Glossary

A2C2	army airspace command and control
AAR	after-action review
AAT	armored artillery (as found in Appendix D, EPLRS Symbology)
ABCS	Army Battle Command System
ABMOC	Air Battle Management Operations Center
ABN	airborne (as found in Appendix D, EPLRS Symbology)
AC	alternating current
ACE	analysis control element
ACK	acknowledge(d) or acknowledgment
acknowledge control	A network procedure that provides the sending unit with evidence that a receiving unit has received the message, or TU, sent to it.
acknowledgment	An indication by return message (or TU) of reception of a message or TU.
ACR	armored cavalry regiment
ACSO	assistant corps signal officer
ACT	active (as found in Table 6-1, Operational Program Alert Indications)
active circuit	A command circuit that has been activated (circuit assignments have been sent to the unit).
ACTS	advanced communications technology satellite
ACUS	Area Common User System
AD	air defense
ADA	air defense artillery
ADATS	Air Defense Antitank System
ADDS	Army data distribution system

ADDSI Army data distribution system interface – a communications protocol based on Consultative Committee on International Telephony and Telegraphy (CCITT) Recommendation X.25 This protocol is used for host-to-host communications with EPLRS serving as the communication network.

ADJ adjacent (as found in Table 6-1, Operational Program Alert Indications)

ADSO assistant division signal officer

advisory A condition potentially requiring NCS-operator attention. Each advisory is maintained by the system and displayed to an operator upon request.

AEP altitude error probable

AF aviation (USAF) (as found in Appendix D, EPLRS Symbology)

AFARN Air Force air request net

AFATDS Advanced Field Artillery Tactical Data System

AFO artillery forward observer (as found in Appendix D, EPLRS Symbology)

AF-RS airborne fixed wing-radio set

AFU airborne fixed wing unit (as found in Appendix D, EPLRS Symbology)

AGU auxiliary ground unit

AGU GR-RS; GW-RS (as found in Appendix D, EPLRS Symbology)

ALT alternate (as found in Table 6-1, Operational Program Alert Indications)

AMB airmobile (as found in Appendix D, EPLRS Symbology)

AMDPCS Air and Missile Defense Planning and Control System

AME armored/mechanized engineer (as found in Appendix D, EPLRS Symbology)

AN/UGC-74(V) This terminal communications set in the NCS is commonly referred to as the keyboard/printer. It provides selected hard copy printouts of database information. It also functions as a temporary backup device to the DCC for data input and output.

AN/USH-26(V) This signal data recorder-reproducer set in the NCS is commonly referred to as the CMTU. The CMTU loads and initializes system programs from magnetic tape cartridges. The CMTU loads and records library, map, and data logging.

AN/UYK-44(V) This data processing set in the NCS is a general purpose computer system. The CMP, DCP, and NCP are AN/UYK-44(V)s. It is a 16-bit computer, operating at .775 millions of instructions per second (MIPS). The CMP and NCP have 256K words of memory. The CMP, DCP, and NCP have a Math Pac option that provides common math functions. Each processor also has four MIL-STD-188C serial I/O channels, four MIL-STD-1397D serial I/O channels, and eight MIL-STD 1397B parallel I/O channels. The CMP also has two MIL-STD 1553B parallel I/O channels.

AN/UYK-7(V) This computer set is located in the NCS and is a general purpose computer system. The TOAP is an AN/UYK-7(V). It is a 32-bit computer, operating at .5 MIPS and has 48K words of memory and 16 MIL-STD-1397B parallel I/O channels.

ANCD automated net control device

ANT antenna

ANT antenna (as found in Table 6-3, RS Alert Indications)

AO area of operations

AOR area of responsibility – the geographic region to which an NCS is assigned control responsibility.

APA airborne power adapter

ARC armored cavalry (as found in Appendix D, EPLRS Symbology)

ARM armor (as found in Appendix D, EPLRS Symbology)

ARO auxiliary readout

AR-RS airborne rotary wing-radio set

ARTEP-MTP Army Training and Evaluation Program-Mission Training Plan

ARU airborne rotary wing unit

ARU AV-RS (as found in Appendix D, EPLRS Symbology)

ASAS all source analysis system

Assigned Network Capacity The actual total capacity (timeslots) assigned to all RSs for a particular function divided by the total capacity allocated to the NCS for that function. It is defined for the EPLRS control function and the EPLRS communication function.

Assignment Overlay The utilization of two communications circuit assignments in the same timeslot block; one is transmitted and one is received. They must be at the same rate. This only applies to duplex circuits.

AT antitank (as found in Appendix D, EPLRS Symbology)

ATY artillery (as found in Appendix D, EPLRS Symbology)

AUTH authorization, authorized

Authentication A technique of verifying the identity of an RS operator to ensure that an enemy is not using captured equipment.

Authorized Message Set A set of request messages to which a given RS is authorized to receive responses.

Average Position A smoothed position that is derived by averaging a fixed number of measurements taken on a unit while it is at rest.

Average Track Quality An average of the track qualities currently being reported for all tracked units that have track qualities of one through nine.

AVF Army aviation (fixed wing) (as found in Appendix D, EPLRS Symbology)

AVH Army aviation (helicopter) (as found in Appendix D, EPLRS Symbology)

AVIK airborne vehicle installation kit

AVN aviation

AV-RS airborne vehicle radio set

B/R bearing/range

BARO barometer, barometric (as found in Table 6-3, RS Alert Indications)

BD brigade or equivalent command (as found in Appendix D, EPLRS Symbology)

bde brigade

BDI bearing direction indicator

benign environment An environment without electronic countermeasures.

BFA battlefield functional area

bit The basic unit of data. It is binary digit and is encoded to produce symbols. Symbols are encoded to produce chips that are sent to the transmitter.

BIT built-in-test

bn battalion

BOS battlefield operating system

bps bits per second

broadcast message A message delivery system in EPLRS in which the outbound message is sent and relayed in all active TREEs every third frame to cover the entire community.

BRT bright (as found in Table 2-6, URO Device Controls and Indicators)

BSO brigade signal officer

BT battalion or squadron (as found in Appendix D, EPLRS Symbology)

BTRY battery

burst transmission The synchronous EPLRS waveform incorporating a burst transmission that reduces the probability of enemy interception and vulnerability to enemy jamming.

C2 command and control

C2I command, control, and intelligence

C4 command, control, communications, and computers

CAV cavalry

CC command center

CCA communication circuit assignment

CCI controlled cryptographic item

CCITT Consultative Committee on International Telephony and Telegraphy.

CEP circular error probable – the radius of a circle centered on the true horizontal position that contains 50% of the position reports.

CHAN channel

CHKRS1 check radio set 1 (brevity code)

CHNL channel – one of eight possible logical channels to which frequency assignments can be made.

CHS computer hardware software

circuit A circuit defines the path of a needline from source RS to destination RS including the relay RSs. A needline is defined by a user and is implemented as a circuit. There is one circuit for a simplex needline and one, two, or four circuits for a duplex needline. There is a unique CCA for each circuit. There is an associated COI key unique to each needline. The maximum rate for a duplex circuit is once per frame and for a simplex circuit is four times per frame.

circuit assignment The collection of links and timeslot/frequency resources assigned to implement an RS to RS communication capability. A circuit assignment may contain up to two paths and may include multiple destinations (group-addressed, CSMA, MSG).

circuit requirements Circuit requirements are defined by the following parameters: circuit identification, source, destination, recurrence period, needline priority, circuit type, logical channel numbers, waveform mode, logical timeslot indicator, and channel number.

CK check (as found in Table 6-5, RS Fault Message and Recommended Corrective Actions)

CLR clear field (as found in Table 2-6, URO Device Controls and Indicators)

CMP circuit management processor – performs the data distribution, circuit management, and part of the performance monitoring functions of RTEP. The CMP is an AN/UYK-44(V) computer that interfaces with the NCP, DCP, and the NCS-RS. The CMP directs data distribution to the network through the NCS-RS.

CMTU cartridge magnetic tape unit – loads the RTEP to record logging data and loads map and library data (**see AN/USH-26(V)**).

CN CSMA-normal.

CNR combat net radio

CNRI combat net radio interface – the capability that permits FM radios to access the MSE network.

CN-TEK control-traffic encryption key

CO company, battery, or troop (as found in Appendix D, EPLRS Symbology)

COI Key community of interest key – a cryptographic key that is unique for each needline and provides secure host-to-host communications at the secret or confidential level. There is one COI key for all circuits on a needline.

COM communication

COM communications (as found in Chapter 7, EPLRS User Systems); signal/communications (as found in Appendix D, EPLRS Symbology)

COMEX communications exercise

COMM communications (as found in Chapter 6, Troubleshooting)

command key A cryptographic key that is unique for a RS and is used to provide secure message flow between the NCS and the RS via the control network.

command reliability A measure of the messages scheduled by a single command that were actually received.

communicant An RS that another RS has detected (or reported) as a contact.

communicant monitoring The function wherein RSs determine the set of all other RSs in their community from which they are able to receive messages directly.

communication Obtained by establishing a needline between two user specified input/output devices using RSs on the communication network.

communication circuit A circuit between two or more RSs used to support user-to-user communication.

communication throughput The ratio of the number of UMRs received to the total number of UMRs expected during a 30 second interval.

community RSs that are in communication with and are the responsibility of an NCS.

COMSEC communications security – the set of procedures that ensures the communication data is decipherable, including the encoding and encrypting of the data.

CON control

CONOPS continuity of operations – the ability of EPLRS to provide services to the RSs when their controlling NCS becomes unavailable. Host-to-host communications and local subnet will continue without interruption. EPLRS services resume when the RS comes under control of another NCS.

control network The NCS uses this network to send commands (CCAs.) and messages (free text messages) to RSs and receive reports (status reports) and messages (POS/NAV requests) from RSs.

coordination network The RSs use this network to set up relays for user-to-user communications.

CP command post

CPU central processing unit – the control unit and the arithmetic logic of a computer.

CR corps (as found in Appendix D, EPLRS Symbology)

CRTD commander's real time display

CTRL control (as found in Table 6-3, RS Alert Indications)

CRU command response unit – the RF and signal processing portion of the NCS that interfaces the NCP with the user EPLRS community.

CRYPTO Cryptographic

cryptographic key A series of characters generated by a KOK-13 and used by the secure data units (SDUs) for encrypting and decrypting messages. The types of keys used in EPLRS are traffic, command, COI, I-KEK, and rekey.

CS CSMA-short

CSMA carrier sense multiple access –provides nonRS-acknowledged data transfer from up to 120 source RSs to all endpoint RSs on the needline.

CSS combat service support

CSSCS combat service support computer system

C-TEK common-traffic encryption key

CTRL control

CTSBI circuit timeslot block indicator

CV cryptovariables

CVI combat vehicle identification

DA Department of the Army

data distribution function This RTEP function, performed in the CMP, establishes and monitors the circuit required to satisfy the user-to-user communication requirements of the user community. Circuit management effectively spreads CCAs over the available timeslots and frequencies to minimize mutual interference effects.

dB decibel

DC direct current

DCC display control console – provides the main man-machine interface to the EPLRS NCS. The operator inputs commands through switch actions, keyboard entries, and trackball signals. Data is output to a display monitor screen and in tabular form.

DCCR display control console replacement

DCP display control processor – performs RTEP start up, reporting, operator interface, and part of the performance monitoring functions. The DCP is a AN/UYK-44(V) computer that interfaces with the NCP, CMTU, TOAP, DCC, and KBD/PRT. The DCP processes EPLRS network and RS information to be displayed on the DCC and KBD/PRT. Inputs to the DCP include keyboard entries and trackball signals from the DCC or keyboard entries from the keyboard/printer.

DD/HH/MM/SS date/hour/minute/second

DECRU downsized enhanced command response unit *(see ECRU)*

DEP draft equipment publication

DEST destination (as found in Table 6-1, Operational Program Alert Indications)

DI data input – message that sends data from the URO device, PCDP, or host to an NCS or across community boundaries. It is sent in response to a user transmission command. EPLRS service requests are made with DI messages.

distributed routing The process RSs use to find, assign, and maintain relay paths without NCS support. It is initiated in response to activating a needline or a circuit failure. The endpoint RS transmits a circuit request message and it is retransmitted by potential relay RSs. The destination RS receives the circuit request message and transmits a circuit accept message. The circuit accept message is transmitted back along the same path as the circuit request message. The source RS receives the circuit accept message and the path has been assigned. Distributed routing is also known as communication circuit coordination.

DIV division

DIVARTY divisional artillery

DMAIN division main (CP)

DNVT digital non-secure voice terminal

DO data output – message that sends data from an NCS to an RS for use at a URO, PCDP, or host or for transmission to another community.

DOS disk operating system

DREAR division rear (CP)

DSN defense switched network

DSO/BSO division signal officer/brigade signal officer

DTAC division tactical (CP)

D-TEK duplex-traffic encryption key

DUP duplicate

DV division (as found in Appendix D, EPLRS Symbology)

E edit (as found in Table 2-9, URO Display Modes and Descriptions)

EAE echelon alias echelon

EAST/BRG east/bearing – information displayed in the EAST/BRG field on the URO device that provides additional information about the message.

ECB echelons corps and below

ECM electronic countermeasures

ECRU enhanced command response unit – the NCS's interface with the EPLRS network over the control network. The ECRU performs the signal and message processing, network synchronization, and COMSEC functions in the NCS. The ECRU interfaces with the NCP.

EGRU EPLRS grid reference unit

EMF enhanced multiple frequency

EN engineer

ENG engineer (as found in Appendix D, EPLRS Symbology)

EO engagement of operation

EP electronic protect

EPLRS enhanced position location reporting system

EPLRS services Services the EPLRS NCS provides to the users including POS/NAV, ID, initialization of host-to-host communications, and free text messages. The service request is sent from the RS to the NCS in a data input message or UMR, and the response is sent from the NCS to the RS in a data output message. (Also known as NCS services.)

ES electronic support

EW electronic warfare

EWI combat electronics warfare intelligence (as found in Appendix D, EPLRS Symbology)

extended network A group of RSs keeping time and cryptographic synchronization with an NCS-controlled network but is not under direct control of that NCS. The extended network supports existing needlines but does not support EPLRS services (POS/NAV).

F free text message

FA field artillery

FAAD forward area air defense

FAADC2I forward area air defense command, control, and intelligence

FASCAM family of scatterable mines

FAX facsimile

FBCB2 force XXI battle command brigade and below

FDC Fire Direction Center

FFK fixed function key – There are 24 FFKs on the EPLRS keyboard.

FIFV future infantry fighting vehicle

FIST fire support team

FLOT front line of troops

FLT fault (as found in Table 6-3, RS Alert Indications)

FM field manual

FO forward observer

FORC PLA forced PLA – These are PLAs that have been designated by the NCS operator and are not subject to automatic network management reconfiguration (as found in Table 6-3, RS Alert Indications).

FRAGO fragmentary order

frame Is one-fourth second long and divided into 128 timeslots. A frame represents the shortest period of time that the RS can be commanded to transmit a UMR. The RS can be assigned to perform a set of control network functions, including up to four relay actions, four TOA measurements, and a report transmission as often as once every frame. It can be assigned up to four transmissions within a frame on the same communication circuit. A frame is organized into 16 timeslots indexed and eight logical timeslots per timeslot index.

FREQ frequency

frequency hopping The process of pseudo-randomly changing frequency on a specific channel assignment.

FS fire support

G1 Assistant Chief of Staff, G1 (Personnel)

G2 Assistant Chief of Staff, G2 (Intelligence)

G3 Assistant Chief of Staff, G3 (Operations)

G4 Assistant Chief of Staff, G4 (Logistics)

G6 Assistant Chief of Staff G6 (Signal)

gateway Provides a communications link between multiple NCS communities whose timing and cryptographic keys are different. A gateway consists of a pair of RSs, one in each NCS community, connected by cable between their ADDSI ports.

GFAC ground forward air control

GMT Greenwich mean time

GND ground

GOS grade (speed) of service – the type of service provided by a needline as specified by needline rate, needline priority, and needline class (ack/no-ack).

GP group or regiment (as found in Appendix D, EPLRS Symbology)

GPS Global Positioning System

GPU general purpose user

GRIK grid reference installation kit

group-addressed needline A needline (circuit) with a single source and multiple destinations available in which only the source generates messages and no acknowledgment control is performed.

GR-RS grid reference radio set – serves as a reference, relay, or part of a gateway. The GR-RS allows the extension of the network to maintain network connectivity over greater distances.

G-TEK group-traffic encryption key

guard channel The channel allocated for network entry and communication circuit maintenance of the RSs.

GW-RS gateway radio set

H horizontal (as found in Table 2-15, Track Quality)

handover The transferring of control of the RS(s) from one NCS community to another. The handover can be planned or unplanned. In either case, the RS(s) can detect the absence of a controlling NCS and begin to move into another NCS community. A planned handover for a community decreases the AOR boundary of one community while increasing the AOR of another community. When the NCS is shut down in the community decreasing its AOR, the remaining RSs will enter the control network of the operational NCS. An unplanned handover occurs when an NCS becomes unavailable. EPLRS services are lost to RS(s) for a longer time during an unplanned handover.

HDR high data rate – can be a CSMA circuit, a P-P circuit, or a MSG circuit. Together, these three circuit types are known as HDR communication services. HDR circuits can be overlaid on part or all of the control network, the communication network, or both.

HF-AM high frequency-amplitude modulated

HHC headquarters and headquarters company

HMMWV high mobility multipurpose wheeled vehicle

home NCS The preferred NCS for controlling the RS(s).

hooked A display symbol state that designates that the symbol is to be the object of subsequent keyboard actions.

HOR horizontal (as found in Table 6-1, Operational Program Alert Indications)

HORIZ horizontal

host-to-host message Host messages input from a host system into either an ADDSI or a 1553B RS are converted into TUs through the EPLRS network on secure, anti-jam virtual circuit paths. The destination RSs validate each TU and return the TUs to the original host message format prior to delivery to the destination host.

Hz hertz

I/O input/output

IAW in accordance with

IC interface controller

ID identification

IDCNI integrated data communications, navigation, and identification

IDX index number

IEW intelligence and electronic warfare

IFF identification friend or foe

IFO infantry forward observer (as found in Appendix D, EPLRS Symbology)

I-KEK initial-key encryption key – is unique to a unit and is generated by a KOK-13. All keys sent over the air are based on the rekey key, and that is based on an IKEK.

IMA interface module assembly

inbound Message or path destined for the NCS.

INC Internet controller

INF interface format

INF infantry (as found in Appendix D, EPLRS Symbology)

INTEL intelligence

intercommunity circuit A duplex or group-addressed circuit with the source and at least one destination in different communities.

intercommunity message Used to transfer data between NCSs. The data includes NAVAIDS, dispatches, handover requests and responses, and position reports. The IC message is normally transmitted over the communication network but can be transmitted over the control network.

interface unit A device that enables a host to connect to an EPLRS RS.

IR infrared

IRID initial rekey identification

ISSPM information systems security program manager

ISYSCON integrated system control – the future Army system that will provide overall system command and management for Army communication systems at the corps and division levels. ISYSCON will manage the time/frequency resource allocation, geographic deployment and siting, key management, CONOPS, and the common library of data.

JTIDS Joint Tactical Information Distribution System

K keep (as found in Table 2-9, URO Display Modes and Descriptions)

KBD/PTR keyboard/printer – used by the operator to interact with the computer, to input commands, and to print out listings and messages.

Kbps kilobits per second

KDD key distribution device

KEK key encrypting key

KG key generator

KGV key generator variable

KL key list

KOI key operating instruction

KOI-18 A paper tape reader used to send cryptographic keys to the KOK-13 and, for maintenance, to the COMSEC devices in the RS and ECRU.

KOK key operating key

KOK-13 A security device located at an NCS used for generating cryptographic keys.

KPK key production key

kW kilowatt

L last (as found in Table 2-9, URO Display Modes and Descriptions and in Table 2-15, Track Quality)

LAN local area network

lane A two-dimensional, ground-based region defined by a sequence of linear segments. Lane definitions are maintained by the system, and navigation data relative to these lanes are provided to users.

lane guidance The navigation information provided to a unit to guide the user through a predefined lane.

LAT/LONG latitude/longitude

LCD liquid crystal display

LCN logical channel number – used by EPLRS to identify a needline between two hosts.

LCU lightweight computer unit

LDR low data rate

link message A message transmitted from one user to another via the waveform.

link reliability The ratio of messages received at the link end point to the messages scheduled to be transmitted/relayed via the link.

link value A measure of a particular link's contribution to position tracking accuracy.

LNO liaison officer

LO low

local subnet Consists of special UDIO messages to set up a data distribution among a select localized group of users.

LOS line-of-sight

LOSAT line-of-sight anti-tank

LRIP low rate initial production

LTS logical time slot – consists of 16 timeslots, one timeslot in each of the 16 timeslot indexes. Each of these timeslots is assigned the same number (0 through 7). The control network is assigned the odd numbered LTSs and the communication network is assigned the even numbered LTSs.

M mechanized – Used in unit designation such as 53ID (M) to indicate that the 53d Infantry Division is a mechanized unit.

M manual (as found in Table 2-15, Track Quality)

MACOM Major Army Command

MAR Marines (as found in Appendix D, EPLRS Symbology)

MB megabyte

MCS maneuver control system

MED medical (as found in Appendix D, EPLRS Symbology)

MEDEVAC medical evacuation

message category A grouping of message classes according to the types of information that are available to the user.

message class A grouping of requests, or messages, IAW the intended use of the message and the type of processing required. The message class is determined by the first message label character.

message definition An eight character definition, relative to a two-character label.

message header The first nine bits of each message. The header contains the unit identification or message age, master station identification (MSID), message type and subtype information, and the acknowledgment control bits. *(Note: master station is another designation for NCS.)*

message label A two character designator that defines the EPLRS message. Information that is displayed in the message label field on the UDIO device that denotes the general type of message.

message of interest A two character message label identified by the command center as a message to be reported to the center on occurrence.

message set A grouping of one or more message subsets that a designated RS is authorized access. An RS operator cannot obtain access to data in subsets that are not included in the RS authorized message set, unless the RS operator authenticates or otherwise verifies a needline to know.

message type The control network message types are command, report, DO, and DI messages.

MET meteorological (as found in Appendix D, EPLRS Symbology)

METL mission essential task list

MGR military grid reference

MGRS A coordinate system based on UTM and UPS projections. It is used to designate the surface of the earth on a flat two dimensional map.

Mhz Megahertz

MI mechanized infantry (as found in Appendix D, EPLRS Symbology)

MILID Military Identification. The MILID is a unique eight character identifier used by EPLRS to identify the military unit to which the RS is assigned. The MILID is used for purposes of query, response, library inputs, access to position data, and display.

MIL-STD military standard

MNT maintenance (as found in Appendix D, EPLRS Symbology)

MOPP mission-oriented protection posture

MOS military occupational specialty

MPIK manpack installation kit

MP-RS manpack radio set

MPU manpack unit

MPU MP-RS (as found in Appendix D, EPLRS Symbology)

MS milliseconds

MS NCS (as found in Appendix D, EPLRS Symbology)

MS message (as found in Table 6-1, Operational Program Alert Indications)

MSC major subordinate command. (Brigade is an MSC for a division.)

MSE mobile subscriber equipment

MSG multi-source group (also message in graphics and figures)

MSG circuit Provides nonRS-acknowledged data transfer from any of up to 16 source RSs to all endpoint RSs on the needline.

MSG RCVD message received

MSR main supply route

MSRT mobile subscriber radio terminal

MTBF mean time between failure

MUID master unit identifier – provides network synchronization to a unit that has already acquired cryptographic and timeslot synchronization in order to enter the network. The MUID message contains a TREE allocation command and an epoch synchronization command. The MUID message is transmitted in the frame following a TOD message.

Multilateration Determines the location of a unit. This consists of using multiple range measurements, derived from TOA measurements, for triangulation to the desired unit.

MVR maneuver

NAVAIDS navigation aids – provides navigation assistance to units and include air corridors, lanes, zones, and PDIs.

NBC nuclear biological chemical (as found in Appendix D, EPLRS Symbology)

NCOIC noncommissioned officer in charge

NCP network control processor

NCS network control station –a tactically sheltered computer facility providing technical control and monitoring of the RS community. The signal corps installs and maintains the NCS. The NCS provides the technical control necessary for the network to be responsive to the needs of the commander or the tactical situation. The NCS performs dynamic network management of all RSs under its control.

NCS-RS NCS radio set

NL needline – a user-defined data communications requirement. It is often referred to as a communication circuit. A needline is either duplex (a two way communication flow with message acknowledgment) or group-addressed (a one way information flow from one source to multiple destinations without acknowledgment). A needline is defined by a NLID number, source and destination user IDs, LCN, priority, rate (duplex only), acknowledgment, circuit timeslot block (group-addressed only), waveform mode, logical timeslot (group-addressed only), and channel (group-addressed only). The contingency needline is an alternate needline stored by the RS for use if the primary needlines become nonfunctional or the mission is changed. A single NCS community can support up to 750 needlines while a multiple NCS community can support 1900 needlines.

NLID needline identification

NLT not later than

NO TRACK An advisory to the NCS operator that a unit or units cannot meet acceptable position location criteria.

NORTH/RNG Northing/Range

NPT network planning tool – software program found in the SYSCON.

OIC officer in charge

OPFAC operating facilities

OPFOR opposing force

OPLAN operation plan

OPORD operation order

OPSEC operations security

ORB orbit point (as found in Appendix D, EPLRS Symbology)

ORD ordinance (as found in Appendix D, EPLRS Symbology)

OSC (as found in Table 6-3, RS Alert Indications)

OSF/MWM OSF/motif window manager – software program used within the downsized NCS to run the X Windows system.

OTAR over-the-air rekeying

P/S Patriot/Stinger

PA power amplifier – amplifies the RF signal to be transmitted to 10, 20, 3, or .4 watts and sends the amplified RF signal to the antenna. The PA is part of the Basic Hybrid Unit.

packet radio A radio that transmits data in the form of packets.

PAM pamphlet

path quality The ability of a series of links (a path) to transfer messages.

pathfinding The function that is responsible for checking performance of a series of links on a circuit and reporting on paths that are not operating satisfactorily.

PC personal computer

PCDP pilot control display panel – a UDIO device mounted in a cockpit and connected to an AV-RS.

PDI predesignated item – a geographical position NAVAID normally associated with a terrain feature or structure. Users can request and receive navigation information relative to a PDI. PDIs are identified by a two character label consisting of a number (1-8) and a letter (A-Z). The numbers are paired (1-2, 3-4, 5-6, and 7-8). Odd numbers (1, 3, 5, 7) are used to request PDI B/R data. Even numbers are used to request PDI positions. There can be up to 104 PDIs.

PLA port link assignment

PLGR Precision Lightweight GPS Receiver

PLRS Position Location Reporting System

PLRS network The network used by RTEP network management to send commands to remote RSs and to receive status reports from the RSs. The PLRS network is the same as the Control Network.

PMCS preventive maintenance checks and services

PMS pedestal-mounted Stinger

pn pseudo-noise – An apparently random series of numbers, except to those who have the reference pattern that generated the numbers. The pn code is used to provide spread spectrum separation to minimize mutual interference. The transmitting and receiving RSs must have the same pn code.

PORT programmable organization for reciprocal transaction – the path messages take between the NCS and up to four RSs. Command messages are sent from the NCS to the RS and status and request messages are sent from the RS to the NCS.

PORT link A message transmission link between two RSs through which command messages are relayed and received, and status/request messages are transmitted and received.

POS/NAV position/navigation – an EPLRS service providing information including the units own position, the position of other units, and the direction and distance to other units or NAVAIDS. The data can occur on a one time or periodic basis. Navigation is an EPLRS service that provides guidance to units or NAVAIDS. The data can occur on a one time or periodic basis.

P-P point-to-point

P-P needline Provides nonRS-acknowledged two-way data transfer at equal or unequal rates between two RSs. (Also referred to as a P-P circuit.)

PRI needline priority

PROC processor

PROG program (as found in Table 6-2, Operational Nonprogram Alert Indications)

PT pressure transducer

PT platoon or detachment (as found in Appendix D, EPLRS Symbology)

PVC permanent virtual circuit

PWR power (as found in Table 6-2, Operational Nonprogram Alert Indications)

QUAL quality – URO device message quality (as found in Table 2-6, URO Device Controls and Indicators)

R receive (as found in Table 2-9, URO Display Modes and Descriptions)

R reference (as found in Table 2-15, Track Quality)

R/T radio/transmitter

RA/M risk assessment/management

RAM random access memory sage

RAT rocket artillery (as found in Appendix D, EPLRS Symbology)

RATE needline data rate

RAU remote annunciator unit

RCA radio set circuit assignment

RCVD received

REC radio electronic combat

REC reconnaissance (as found in Appendix D, EPLRS Symbology)

REF reference point (as found in Appendix D, EPLRS Symbology)

reference unit A designated unit whose position in the library is a known position.

relay coordination Used to select relay paths for user-to-user communications.

relay key A cryptographic key that is unique for each RS and is used to protect the delivery of OTAR keys including the next rekey key sent from the NCS to the RS.

relay unit A device that provides store and forward services on a path from source to destination.

reporting function This is performed in the DCP and processes the results of the position tracking to generate reports and responds to information queries initiated by the NCS operator or RSs. This reporting function also transforms position data between coordinates, UTM projection, UPS projection, and the MGRS.

requested network capacity An estimate of what the assigned network capacity would be if resources were assigned to satisfy all requirements in the library. This capacity is defined for control and communications functions.

resource allocation A function of SYSCON to allocate coordinated resources for multiple NCS community operations.

resource selection The function wherein timeslot and frequency channel assignments are given to RSs on a current path.

retrans retransmission

RF radio frequency

RF SILNT radio silent

ROE rules of engagement

RP release point

RPM revolutions per minute

RS radio set

RSID radio set identification

RT receiver transmitter

RTEP real-time EPLRS program – The NCS operational software. The RTEP functions are message traffic control, network management, position tracking, reporting, operator interface, performance monitoring, start-up, data distribution, and circuit management. RTEP runs on the DCP, NCP, CMP, and TOAP. RTEP uses SDEX/M and SDEX/7 software to interface with hardware.

S send (as found in Table 2-9, URO Display Modes and Descriptions)

S2 intelligence staff officer

S3 operations staff officer

S6 signal staff officer

SA situational awareness

SADL situation awareness data link

SALUTE size, activity, location, unit, time of observation, and equipment type – report format used to report enemy activity.

SAM surface to air missile (as found in Appendix D, EPLRS Symbology)

SAT situation awareness terminal

SCC system control center – MSE control element.

SCI sensitive compartmented information

SDU secure data unit – encrypts the data to be transmitted and decrypts the received EPLRS data, provides message validation, encoding/decoding and alarm checking.

SE section or squad (as found in Appendix D, EPLRS Symbology)

Sea Level Pressure The barometric pressure estimate of the atmosphere at sea level.

sec seconds (of time)

SFO special forces (as found in Appendix D, EPLRS Symbology)

SHF super high frequency

Sig Bn Signal Battalion

SINCGARS Signal-Channel Ground and Airborne Radio System

SINCGARS SIP SINCGARS-System Improvement Program

SIP System Improvement Program

SITREP situation report – provides update on subordinate unit status.

SLDP system level diagnostic program – SDLP is an off-line fault detection/fault isolation tool.

SMP signal message processor – part of the basic hybrid unit and consists of the signal processor, message processor and timing and control.

SOI signal operating instructions

SOP standing operating procedure

SOS speed-of-service – the maximum allowable time from when a message is sent by the source host until the message is received by the destination host.

SP start point

SPA selectable power adapter

SPT support

SQD squadron, squad

SSM surface to surface missile (as found in Appendix D, EPLRS Symbology)

standalone network The standalone network consists of a group of RSs that have no communication, direct or indirect, with an NCS-controlled network. A standalone network can only be started by a group of RSs that have either been active in an NCS control network or have been in an extended network.

STSVT strategic tactical secure voice terminal

SUP supply (as found in Appendix D, EPLRS Symbology)

SV-RS surface vehicle radio set

SVU surface vehicle unit

SVU SV-RS (as found in Appendix D, EPLRS Symbology)

SVUIK surface vehicle unit installation kit

SYM/ECH symbol/echelon

SYSCON system control

TAC-4 tactical applications computer

TACLAN tactical local area network

TACSAT tactical satellite

TACSOP tactical standing operating procedure

TADIL tactical data information link

TBD to be determined

TCU transportable computer unit

TDMA time division multiple access – TMDA is a time ordered system that allows multiple users to efficiently share common frequency resources.

TEK traffic encryption key

throughput The characteristic of a needline that defines the peak number of messages per hour that the source subscriber system can be expected to generate.

TI tactical Internet

Timeslot The smallest increment of time in the TDMA structure. A burst transmission waveform occurs in a timeslot. Timeslots are either long or short with a difference of 23.2 microseconds. Timeslots are alternated between long and short bursts. Substituting a long timeslot for a short timeslot or a short timeslot for a long timeslot usually make timing corrections between the NCS and RSs.

T-KEK transient key encryption key

TM technical manual

TOA time-of-arrival – is a result of the TOA measurement that determines the time a transmission takes to go between RSs. It is used in the multilateration process to determine the location of RSs.

TOAP time-of-arrival processor – Performs the position tracking and part of the performance monitoring of the RTEP. The TOAP is an AN/UYK-7 computer that interfaces with the NCP and the DCC.

TOC tactical operations center

TOD time-of-day

TOD message Provides the RS with cryptographic and timeslot synchronization and allows it to attempt network synchronization.

TOE task organization element

TPN tactical packet network

TQ track quality – a measure of how well the RS's position is being estimated by the NCS.

transducer That part of the RS that enables it to make measurements of barometric pressure and send this data to the NCS, where it is converted to altitude information.

TREE time/frequency resource element – a time/frequency resource repeated each timeslot index. SYSCON allocates TREEs. Up to four TREEs are allocated to each NCS for the control network. A TREE is obtained by assigning a frequency channel to a logical timeslot.

TRN transportation (as found in Appendix D, EPLRS Symbology)

TS timeslot

TSI timeslot index – one of the 16 timeslots comprising an LTS. For the control network, TSI numbers 0-4 are used for NCS to RS messages, TSI number 5 is used for the control net support activities, and TSI numbers 6-15 are used for RS to NCS messages.

TU transmission unit – the RS converts ADDSI packets and MIL-STD blocks into a form for RS transmission called TUs. TUs contain 80, 160, or 240 information bits, depending on the waveform used. TUs are transmitted through the communications network via the needline.

TYPE needline service type

U unconfirmed (as found in Table 2-15, Track Quality)

UAK URR acknowledge

UCM user command message – transfers up to three commands from the NCS to the RS that will modify the operation of that RS. The UCM consists of three command fields and an identification header that contains the message type, the control bits, and the ID of the unit receiving the command.

UDIO user data input/output

UHF ultra high frequency

U-KEK unique key encryption key

UMR This message is used primarily to communicate TOA measurements and barometric data obtained by the RS and sent to the NCS. The URM message is also used to send other status information to the NCS including communicant, data input requests, and network timing.

Unit Type The equipment configuration of each user unit (RS). The type is one of the following: manpack, surface vehicle, airborne rotary wing, airborne fixed wing, ground relay, or relay board.

UNK unknown (as found in Appendix D, EPLRS Symbology)

UNREC unrecognized

UNSLOB United Nations Forces in Slobovia

UPS Universal Polar Stereographic – a coordinate system for mapping the earth.

UREC unrecognized (as found in Table 6-10, Unrecognized LCN Advisory Action)

URO user readout – a hand-held entry/display device cabled to an EPLRS device to provide user input and output. It is used with the MP-RS, GR-RS, SV-RS, and some AV-RSs.

URR user rapid report

USAF US Air Force

USR user status report - a message used to communicate the operating status of the RS to the NCS. The USR is transmitted in response to a user transmission command.

UTC user transmission command – a message generated in response to the NCS that provides an inbound path for the RS to send a data message or a USR report to the NCS.

UTM Universal Transverse Mercator - a coordinate system for mapping the earth.

UU user unit (as found in Table 6-1, Operational Program Alert Indications)

UUID user unit identifier

UVUN unique variable update number

UXO unexploded ordnance

V2LC version 2 lightweight computer

VAC volts alternating current

VDC volts direct current

VFK variable function key – there are 8 VFKs on the EPLRS keyboard.

VHF-FM very high frequency-frequency modulated

VHSIC very high speed integrated circuit

VMF variable message format

waveform An encrypted, encoded, interleaved, spread spectrum, radio frequency pulse containing a power rise, preamble, buffer, data, and power fall, and is transmitted in a timeslot.

WILCO will comply

WM waveform mode – determines the data rate of a circuit. Mode 0 is the existing mode (80 bits per transmission unit). Modes 1,2, and 3 have been added with VHSIC implementation and allow data transfer rates of the original 80 bits, but it has added the rates of 160 bits and 240 bits per TU with additional anti-jam capabilities. Reed-Solomon encoding is added to the extra modes.

zeroize The process that erases crypto keys in an RS.

zone An area serviced by an EPLRS network.