

Our mission – peace and security.



LIU • Link Interface Unit

The Data Link Interface for Weapon System Simulation

IABG's Link Interface Unit (LIU) provides an interface (middleware) that enables an application to participate in an Ethernet-based Link 16 network. The LIU also translates the STANAG data structures into data native for the simulation systems. The complex send and receive rules, track correlations and reporting responsibility compliance ensures system compliance with STANAG 5516.

Background

Coalition forces rely on the use of NATO-standardised Tactical Data Links (TDL), which allow an interference-free, jam-resistant and secure data transmission in near real-time.

During military exercises and system interoperability testing, Link 16 is used to distribute data via a TCP/IP connection between real and simulated systems.

Every simulation system, connected to a Link 16 data link must comply with the rules defined in Link 16 STANAG 5516.

Problem Statement

The connection of a simulation system to a Link 16 network requires extensive technical knowledge concerning the data formats, algorithms, and send and receive rules described in STANAG 5516.

Using LIU encapsulates this knowledge and provides it as a ready-to-use component via an easy to use and adaptable programming interface.

Use Case

By utilizing LIU, systems are able to exchange Link 16 data over wide area networks with other simulations or with weapon systems in real-time.

LIU performs a far greater task than translating one network protocol to another. LIU provides direct access to TCP/IP based Link 16 networks for both simulation systems and real C2 systems.

LIU enables simulations and legacy systems to participate in Link 16 networks either in Ethernet-based or from a UHF based Link 16 terminal (via gateway).

Among others, following functionalities are provided:

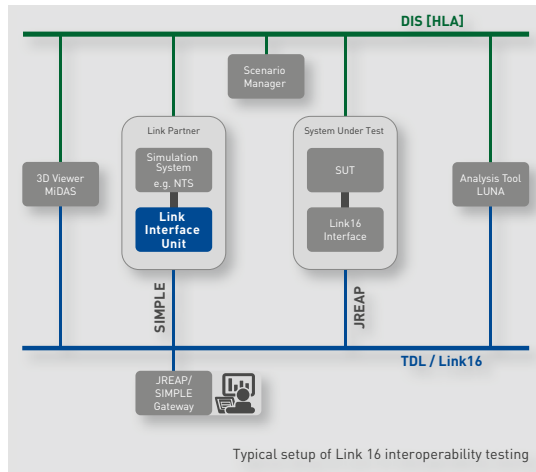
- Automatic correlation of received tracks
- Automatic handling of the reporting responsibility
- Automatic handling of data update requests
- Automatic handling of receipt compliance
- Link 16 track management and commands

Value Proposition

Minimal knowledge of Link 16 logic and rules are required as LIU algorithms follow these automatically.

LIU is easily extensible to cover other C2 based implementations across Link 16 platforms.

LIU significantly reduces the effort required to establish Link 16 capability of systems ultimately enabling link partner (see right figure) participation in TCP/IP-based Link 16 networks.



Implemented Link 16 messages as defined in STANAG 5516	
J2.0	Indirect Interface Unit PPLI
J2.2	Air PPLI
J2.3	Surface (Maritime) PPLI
J2.4	Subsurface (Maritime) PPLI
J2.5	Land (Ground) Point PPLI
J3.0	Reference Point
J3.2	Air Track
J3.3	Surface (Maritime) Track
J3.4	Subsurface (Maritime) Track
J3.5	Land (Ground) Point/Track
J3.6	Space Track
J3.7	Electronic Warfare Product Information
J7.0	Track Management
J7.1	Data Update Request
J7.2	Correlation
J7.3	Pointer
J7.5	IFF/SIF Management
J7.7	Association
J9.0	Command
J9.1	Engagement Coordination
J10.2	Engagement Status
J12.0	Mission Assignment
J12.6	Target Sorting
J13.2	Air Platform and System Status
J13.3	Surface (Maritime) Platform and System Status
J13.4	Subsurface (Maritime) Platform and System Status
J13.5	Land (Ground) Platform and System Status
J28.20	Text Message

Key Advantages

- Links simulation systems to a Link 16 network
- Proven operation with Link 16 Gateway
- Advanced Graphical User Interface (GUI)
- 100% ITAR-free COTS Windows 10 Software

Simulation Technical Data and Compliance

- SIMPLE STANAG 5602
- Link 16 STANAG 5516

References

Since 2006 LIU supports the following users:

- German Armed Forces Simulation and Test Environment (SuTBw)
- SimZ Marine
- SimZLw
- SAAPES (NetSPATE)
- Successfully verified in various Joint Project Optic Windmill (JPOW) exercise
- Multinational military exercises

Scope of Supply and Delivery

- USB Installer and product documentation
- API for MS Visual Studio
- Optional Link 16 non C2 Messages plug-in
- API Programming Manual

System Support & Training Services

IABG software products are delivered in accordance with their respective software release plans and maintenance agreements. Support plans delivered with IABG products include regular software and maintenance updates.

IABG training courses deliver the essential content required to ensure trainees are able to apply systems in the context of their operations. All aspects of the use, configuration and administration of the system are covered. Successful completion of the interactive training provides the basis to support continued proficiency improvement.

For further information please contact dssolutions@iabg.de



AUTOMOTIVE



INFOCOM



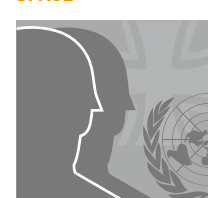
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