



Joint Range Extension (JRE) Gateway

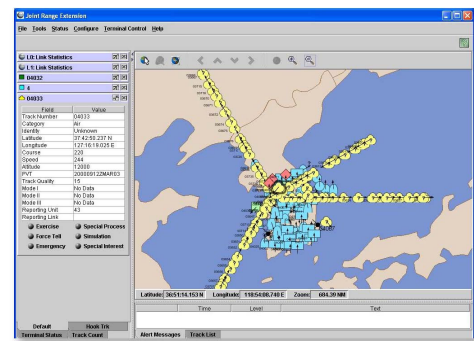
Complete Interoperability

JRE provides the Joint Interface Control Officer (JICO) with multi-point, interoperable, Beyond-Line-of-Sight (BLOS) Link-16 connectivity between Link-16 networks and Service C2 platforms.

JRE utilizes multiple Link-16 message transport protocols, which are adaptable to various communication media. The protocols can be incorporated into both legacy and developing systems. The protocols include:

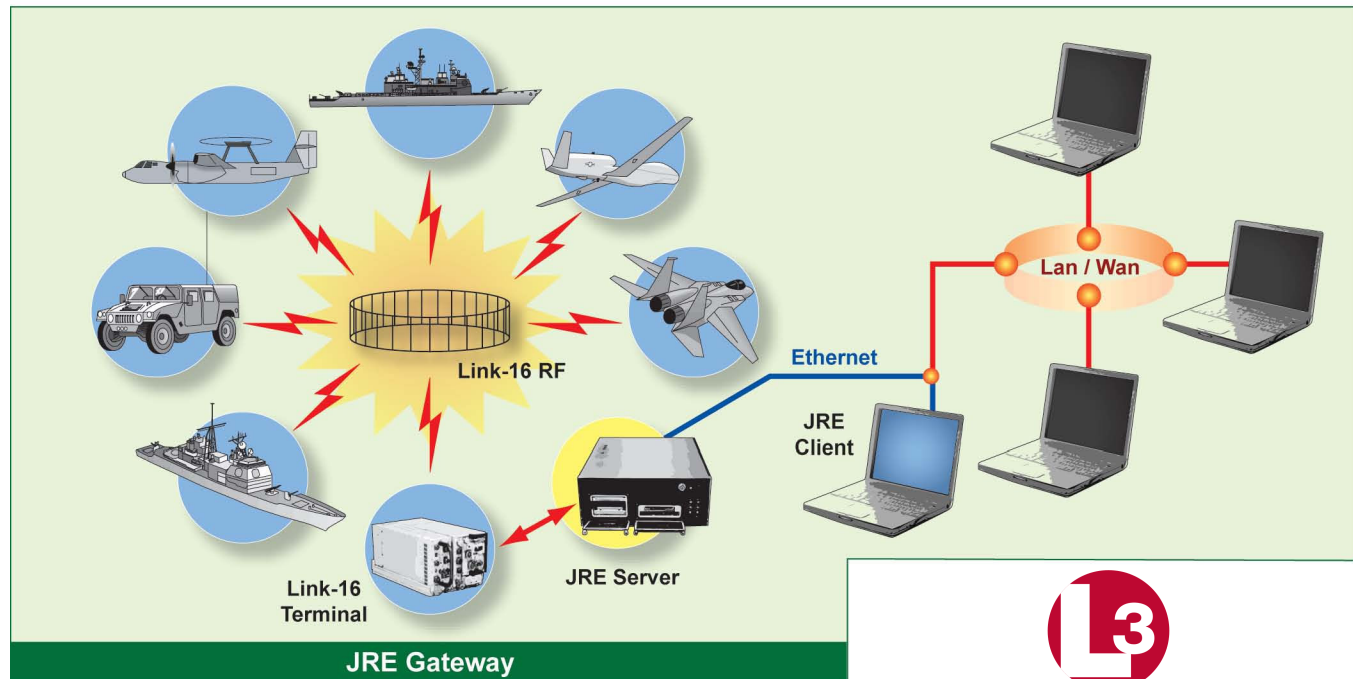
- JREAP A – UHF DAMA (examples: PRC-117F, PSC-5, ARC-210, WSC-3)
- JREAP B – Serial (examples: STE, STU)
- JREAP C – Ethernet (examples: SIPRNET, NIPRNET)

JICO-proven JRE gateways use long-haul communication equipment to forward Link-16 messages BLOS to other JREs or Command and Control systems.



JRE Gateway – User Interface

Simple multi-platform graphical user interface that provides a configurable Situational Awareness Map display, tabular display, Link and Filter control, and provides multiple monitor and control displays.



communications
JRE

JRE Client allows full control of the JRE Server from anywhere via IP - LAN, WAN or direct connect. Clients can be run simultaneously on any workstation or laptop – Windows, MAC-OS, LINUX or UNIX.

Joint Range Extension (JRE) Gateway

JRE (Version 5.2) Capabilities

Full Link-16 (J-Series) message set	JRE routes all Link-16 messages – Defined or undefined J-Series messages – Rx, Tx, and Fwd for J-to-J connectivity
Multiple links allow for redundant links	JRE has a simple to use routing matrix which allows users to send link information from one link to another link using industry leading data loop protection.
Filters = Control	Powerful link filtering tools – provides J link filtering on both the transmit and receive sides- Create, add, modify, and copy filters (using Filter shape or Filter Sub-type) either Geographic or Global filters
Terminal control and NDLE editing	Complete Link-16 Terminal control and status – full NDLE editing capabilities Hosts Multiple simultaneous Link16 Terminals
Precise message timing	All J messages can be GPS time-tagged and position extrapolated
Multiple long-haul links	JRE Supports unlimited simultaneous long haul links (limited by CPU only)
Easy to use	JRE is GUI based, requires minimal operator training and has context sensitive on-line documentation



Warfighter Benefits

- Robust BLOS Link16 connections
- Reduces requirements for airborne JTIDS/MIDS relays
- Increases net capacity by optimizing relay timeslots
- Remote access to theater picture
- The only Link16 router
 - Full J-Series message set
 - Smart forwarding
 - Supports any combination of SATCOM, IP or landline links
- Industry leading Data loop protection
- JITC Certification
 - MIL-STD-6016C
 - MIL-STD-6020 APP E
 - J-to-J forwarding
- MIL-STD-3011 JRE Application Protocol
- ATO/ACO Parsing
- Client Features Configurable roles
- Load Preferred GUI Layouts
- Increased C2 Functionality
- J16.0 Imagery—Created/Displayed
- J28.2 Preformatted Templates
- Mil-STD-3011—Packet Inspector
- Host Multiple/Simultaneous Link16 Terminals
- High reliability of system
- Low data latency
 - 20MS nominal (Ethernet)
 - 40MS nominal (Serial)
- High track capacity
 - Over 25,000 tracks

Communication Protocols

MIL-STD 3011, Appendix A UHF DAMA	Network controller Network participant Network broadcast Network listener
MIL-STD 3011, Appendix B Point-to-Point	Synchronous (RS-422/449) Asynchronous (RS-232)
MIL-STD 3011, Appendix C Ethernet	TCP/IP Server TCP/IP Client UDP/IP Unicast
MIL-STD 1553B	1553 Bus Protocol 1553 IP
Satellite TADIL-J (STJ) UHF DAMA	S-TADIL-J Gateway Controller (STGC) S-TADIL-J Gateway Scheduler (STGS) S-TADIL-J Gateway Unit (STGU)
Serial-J, MTDS	Asynchronous (RS-232)
SIMPLE-J, Serial	Asynchronous (RS-232)
SIMPLE-J Ethernet	TCP/IP Server TCP/IP Client
MTC Ethernet	TCP/IP Server TCP/IP Client
MTDS Ethernet	TCP/IP Server TCP/IP Client
Situation Awareness Data Link (SADL)	11x 11xy
Link-16 Terminal	MIDS LVT-1 (Ethernet) MIDS LVT-2 (Ethernet) MIDS LVT-2 (X.25) MIDS LVT-11 IP MIDS LVT-3 (1553) USN E-2 (1553) USAF E-8 (1553) USAF F-15 (1553) USAF MCE (1553) USMC MCE (1553) US Army 2M (X.25)

Command and Control Systems & Software (C2S2) Division

3033 Science Park Road Phone: (800) 765-3197
San Diego, CA 92121 Email: jresupport@L-3Com.com



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