TOOLS TO SUPPORT TACTICAL DATA LINK (TDL) SYSTEMS TESTING

The Link Host Simulator (LHS) is one in a family of Data Link Test Tools (DLTTs) developed and maintained by the Tactically Communication Solutions (TCS) group at the Space and Naval Warfare Systems Center Pacific (SSC Pacific), Code 53524, in San Diego, California, to facilitate TDL integration and interoperability testing.

By emulating a Link 16 (TDL J) host system and providing an extensive situational display, the LHS provides a low-cost alternative to having a TDL J-capable host system in the test facility or in the field when real hosts are not available. Featuring a direct interface to a variety of Link 16 terminals via a MIL-STD-1553B interface, the LHS can control the terminal, or passively monitor the 1553B interface between the terminal and its host.

The LHS generates TDL messages based on ownship configuration data and truth data sources, including Distributed Interactive Simulation (DIS), High Level Architecture (HLA), and SIF Script Network (SSN). It can use GPS input for ownship navigation data. The LHS can transmit Link 16 message traffic using the Standard Interface for Multiple Platform Link Evaluation (SIMPLE) protocol as defined in STANAG 5602 or the Joint Range Extension Application Protocol as defined in MIL-STD-3011, Appendix C (JREAP-C).

The LHS is available in either a desktop or laptop configuration.

FEATURES, CAPABILITIES

- Transmits and receives TDL J data
- Emulates one primary and 16 secondary Joint Tactical Information Distribution System (JTIDS) Units (JUs), with individual track block assignments, navigation, sensor bias errors, and active or passive detection capabilities
- Controls the terminal, including loading and updating terminal initialization parameters
- Provides the terminal with position data for Precise Participant Location and Identification (PPLI) transmission
- Provides operator controls
  - Locally held tracks can be added and reported
  - Operator can build and send any J message, modifying all desired fields, and can send and respond to addressed messages
  - Air control capability
- Processes Command and Control (C2) conflict and Force Order messages
- Breaks out TDL J messages (MIL-STD-6016C)
- Provides selectable geographic tactical situational awareness display of any/all Link 16 data
  - Real-time map can be configured to show latitude/longitude grids, coastal outlines, and major cities
  - Offers filterable display of track symbology from truth, Link 16 and/or a specified IU’s detection data
- Flexible map controls
- Can hook tracks for detailed readout
- Scrolling lists of TDL J messages, Data Extraction and Reduction Guide (DERG) messages, DIS PDUs, and SSN events can be displayed
- Sub address list box displays all input/output messages between terminal and host
- J16.0 imagery processing to/from National Imagery Transmission Format (.NTF) files
- Data extraction (DX), analysis and replay capabilities
  - External time synchronization for DX
  - DX of I/O messages exchanged over 1553B bus
  - Data replay of previously recorded DX file for post-mission analysis
- Monitors terminal interface
  - Passively monitors interface to Navy Air and Ship, Modular Control Equipment (MCE), JTIDS, and Multifunctional Information Distribution System (MIDS) terminals via the 1553 bus
  - Processes all traffic to/from the terminal and displays relevant tactical information
  - Can output all data received from the terminal over the J REAP-C and SIMPLE interfaces

Note: Product capability may be limited for some customers based upon releasability/disclosure.
TERMINALS SUPPORTED

- JTIDS Class 2H Navy Air and Navy Ship
- MCE
- F-15
- E-3 (1553 only)
- MIDS Low-Volume Terminal (LVT)

APPLICATIONS

- Proof-of-concept testing
- Host development testing
- Interoperability testing
- System validation
- Deployment testing
- Crew training
- Mission monitoring
- Mission evaluation
- Crew debrief
- Impact analysis
- Demonstrations
- Installation checkouts

SYSTEM COMPONENTS/SUPPORT

Data Link Test Tool systems are configured at SSC Pacific. The LHS application package includes:

- High-speed single board computer, monitor, and keyboard (laptop configuration available)
- Removable hard drive and DVD-RW drive
- Timing board (as applicable), I/O boards and terminal interface board
- Windows® operating system software
- LHS application software
- On-site system installation and familiarization
- One year of technical support, hardware warranty, and software updates

FURTHER INFORMATION

Further information on DLTTs and other TCS services is available at the following:

TCS Web Site: http://gateway.spawar.navy.mil
Email: gwinfo@spawar.navy.mil
Telephone (toll free in the U.S.): 1-888-GWLinks (495-4657) or (619) 553-6622

Points of Contact

Tactical Communication Solutions
Business Area Manager
Space and Naval Warfare Systems Center Pacific
53560 Hull Street
San Diego, CA 92152-5001
USA
Telephone: (619/DSN) 553-3224
FAX: (619/DSN) 553-8221

TCS Sales and Customer Service
Telephone: (619) 767-4374
FAX: (619/DSN) 553-8221

TCS Foreign Military Sales
Telephone: (619) 767-4374
FAX: (619/DSN) 553-8221

TCS Application Engineering
Telephone: (619/DSN) 553-6094
FAX: (619/DSN) 553-8221

Windows® is a registered trademark of the Microsoft corporation in the U.S. and other countries.

SD 854 • January 2010
Approved for public release; distribution is unlimited.