this mobile system alleviates all of the hardware challenges normally associated with getting your terminal integrated with your Link 16 host and operational in the network.

SPECIFICATIONS

- Input Power: 120 VAC 60 Hz, 20 amp (IEC C20)
230/240 VAC 50 Hz, 10 amp (IEC C14)
- Dimensions: 18.1 x 22.5 x 34.5 in.
- Weight (Approximate): 200 lbs

STANDARD CABLES

- W2, W3 and W7 Link 16 Voice/Data/Control
- W4 Crypto
- W10 & W11 Link 16 RF Cables
- PSA 28VDC Power Cable

STANDARD ACCESSORIES

- Input Power Cables 120 VAC NEMA 5-20P to IEC C19
- 230/240 VAC AS/NZ4417 to IEC C13
- 230/240 VAC CEE 7/7 EURO SCHUKO to IEC C13 (please specify if other international cables are required)
- BNC to BNC 1PPS Jumper Cable
- H-250 Handset
- 4x Ethernet Cables
- USB-A to USB-B Cable
- User Guide

PRODUCT DESCRIPTION

- MIDS-LVT(2)/(11) Ruggedized Mobile Rack

MIDS JTRS RUGGEDIZED MOBILE SYSTEM

The L3Harris MIDS JTRS Ruggedized Mobile System is a small, 8U transportable case unit offering a convenient way to operate your Link 16 system. Outfitted with all of the equipment you need for multi-channel operation, this mobile system can be used in any number of venues including operational, training, demonstrations and testing.

SPECIFICATIONS

- Input Power: 120 VAC 60 Hz, 20 amp (IEC C20)
230/240 VAC 50 Hz, 10 amp (IEC C14)
- Dimensions: 18.1 x 22.5 x 34.5 in.
- Weight (Approximate): 200 lbs

STANDARD CABLES

- W2, W3 and W7 Link 16 Voice/Data/Control
- W4 Crypto
- W15 & W16 CH2, CH3 & CH4 Voice/Data/Control
- W10 & W11 Link 16 RF Cables
- W17, W18, W19, W20 & W21 ,CH2, CH3 & CH4 RF Cables
- RPS 280VDC Power Cable

STANDARD ACCESSORIES

- Input Power Cables 120 VAC NEMA 5-20P to IEC C19
- 230/240 VAC AS/NZ4417 to IEC C13
- 230/240 VAC CEE 7/7 EURO SCHUKO to IEC C13 (please specify if other international cables are required)
- W105 & W112 – JTRS B & C Power
- BNC to BNC 1PPS Jumper Cable
- H-250 Handset
- 4x Ethernet Cables
- USB-A to USB-B Cable
- User Guide

PRODUCT DESCRIPTION

- MIDS JTRS Ruggedized Mobile Rack

MULTI-PLATFORM INTEGRATED CONTROLLER (MIC)

The L3Harris Multi-Platform Integrated Controller (MIC) provides you with all of the control and monitoring functions for the MIDS-LVT and MIDS JTRS terminals. The easy-to-operate web interface allows for more extensive options, including remote operation of the terminal over an IP network.

MIDS-LVT(1) and MIDS JTRS Control & Monitoring

> Terminal Power (On/Off)
> Crypto Hold (Standby)
> LTTI
> IFF Emergency
> Fail Decode
> Platform (IOIDENT) Configuration
> 1553 Address (RTAD)
> Crypto Zeroize

MIDS-LVT(2)/(11) Control & Monitoring

> Terminal Power (On/Standby)
> Blower Fail
> Air Filter Alarm
> Power Conditioner Fail
> Platform (IOIDENT) Configuration
> Crypto Zeroize

The MIC is intended to operate with the integrated AC ruggedized power supply, but also has the flexibility to work with a 9 to 36 VDC source.

The controller includes a standard crypto fill connector interface on the front panel, allowing you to seamlessly connect to the MIDS-LVT(1) and MIDS JTRS non-standard D38999 connectors.

The L3Harris Multi-Platform Audio Component (MAC) is also available for voice and speaker interface.

SPECIFICATIONS

> Dimensions: (W x H x D) 8.5 x 1.72 x 11 in. (½ width of 1U-high 19 in. rack)
> Power: 9 to 36 VDC (115 to 240 VAC adapter included)
> Weight (Approximate): 5 lbs

FEATURES

> Designed for TEMPEST Red/Black Separation
> Standard RJ45 Host Interface Connection
> Standard Crypto Fill Connecter Interface

ACCESSORIES AND INTERFACE CABLES

> W2–Link 16 Voice Interface
> W3–MIDS Host Interface (including breakouts for 1553)
> W4–Crypto Fill Cable
> W6/W7–MIDS Discrete Control (includes 1PPS ETR breakout 10 V 50 ohm BNC)
> Double Shielded Ethernet Cables (7 ft)
> Rugged AC Power Supply (AC to 12 VDC)

PRODUCT DESCRIPTIONS

> MIDS-LVT(1)/JTRS Multi-Platform Integrated Controller (MIC)
> MIDS-LVT(2)/(11) Multi-Platform Integrated Controller (MIC)

Multi-Platform Integrated Controller (MIC)

MULTI-PLATFORM AUDIO COMPONENT (MAC)

The L3Harris Multi-Platform Audio Component (MAC) is a rugged interface unit that provides independent or simultaneous dual-channel Link 16 voice (receive and transmit). It features a custom built 30 W quad-speaker system that has been specifically tuned to enhance audio quality.

The internal adjustable amplifiers can be configured through a web interface to operate any MIDS platform and is compatible with most headsets and handsets.

For the voice interface, the H-250 handset is recommended, which comes standard with the MAC system.

The MAC is intended to operate with the integrated AC ruggedized power supply, but also has the flexibility to work with a 9 to 36 VDC source.

The device offers a Push-to-Talk (PTT) deactivate function that mutes the speakers when the handset PTT is pressed.

All web interface functionality for the MAC requires L3Harris' Multi-Platform Integrated Controller (MIC), which is sold separately.

The MAC can either be used as a standalone unit or with L3Harris' MIDS-LVT and MIDS JTRS terminals (multiple configurations available).

SPECIFICATIONS

- Dimensions: (W x H x D) 8.5 x 1.72 x 11 in. (½ width of 1U-high 19 in. rack)
- Power: 9 to 36 VDC (115 to 240 VAC adapter included)
- Weight (Approximate): 5 lbs

FEATURES

- 30 W Speaker System
- Remote Monitoring & Control (MIC Required)
- 9 to 36 VDC Input

ACCESSORIES AND INTERFACE CABLES

- MIC/MAC Interface Cable
- H-250 Handset
- Rugged AC Power Supply (AC to 12 VDC)

PRODUCT DESCRIPTIONS

- Multi-Platform Audio Component (MAC)
- MAC Standalone for MIDS-LVT(2)/(11) with Cable
- MAC Standalone for MIDS-LVT(1)/JTRS

Note: MIC must be used for STT

Multi-Platform Integrated Controller (MIC)

MIDS-LVT(1) CONTROL PLUG, J7

Do you need to control a terminal in the field without a lot of bulky equipment? Do you need to determine the condition of a terminal when the host has failed or is not connected? The LVT(1) Control Plug connects directly to the MIDS-LVT(1) J7 connector, providing switches for power on/off and standby on/off. Zeroize is accomplished simply by removing the connector. No longer than 5 inches in length, the device fits in your pocket.

The MIDS-LVT(1) Fail Decode LEDs on the end plate provide valuable terminal status information. These include the three most probable LRUs and/or SRUs responsible for a failure detected by the terminal during Startup Built in Test (SBIT), TDMA IBIT or simultaneous TACAN/TDMA IBIT—even when no host is connected.

For easy reference, the Control Plug comes with a pocket card containing the Fail Decode Matrix.

SPECIFICATIONS

> Diameter: 1.38 in.
> Length: 4.78 in.
> Weight: 3.3 oz

PRODUCT DESCRIPTION

> Control Plug

Side View

Front View

Compatible with MIDS JTRS

MIDS-LVT(1) COOLING TRAY

The MIDS-LVT(1) Cooling Tray is a self-contained cooling and mounting device for one MIDS-LVT(1) and its corresponding Remote Power Supply (RPS).

Made of lightweight, sturdy aluminum, the MIDS Cooling Tray provides the necessary 45 CFM of ambient cooling air to the MIDS terminal and RPS. The rear-mounted blower motor is totally enclosed within the air plenum to minimize noise. Guide channels are provided for both the MIDS-LVT(1) and the RPS along with three aircraft hold down devices. Positioning pins are mounted on the plenum wall to ensure proper airflow port alignment.

A stainless steel interlock switch activates the blower whenever a terminal is inserted. There is no danger of operating the terminal with no airflow, as the blower automatically starts as soon as the terminal is inserted.

The cooling tray is designed to provide access to the side panel of the terminal, making it easy to access to SRUs for testing and repair.

There are two versions of the MIDS Cooling Tray: one for U.S. power (115 VAC 60 Hz) and one for European/Asian power (230 VAC 50 Hz). The unit is rack mountable in a standard 19 in. wide rack configuration (requires a user-supplied shelf). A standard power cord with MIL D38999 connector is supplied and a mounting template is available upon request.

Rackmounted MIDS-LVT(1) cooling Tray with Terminal

Transport Case

SPECIFICATIONS

> Width:	16.70 in.
> Height:	9.95 in. (from table top surface)
> Depth:	25.15 in.
> Weight (Approximate):	35 lb (unloaded)

Electrical Input Power

> 115 VAC Cooling Tray:	100 to 130 VAC, 60 Hz, Single Phase, 200 W
> 230 VAC Cooling Tray:	200 to 250 VAC, 50 Hz, Single Phase, 200 W
> Cooling:	None required
> Noise:	Level 68 dBA at 3 ft

PRODUCT DESCRIPTIONS

> MIDS-LVT(1) Cooling Tray 115 VAC, 60 Hz
> MIDS-LVT(1) Cooling Tray 230 VAC, 50 Hz
> Transport Case

MIDS-LVT(1) Cooling Tray Integrated Control Unit

Front View

Rear View

Compatible with MIDS JTRS

MIDS JTRS COOLING TRAY

The MIDS JTRS Cooling Tray is sufficient for both core single-channel (Link 16, Voice and TACAN) and multichannel applications (Channels 2, 3 and 4).

It operates on a “clean” 28 VDC input, but also comes with the required AC/DC power supply so that you can use it on 115/230 VAC 50-60 Hz.

The design is rugged and developed to properly cool the MIDS JTRS. It produces the proper airflow for the MIDS JTRS, operating at the worst case scenario, per the ICD at sea level with an ambient temperature up to approximately 49°C.

The MIDS JTRS Cooling Tray comes with removable rubber feet on the bottom that will decrease the height to 8.6 inches. There is also a #10 hardware mounting pattern where the feet can be removed and you can secure the base to your equipment.

SPECIFICATIONS

> Width:	14.6 in.
> Height:	8.9 in.
> Depth:	22.0 in.
> Weight (Approximate):	25 lb
> Electrical Input Power:	115 VAC, 60HZ or 230 VAC, 50HZ
> Cooling:	None required

PRODUCT DESCRIPTION

> MIDS JTRS Cooling Tray

MIDS-LVT(1)/JTRS POWER UNIT

The MIDS Power Unit (MPU) is a totally self-contained DC prime power source. This small unit is installed in a metal enclosure that is 10 7/8 x 18 1/2 x 8 3/4 in. and weighs just 33 lb. Its 1200 W power rating will supply the DC power of 280 VDC Differential (± 140 VDC) necessary to power two L3Harris MIDS-LVT(1) terminals. The internal fans provide forced convection cooling. Separate DC Disconnect switches are provided for each terminal's Remote Power Supply (RPS).

The MPU comes with all necessary cables. The AC input is supplied by an IEC type power cord. No user setup is required for the specified input voltage ranges. The MPU-to-MIDS RPS interconnecting cable provides connections for powering two terminals.

The MPU contains two Ametek programmable DC power supplies that have been set to provide the correct output voltage and current. There is no danger of inadvertent voltage or current settings as this is preset and locked internally. The user simply connects the DC output cable to the MIDS RPS power supply, plugs the MPU into a standard U.S. or Universal voltage source, turns on the main power switch and then turns on the corresponding DC Output switch. It couldn't be simpler! Transport case is available separately.

A 1U rack-mountable configuration of the 280 VDC Differential (±140 VDC) power supplies used in the MIDS Power Unit is also available. This configuration is for use with a single LVT(1) terminal and includes all cables. It interfaces to the Integrated Control Unit (with RPS On/Off).

SPECIFICATIONS

- Width: 10.875 in.
- Height: 8.75 in.
- Depth: 18.5 in.
- Weight (Approximate): 33 lb
- Electrical Input Power: 90 to 132 VAC, 47 to 63 Hz or
- Autoranging: 180 to 264 VAC, 47 to 63 Hz

PRODUCT DESCRIPTIONS

- MIDS-LVT(1) Power Unit
- MIDS 1U Rack-mountable Power Unit
- Transport Case

MIDS Rack-Mountable Power Unit

Front View

MIDS-LVT(1) Power Unit

Transport Case

Compatible with MIDS JTRS

DC POWER SUPPLY FOR MIDS-LVT(2)/(11)

The MIDS-LVT(2)/(11) Power Supply is a 1225 W Ametek XFR 35-35 DC power supply that has been pre-programmed to provide the correct output voltage and current. When the Master Power Switch is turned to ON, the Volt Meter on the front panel shows 28.0 ± 0.1.

Includes 2 cables: The Power Supply-to-LVT Power Supply Assembly (PSA) cable assembly and the AC power cable for 115 VAC 50/60 Hz U.S. operation. The AC power input 100 to 264 VAC 47 to 63 Hz is autosensing and an international plug adapter kit is available by request.

SPECIFICATIONS

> Width:	19 in.; 43.2 mm
> Height:	1.7 in.; 429.4 mm
> Depth:	20 in.; 508.1 mm
> Weight (Approximate):	18 lb; 8.2 kg
> XFR 1.2 kW:	85 to 130 VAC or 1F (17A@120 VAC; 8.8A@230 VAC Typical) 47 to 63 Hz; Automatic Range detect

PRODUCT DESCRIPTION

> DC Power Supply

DC Power Supply for MIDS-LVT(2)/(11)

Front View

MIDS-LVT(1), MIDS-LVT(2)/(11) and MIDS JTRS CABLES

The MIDS-LVT(1) and MIDS JTRS are delivered without any cables. The terminal integrator will need to provide both the RPS to MT interconnect cables and the external cables including those for connecting to the main power, a tactical host and a fill device.

The MIDS-LVT(2) is provided with the interconnect cables and both a DC and AC power cable. Cables that are not included with the terminal are the Fill Cable and Host Cable. Host cables are available to support all combinations of interfaces.

J3 Host Cable with Ethernet

J3 Host Cable with Ethernet, Support Port

Fill Cable, W4

MIDS-LVT(1) CABLES

PRODUCT DESCRIPTIONS

- RPS to MT Cable Set (A, B, C Power & Prime)
- MIDS-LVT(1) Fill Cable, W4
- MIDS-LVT(1) with 1553 and Support Port Host Cable for Platform A, RT Address 1
- MIDS-LVT(1) with 1553 and Support Port Host Cable for Platform A, RT Address 26
- MIDS-LVT(1) with 1553 and Support Port Host Cable for Platform A, RT Address 27
- MIDS-LVT(1) with 1553 and Support Port Host Cable for Platform I, RT Address 26
- MIDS-LVT(1) with 1553 and Support Port Host Cable for Platform B, RT Address 1
- MIDS Host Cable Platform I 1553 with Support
- Cable Antenna A
- Cable Antenna B

MIDS-LVT(2)/(11) CABLES

PRODUCT DESCRIPTIONS

MIDS-LVT(2) and LVT(11) Cables

- MIDS-LVT(2)/(11) Fill Cable, W4

MIDS-LVT(2) and LVT(11) Host Cable Variants

- MIDS-LVT(2)/(11) J3 Host Cable with Ethernet and Support Port
- MIDS-LVT(2)/(11) J3 Host Cable with Ethernet
- MIDS-LVT(2)/(11) J3 Host Cable with Eicon X.25, Ethernet and Support Port

MIDS JTRS CABLES

PRODUCT DESCRIPTIONS

- MIC must be used for STT
- MIDS JTRS J5 Host Cable
- MIDS JTRS J12 Host Cable
- MIDS JTRS Fill Cable
- MIDS JTRS Host Cable with 1553 and Support Port Host Cable for Platform A, RT Address 1
- MIDS JTRS Host Pass Through with Ethernet Cable
- MIDS JTRS HMI Control Bus Cable
- MIDS JTRS Discretes Cable
- MIDS JTRS Link 16 Host Selection, Data Bus, and Control Cable
- MIDS JTRS Discrete Cable
- MIDS JTRS Suppression Cable
- MIDS JTRS Voice Cable

MIDS ANCILLARY ITEMS

L3Harris offers customized MIDS cables, transport cases and other specialty items for the MIDS integrator and field service engineer. Items manufactured by other vendors such as RF terminators, attenuators, low pass filters, GPS receivers and L-band antennas may also be purchased through L3Harris.

We carry many of these items in inventory and can shorten the lead time significantly, thus shortening your schedule and reducing costs.

Transport Cases

MIDS Batteries (Set of 3)

Battery Insertion Torque Driver Kit

RF Terminator/Loads

Antenna A RF Cable

Antenna B RF Cable

PRODUCT DESCRIPTIONS

- MIDS-LVT(2) Filter Assembly
- MIDS-LVT(2) Voice Retrofit Kit
- MIDS Batteries (Set of 3)
- GPS with Network Time Server
- Portable Rate Generator, GPS
- Battery Insertion Torque Driver Kit
- Attenuator, 50 Ohm/150 W/30 dB Weinschel
- Low Pass Filter—Antenna A (LPFA) (N connector)
- Low Pass Filter—Antenna B (LPFB) (HN connector)
- 250 W Terminator/Load, Weinschel 1433-3
- 50 Watt (5KW peak) RF Terminator/Load Weinschel (for N or HN) 1426-4
- AUI Transceiver with 12V Power Pack (for use with MIDS-LVT Ethernet and Support Port)
- 1553 PC Express/Card and Cable
- 1553 PC Card and Cable Low Profile Assembly Kit
- 1553 PCMCIA Card
- 1553 PC Express/54 Card (for -40 to +85 C) and Cable

SUPPORT PORT INTERCEPTORS (SPI)

The L3Harris Support Port Interceptor (SPI) provides access to the Support Port interfaces of the MIDS-LVT(1) and -LVT(2) terminals.

All of the J3 connections pass through the SPI, between the terminal and the host, except for those of the Support Port, which are brought out to the front panel. A switch on the front panel determines which data path is active on the Support port, either ETH or AUI.

On ETH, the internal AUI converter is bypassed. On AUI, the internal AUI converter is utilized to convert the signal to 10Base-T if required. The SPI also acts as a 12V power supply that can be used with an external cable to power the MIDS Flight Recorder. A rechargeable AN/PRC-148 battery is included with the unit and supplies power for the embedded AUI circuitry and MIDS Flight Recorder. The battery connects to the back panel and a gauge is provided to indicate the battery charge status. The kit is delivered in a ruggedized case with all required cables for the SPI and for charging the battery.

SPECIFICATIONS

> Dimensions:	4.75 x 6.75 x 4.75 in.
> With battery attached:	4.75 x 9 x 4.75 in.
> With battery and charger:	4.75 x 10.375 x 4.75 in.
> Power:	12 V AN/PRC-148 rechargeable battery
> Unit weight:	3 lb
> With battery attached:	3 lb, 7 oz
> With battery and charger:	3 lb, 10.3 oz
> Total weight in case:	29 lb, 8.3 oz

HIGHLIGHTS

- > Taps the interface between MIDS terminal and its host to provide access to the Support Port
- > Ethernet 10Base-T Interface connects to PC
- > Ethernet AUI Interface connects to MIDS Flight Recorder
- > External, rechargeable battery provides 84 hours of power to the unit with the front displays off and for AUI
- > Easy to read battery power level display
- > Portable, easy to use
- > All cables included
- > Acts as 12V power supply for MFR

SPI KIT INCLUDES

- > SPI – Support Port Interceptor
- > SPI ruggedized case
- > Host cable
- > Terminal cable
- > MIDS Flight Recorder power and data cable
- > Ethernet cable
- > Universal 12 V battery charger
- > 12 V AN/PRC-148 rechargeable battery

PRODUCT DESCRIPTIONS

- > Support Port Interface – SPI
- > Battery, L-ion rechargeable

HOST INTERFACE UNIT (HIU)

The MIDS Host Interface Unit (HIU) provides access to 1553 and Ethernet interfaces for the MIDS-LVT/JTRS terminals. The HIU also provides access to the Support Port interfaces for the MIDS-LVT(1) and -LVT(2) terminals. Switches on the front panel can change whether the internal AUI converter is active for Ethernet and Support. Both the Platform type and the RT address are selectable using switches on the front panel. The selected Platform and RT address type are displayed on the front panel.

The HIU also acts as a 12V power supply for a MIDS Flight Recorder using an external cable. A rechargeable AN/ PRC-148 battery is included with the unit and supplies power for the embedded AUI and MIDS Flight Recorder. The battery connects to the back panel and a gauge is provided to indicate the battery charge status. The kit is delivered in a ruggedized case with all required cables for the HIU and for charging the battery.

Host Interface Unit (HIU)

Front View

Transport Case

SPECIFICATIONS

> Dimensions:	4.75 x 6.75 x 4.75 in.
> With battery attached:	4.75 x 9 x 4.75 in.
> With battery and charger:	4.75 x 10.375 x 4.75 in.
> Power:	12 V AN/PRC-148 rechargeable battery
> Unit weight:	3 lb, 2.5 oz
> With battery attached:	3 lb, 15 oz
> With battery and charger:	4 lb, 2.3 oz
> Total weight in case:	30 lb, 0.3 oz

HIGHLIGHTS

- > Taps the interface between MIDS terminal and its host to provide access to the Support Port
- > Switches allow the user to change the platform and RT address for the terminal
- > Easy to read battery power level display
- > 1553 A and B connections
- > Ethernet 10Base-T interface connects to PC
- > Ethernet AUI interface connects to MIDS Flight Recorder
- > External, rechargeable battery provides 61 hours of power to the unit with the front displays on and for AUI
- > External, rechargeable battery provides 84 hours of power to the unit with the front displays off and for AUI
- > Portable, easy to use
- > All cables included
- > Acts as 12V power supply for MFR

HIU KIT INCLUDES

- > HIU – Host Interface Unit
- > HIU ruggedized case
- > Host cable
- > Terminal cable
- > MIDS Flight Recorder power and data cable
- > Ethernet cable
- > Universal 12 V battery charger
- > 12 V AN/PRC-148 rechargeable battery

PRODUCT DESCRIPTIONS

- > Host Interface Unit
- > Battery L-ion chargeable

ENHANCED FLIGHT RECORDER

Link 16 terminals, including MIDS-LVT(1)s, MIDS-LVT(2)s, FDLs and MIDS JTRS, are used by the military for tactical communications. A Support Port on these terminals provides a means of obtaining detailed information about the data exchanged. The MIDS Flight Recorder connects to the terminal support port to automatically record data, including terminal performance data not available on the normal host interface. The additional data is invaluable for flight test verification. A Recording Configuration Editor with simple GUI is provided with the Recorder that eliminates the requirement to perform HEX editing of recording The MIDS Flight Recorder mounts to a bulkhead using four #10 fasteners in the corners. L3Harris recommends that NAS 1101 fasteners be used. Although the Recorder is a commercial product, it is suitable for use in fighter aircraft and meets many of the same environmental requirements imposed on MIDS terminals.

INTERFACES

The Recorder employs D38999 connectors. It receives power from the aircraft's 28 VDC power supply and communicates with the MIDS Terminal via an AUI or Ethernet interface. A compact flash memory card socket interface provides for removable bulk storage and is used for recording of flight test data.

OPERATION

Once power is applied, the recorder automatically establishes a connection with the terminal and enables the recording function. A control file specifying which Functional Input Messages (FIMs), Functional Output Messages (FOMs), Data Transfer Blocks (DTBs), Internal Data Blocks (IDBs) and status words are to be recorded is prepared in advance and stored on the memory card by the test analyst. This allows the test director to obtain information not available on the 1553 interface without impacting the mission computer. The memory card may also hold the recording software making it easy to upgrade to new software versions.

A new file is automatically started every time the terminal is restarted using a sequential naming convention. Even if every time slot contains fixed format messages at Packed-4, the 4 GB removable token will hold over 20 hours of recorded data. That's a time slot duty factor of 172%. If only half of the slots are used at Packed-2, it will hold over 80 hours of recorded data.

ANALYSIS

The recorded data is written in the ".raw" format and may be analyzed using the L3Harris Analysis Support Tool provided with the unit, or with other data link analysis systems such as MANDRIL, available from Lockheed Martin UK Integrated Systems & Solutions, Ltd.

TIME RECONCILIATION

To facilitate the reconciliation of recorded data (which carries a Link 16 time stamp) with TSPI data (which carries a GPS UTC time stamp), the MIDS Recorder accepts as input two 1 PPS signals. The fractional time difference between these two signals is measured with millisecond accuracy and periodically written to a unique file on the CF card.

SPECIFICATIONS

> Dimensions:	6.375 x 4.906 x 1.906 in. (size excludes connectors and fasteners)
> Weight (Approximate):	3 lb
> Power:	12 to 28 VDC, MIL-STD-704F

HIGHLIGHTS

- > Supports AUI or Ethernet 10Base-T
- > Provides discrete indicator of recording-in-progress status
- > Automatically connects to terminal and logs history of terminal status and state changes
- > Measures and records fractional time delta between network time and GPS time
- > Records over 80 hours of Packed-2 data at 50% TSDF on the removable 4 GB memory token
- > Includes Datakey DFX Memory Token (Qty 2)
- > Includes an Adapter to read the Memory Tokens on your PC
- > A CD containing supporting software, including the Recording Configuration Editor (RCE) and the L3Harris Analysis Support Tool for MIDS. These tools allow the user to specify what data is to be recorded and to extract specific data from the recording files for subsequent analysis.

PRODUCT DESCRIPTIONS

- > Enhanced Flight Recorder Kit Software Utilities (specify terminal type: MIDS-LVT or MIDS JTRS)
- > PC Adapter (Memory Token USB Reader) (Qty 1) Datakey DFX Memory Token (QTY 2)

Enhanced Flight Recorder Kit

Enhanced MIDS Flight Recorder

Datakey DFX Memory Token

PC Adapter (Memory Token USB Reader)

GPS NETWORK TIME SERVER

pft GPS with Network Time Server

SPECIFICATIONS

- Dimensions: 1U x 19 in. x 12 in.
- Relative Humidity: 0 to 95% (non-condensed)
- Power Requirements: 100 to 260 VAC <10 W

HIGHLIGHTS

- GPS receiver provides 1 PPS signal suitable for use as ETR to MIDS, MIDS JTRS, and STT terminals. GPS antenna and cable included.
- GPS Tracking: 12 parallel channels
- Acquisition Time: <1.5 min (warm start)
- Accuracy (1 PPS): <20 ns
- Holdover: <0.2 micro seconds/day (Rb opt)
- 100/10Base-T Ethernet
- NTP Telnet, TCP/IP, FTP
- Monitor/Control I/F
- Alarm indicator and output
- GPS Antenna and 100 ft cable included
- 1 PPS: 10 V, 5 V and 5 V differential

PRODUCT DESCRIPTION

- pft GPS with Network Time Server

RF NETWORKS

The RF Network Unit permits multiple RF devices to be hubbed together in a network. It is intended for lab usage and operates over a frequency range of 0 to 2 GHz. There are 6 Type N female RF low level (1 W) connectors on the chassis and a variable step attenuator that ranges between 0 and 110 dB in 1 dB steps.

The RF Network has an approximate 14 dB insertion loss between ports, and is perfect for bench-top or field use. Included with the unit are four 50-Ohm terminations for use on unused RF ports. The RF Network is available in a 19-inch rackmount model and a portable model measuring just 7 x 7 x 2 in.; small enough to fit in a field service kit.

Rackmountable Model

SPECIFICATIONS

Rackmountable Model

- Dimensions: 9 x 3.5 x 8 in.
- Weight (Approximate): 5.5 lb

Portable Model

- Dimensions: 7 x 2 x 7 in.
- Weight (Approximate): 3.5 lb

PRODUCT DESCRIPTIONS

- Rack-Mountable Model
- Portable Model

Portable Model

RF ANTENNA CABLES

RF Antenna Cable, Outdoor NM-NM 50 ft Heliax with 2.34 dB of loss per 100 ft DC-18 GHz, 1900 W max.

RF Antenna Cable, Outdoor NM-NM 50 ft RG-214 double-shielded with 8 dB of loss per 100 ft.

PRODUCT DESCRIPTIONS

- RF Antenna Cable, 50 ft Heliax
- RF Antenna Cable, 50 ft RG-214 double-shielded

PORTABLE ANTENNAS

Be prepared! Armed with the 5 lb L3Harris Portable Antenna, a field service engineer, training instructor or test engineer can conduct limited ground-to-air tests in the field. This L-band blade antenna is delivered with a 52 in. tripod and features a quick-connect mounting shoe that holds the antenna plate. It can be used in testing related to all L-band applications and is packaged in an expandable, zippered nylon bag.

SPECIFICATIONS

Portable Antenna

- Dimensions: 11 x 1.3 in.
- Weight: 2 lb

Portable Antenna (Tripod-Mounted)

- Dimensions: 24 x 8 in. (in bag)
- Weight: 5 lb

HIGHLIGHTS

Portable Antenna

- L-band 960 to 1215 MHz
- 200 W
- +2dBi nom
- Type N Female RF Connector
- Portable Antenna (Tripod-Mounted)
- L-band 960 to 1200 MHz
- 250 W at 50,000 ft
- Lightweight metal tripod

PRODUCT DESCRIPTIONS

- Portable Antenna
- Portable Antenna (Tripod-Mounted)

L-BAND GROUND ANTENNA

An L-Band antenna is required to transmit Link 16 over the air. L3Harris recommends the high gain XVO 7-960-1215/1120 omni antenna made by European Antennas. This antenna covers the Link 16 band, 960 to 1215 MHz, and has a 7 dBi gain, nearly doubling the range of a system. Receive sensitivity—usually the limiting factor for communications with distant airborne platforms—is increased significantly. The antenna is lightweight (1.7 kg) and has an alloy base plate with 4 stainless steel bolts, a 1 in. offset spigot, and M16 Stainless Steel bolt and washers. Mounting pole and guy wires are not included.

SPECIFICATIONS

- Dimensions: 40 x 3 in.; 1029 x 76.2 mm
- Weight: 3.75 lb

HIGHLIGHTS

- L-band: 960 to 1215 MHz
- Gain: 7 dBi
- Operating Temperature: -40˚ to +50˚ C

PRODUCT DESCRIPTION

- L-band Ground Antenna

LINK 16 ENVIRONMENT GATEWAY STIMULATOR (LEGS)

Link 16 Environment Gateway Stimulator (LEGS) is an essential terminal support tool. Prime developers use this software in the integration of MIDS terminals and ground facilities, and field service engineers rely on the LEGS application for terminal troubleshooting and maintenance. The tool is also used by test facilities for Link 16 system performance measurement and evaluation, and by instructors for MIDS training.

A low-cost version (LEGS-Lite) that does not include the scenario generation or situation display capabilities is also available. The J LEGS version of the application implements the JTRS Platform A interface and is available to U.S. customers.

L3Harris can tailor LEGS Remote Interface Modules (RIMs) to support your special requirements. We have developed RIMs for GPS testing, ETR testing, OTAR testing, voice testing and navigation testing. And, we have an API to support automated testing using products such as LabView and VEF-Pro. An ICD is available by special request. If you have special needs, let us know.

HIGHLIGHTS

- Terminal initialization control
- Terminal status monitoring
- Detailed recording
- MIDS re-programmer
- Scenario generation
- Situation awareness
- Gateway to up to 8 client applications
- Multi-terminal control

SUPPORTED TERMINAL TYPES

- MIDS-LVT(1) Platform A, B, D, I, Q, R, S and Support Port
- MIDS-LVT(2) X.25, Plaform J, JREAP-C and Support Port
- MIDS-LVT(1)/(2) Block Upgrade 2 Platform A, D, R and Support Port
- MIDS on Ship (MOS) Platform M and Support Port
- MIDS-LVT(3) FDL and Support Port
- Class 2 Navy Shipboard, Navy Airborne, Army 2M and USAF F-15
- MIDS JTRS Platform A, I, J, M, V, W, Support Port and Host Interfaces
- STT Platform J
- BATS-D Platform J

LEGS-LITE

- A low-cost version of the LEGS software that does not include the scenario generation or situation display capabilities is available

PRODUCT DESCRIPTIONS

- LEGS-MIDS
- LEGS-LITE
- LEGSMIDS JTRS
- LIVER Software (Qty 10 Licenses)
- LIVER Software (Qty 5 Licenses)

Licenses are available for installation on customer-furnished equipment

LINK 16 FLIGHT-LINE TOOL (LiFT)

L3Harris' Link 16 Flight-line Tool (LiFT) software is designed to support "go/no-go" testing and troubleshooting of Multifunctional Information Distribution System-Low Volume Terminals (MIDS-LVT) in a field environment. The LiFT application is available installed on a tablet PC or as a software package for customers who want to install the LiFT application on their own equipment.

This software is intended for use by technicians and allows the user to read, reconfigure, update and monitor terminal parameters. Data is provided in dynamic graphical displays.

HIGHLIGHTS

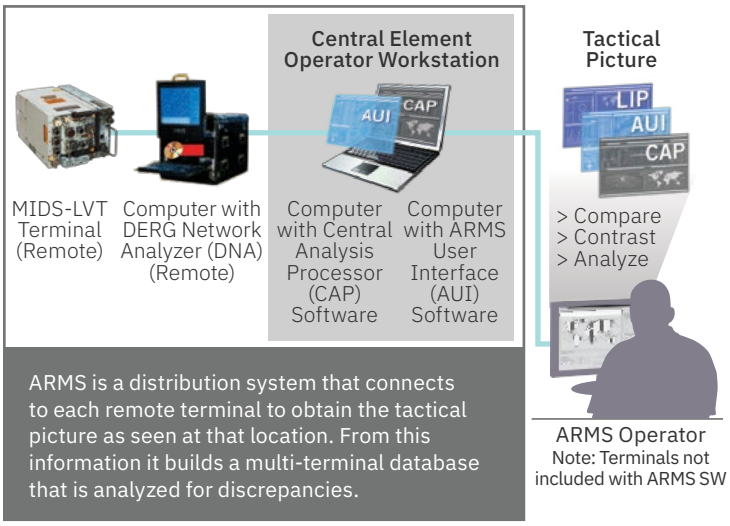
- Obtain Terminal Status: IPF Fail, TDMA Rcv/Tx Fail, TDMA Degraded, Thermal Overload and Sanitization Confirmation
- Initiate Built-In Test (IBIT)
- View SDU alert status
- View position data
- View cockpit ID
- Modify a limited number of settings: Set/Change CCPD, STN, NTR, Time, Tx Mode, Output Power Mode, TACAN Settings and Voice Channel
- Load an Initialization file
- Start net entry
- Participate in a network
- View 12 sec counters
- Observe received RF messages by type
- Exercise TACAN function
- Sanitize terminal for shipment

PRODUCT DESCRIPTIONS

- LiFT Handheld Kit
- Software License and CD

AMALGAMATED REMOTE MANAGEMENT SYSTEM (ARMS)

ARMS integrates multiple views of a network that is maintained over a large geographical area and locked onto GPS time. A delayed synchronization capability on a single terminal is not required to detect unauthorized time slot reuse; the network nodes themselves perform this function for any units within site of more than one ground station. ARMS operates over a widely distributed geographical installation and accepts received data from each terminal node, integrating this data and analyzing it to detect and identify anomalies.



HIGHLIGHTS

> Enable distributed data collection by implementing a multi-homed monitoring system
> Allows coordinated network analysis from multiple viewpoints
> Provides a synthesized analysis of the network architecture
> Plug-n-Play capability—no changes to the existing system of terminals should be necessary
> Works with all MIDS and JTRS terminals
> Scalable with no preset limits for terminal connections
> Provides up-to-date system-wide status with drill-down capability of terminal BIT
> Provide detailed IPF causal analysis and fault isolation
> Functions as an anomaly-event-driven, operator-alert-based interface to facilitate expeditious detection and correction of network problems

ARMS IS BUILT WITH THREE FUNCTIONAL ARCHITECTURAL PIECES

> DERG Network Analyzer (DNA
> Centralized Analysis Process (CAP)
> ARMS User Interface (AUI)

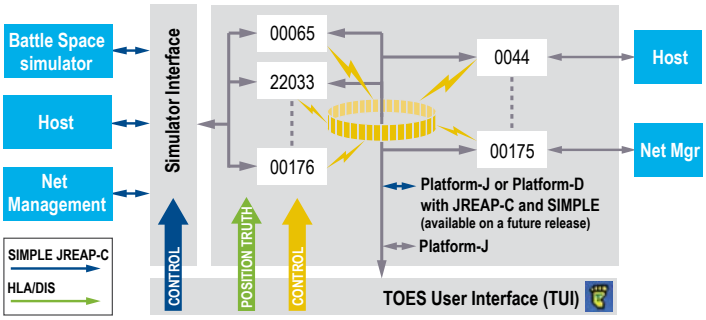
PRODUCT DESCRIPTIONS

> ARMS master control and two terminals at remote site
> ARMS annual software update subscription
> ARMS FLEXOR feature

ELIMINATE THE NEED FOR MULTIPLE LINK 16 TERMINALS

TOES is a multi-terminal network simulator providing a scalable software emulation of a Link 16 network.

TOES leverages current L3Harris Link 16 development efforts including software for the Small Tactical Terminal (STT), the Amalgamated Remote Management System (ARMS) and the Navigation Testing Set.



TERMINAL OPERATIONAL ENVIRONMENT SIMULATOR (TOES)

HIGHLIGHTS

- Simulates multiple Link 16 terminals
- Employs actual network designs and platform loads
- Regulates bandwidth and provides accurate time slot usage
- Supports stacked nets and contention access
- Implements paired slot relay
- Simulates simple RF Line-of-Sight between terminals
- Provides Platform-J Host Interface for each simulated terminal
- Simulates terminal latency
- Simulates TOA (Range) Delay between pairs of hosts
- MIDS JTRS version supports 1553 Platform A and Ethernet Platform I

USE TOES TO

- Test and validate network designs
- Send tactical data through multiple units from a single Platform-D or Platform-J interface for use with 3rd party battle-space simulator tools
- Evaluate new data exchanges including those using stacked nets
- Create a test environment for network monitoring and management systems
- Create an operational environment for training Link 16 network managers

SOFTWARE ARCHITECTURE

- TOES User Interface
- TOES Engine Control
- Unit Position Truth Data
- Terminal Host Interfaces

PRODUCT DESCRIPTION

- TOES

MIDS/LINK 16 TRAINING

PREREQUISITE

Generally, attendees of the course should be familiar with Link 16, Link 16 terminals and functions of a host system when interfacing to a Link 16 terminal.

WHO SHOULD ATTEND

- Anyone who wants a greater understanding of the capability of a Link 16 terminal, or who tests or analyzes tactical data links employing a Link 16 terminal.
- Users of L3Harris' Link 16 software tools.

COURSE STRUCTURE

- Each course employs a combination of dialectic lecture and hands-on laboratory.
- The typical percentage breakdown of lecture/lab hours is 40/60.
- Practical lab sessions reinforce all course instruction, providing the student with hands-on experience with L3Harris' Link 16 terminals and software tools.
- The lab sessions develop the skill and knowledge of each student for safe and efficient operation of L3Harris' Link 16 terminals and software tools.

ADDITIONAL COURSE INFORMATION

SCHEDULE

Training courses are available for as short as 1 day and as long as 2 weeks (depending on the material to be covered). Class size is normally limited to 12 students.

Contact us for individual pricing information.

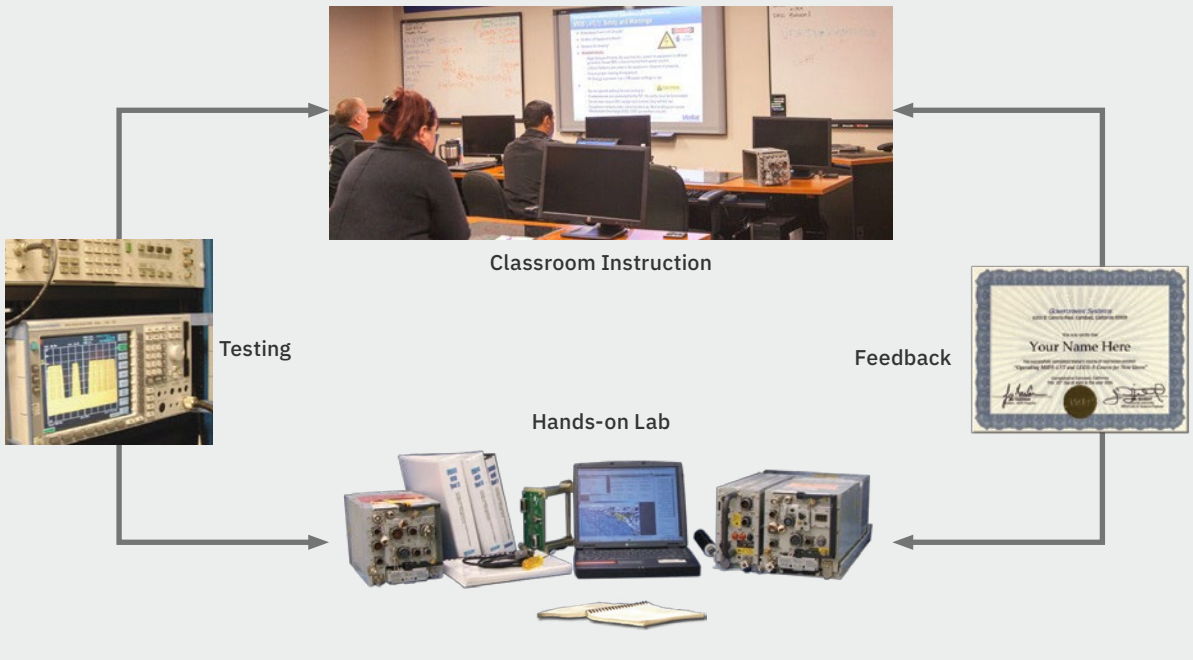
LOCATION

The preferred training location will vary depending on the course and training need. Contact us for flexible arrangements.

NOTE

Training at the customer's facility requires the provision of terminals and support equipment as Customer Furnished Equipment.

Classroom instruction, materials and lab procedures are created from testing data and customer feedback.



COURSE OFFERINGS

L3Harris offers a variety of training courses related to Link 16 and the operation of the MIDS terminals. We also offer training on our software products including LEGS, ARMS and TOES. Course outlines are available upon request. Tailoring of the standard syllabus to meet specific customer needs is possible—let us know your requirements. The training courses listed below are offered at group rates. We also offer courses at individual rates. Contact L3Harris for further information.

101 **MIDS Familiarization (Short Course)**
1-day training course on MIDS-LVT

102 **LEGS Familiarization (Short Course)**
1-day training course

103 **Link 16 Familiarization (Short Course**
2-day training course on the introduction to Link 16

103A **Link 16 Familiarization (Short Course Minimum of 3 Students)**
2-day training course (per student)

104 **MIDS and LEGS Familiarization**
3-day training course

105 **MIDS Specifications and Documentation (Short Course)** 1-day training course on MIDS ICDs and SSS

106 **Link 16 Flight-line Tool (LiFT)**
2-day training course

106A **LiFT Training**
2-day training course

107 **LEGS Familiarization & Introduction to LiFT**
3-day training course

108 **LEGS Operation**
2-day training course

108A **LEGS Operation (Minimum of 3 Students)**
2-day training course (per student)

201 **Introduction to MIDS/Link 16 for Beginners**
5-day training course (priced individually for entire week)

201A **Introduction to MIDS / Link 16 for Beginners**
5-day training course (per student)

202 **MIDS/LEGS: Introduction to Operations and Maintenance** 5-day training course

202A **Introduction to MIDS & LEGS Operations & Maintenance (Minimum of 3 Students)**
5-day training course (per student)

203 **MIDS & LEGS: Operations and Maintenance for the Advanced User**
5-day training course

203A **Advanced Training to MIDS & LEGS Operations & Maintenance**
5-day training course (per student)

204 **MIDS/LEGS: Operations and Maintenance for the Field Service Engineer** (Available to U.S. Citizens)
7-day training course focusing on the field level maintenance of the MIDS-LVT to include SRU removal

204A **Advanced Training to MIDS & LEGS Operations & Maintenance for Field Service Engineers**
(Available to U.S. Citizens)
7-day training course (per student)

205 **MIDS JTRS: Operations and Maintenance (Available to MIDS-JTRS Users)**
5-day training course

205A **MIDS JTRS: Engineering Course (Minimum of 3 Students)**
5-day training course

205B **MIDS JTRS: Operations and Maintenance (Minimum of 3 Students)**
5-day training course (per student)

206 **ARMS: Link 16 Network Management**
3-day training course

206A **ARMS Link 16 Network Management with C2 Adjunct Capability Training (Minimum of 3 Students)**
3-day training course (per student)

206B **ARMS Link 16 Network Management Training**
3-day training course (per student)

207 **TOES: Terminal Operational Environment System**
2-day training course that focuses on the fundamentals, set-up and operation of TOES in a simulated environment. Course can be tailored to customer requirements

208 **MIDS Navigation Training**
3-day training course intended for programmers and test analysts responsible for navigation implementation and test verification

210 **VLATS Training (Available to VLATS Users)**
5-day training course focusing on the fundamentals and principles of the VLATS

213 **MIDS Flight Recorder**
4-day training course

215 **LEGS and TOES Combination Training**
5-day training course

215A **LEGS and TOES Combination Training (Minimum of 3 Students)**
5-day training course (per student)

NOTES

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L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.

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