

# Joint Tactical Radio System Network Enterprise Domain

## Statement of Work For Enhanced Position Location Reporting System (EPLRS) Software In-Service Support



**19 Oct 09**

*Prepared for*

**Joint Program Executive Office (JPEO) Joint Tactical Radio System (JTRS)**

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# **1 Scope**

## **1.1 Purpose**

The purpose of this Statement of Work (SOW) is to support the Joint Program Executive Office (JPEO) Joint Tactical Radio System (JTRS) Network Enterprise Domain (NED) by providing Software In-Service Support (SwISS) for the JTRS Enhanced Position Location Reporting System (EPLRS) software. The intent of the in-service support is to provide technical support, software maintenance/upgrades, and enhancements to baseline JTRS EPLRS software.

## **1.2 Background**

The JTRS program consists of a series of joint acquisition activities, managed by JPEO JTRS. The objective of JTRS is to develop, produce, integrate, and field a family of interoperable, digital, modular, software defined radios that operate as nodes in a network to ensure wireless communications and networking for mobile and fixed forces. Specifically, JTRS will have the ability to receive, transmit, and relay voice, data, and video. JTRS is being developed in a Joint environment, thus allowing maximum hardware and software commonality and reduced porting efforts across Service platforms. Through implementation of common waveforms, radios, software, and select ancillary component and network management equipment, JTRS will enable enhanced interoperability, reusability, supportability, and software portability, and will result in improved speed to capability, and more effective implementation of incremental capability improvements.

## **1.3 Period of Performance**

The contract will include a one-year base period and four one-year options. The period of performance will be determined by each individual delivery order.

## **1.4 Place of Performance**

The primary place of performance shall be the Contractor's site. The Contractor also shall perform work at Government sites when necessary and/or directed by the Government. Contractor work at Government sites may include, but shall not be limited to short-term overnight trips as well as temporary or extended performance of work necessary to fulfill base contract or individual delivery order requirements.

## **1.5 Security**

All work shall be performed in accordance with DoD and Navy Operations Security (OPSEC) requirements in accordance with the DD Form 254.

Key personnel shall possess at least a SECRET security clearance at the time of contract award. The Contractor's facilities shall be secure to the SECRET level due to the classified nature of the work to be performed.

The nature of this contract requires access up to SECRET information. The work performed by the Contractor will include access up to SECRET data, information, and spaces. The Contractor shall be required to attend meetings classified up to the SECRET level.

Note: If foreign travel is required, all outgoing Country/Theater clearance message requests shall be submitted to the SSC Pacific foreign travel team, OTC2, Room 1656 for action. A Request for Foreign Travel form shall be submitted for each traveler, in advance of the travel to initiate the release of a clearance message at least 35 days in advance of departure. Each traveler must also submit a Personal Protection Plan and have a Level 1 Antiterrorism/Force Protection briefing within one year of departure, and a country-specific briefing within 90 days of departure.

## 2 Applicable Documents

Title	Reference
Software Communications Architecture Specification	Version 2.2, 17 November 2001
Software Communications Architecture Specification	Version 2.2.2, 15 May 2006
Software Communications Architecture Extensions	Version 2.2.2, 22 December 2006
JPEO JTRS Standards Standardization Plan	Version 1.9, 22 October 2008
JTRS Test and Evaluation Laboratory SCA Test and Evaluation Plan	Version 1.1, 6 January 2009
JTRS Test and Evaluation Laboratory Standard API Verification Plan	Version 1.0, 04 April 2008
JPEO JTRS Software Standards	Version 1.2.2, 01 October 2007
IEEE/EIA 12207.0, Standard for Information Technology – Software life cycle processes	March 1998
IEEE/EIA 12207.2, Standard for Information Technology – Software life cycle processes – Implementation considerations	April 1998
JTRS Unified INFOSEC Criteria	Revision 2, 02 December 2005 (SECRET//NOFORN)
Network Enterprise Domain Software In-Service Support (SwISS) Plan	Version 1.1, 06 August 2008
JTRS NED T&E Waveform Portability Guidelines	Version 1.1, 26 June 2008
JPEO JTRS Enterprise Information Support Plan (E-ISP)	Version 1.1, 30 September 2008 (UNCLASSIFIED//FOR OFFICIAL USE ONLY)

Title	Reference
Joint Tactical Radio System (JTRS) Information Repository (IR) User Registration Guide	Version 1.6, 07 May 2007
JTRS Software Waveform Specification EPLRS/SADL	Rev. 2.0, 17 Jun 2009

## 3 SwISS Requirements

### 3.1 General

#### 3.1.1 Overview

The Contractor shall provide technical support, software maintenance/upgrades, and enhancements for the JTRS EPLRS software. The Contractor shall execute structured software engineering and program management processes that facilitate effective and high-quality software development. The Contractor shall ensure that all changes, upgrades, and enhancements to baseline “wrapper” versions of the JTRS EPLRS software adhere to the applicable JTRS Application Programming Interfaces (APIs), JTRS Unified INFOSEC Criteria (UIC), JTRS NED Waveform Portability Guidelines, JTRS Software Standards, including JTRS Software Communications Architecture (SCA) compliance, and conformity to interoperability certification requirements.

#### 3.1.2 Acceptance Criteria

The Contractor shall ensure that all Contractor-delivered products meet the criteria for Government acceptance of software corrective changes, upgrades, and enhancements. Specific acceptance criteria shall be established on a per delivery order basis, and may include but are not limited to the following:

- a) Successful conduct of Formal Qualification Test (FQT) / Regression Test.
- b) No priority one, two, or three (as defined by IEEE/EIA 12207.2 Annex J) problem reports open as specified per delivery order.
- c) EPLRS waveform “CORBA wrapper” software (developed on the JPEO JTRS Contract) is compliant with the JTRS SCA, the JTRS Standards Standardization Plan, the JTRS NED T&E Waveform Portability Guidelines, and the JTRS UIC.
- d) EPLRS legacy core waveform software (developed on the PD TRCS Contract) is compliant with the JTRS UIC.
- e) Government approval of the deliverables, to include documentation required under individual delivery orders.

The Government shall determine if all required acceptance criteria have been met for each deliverable and shall document this determination in the Government Independent Assessment Report.

## **3.2 Specific**

### **3.2.1 Technical Support**

The Contractor shall provide technical support for problem report/change request investigation and change proposal development, test environment support, porting support, and IV&V support. In addition, the Contractor may be tasked to monitor technology as it progresses and make recommendations to the Government for inclusion in the current baseline version of the software application. Recommendations shall include performance, schedule, and cost components, in accordance with the SWISS process outlined in the NED SWISS Plan.

#### **3.2.1.1 Problem Report/Change Request Investigation and NED Change Proposal Development Support**

The Contractor shall investigate problem reports and change requests. The Contractor shall develop subsequent recommendations for change proposals. Recommendations shall include performance, schedule, and cost components, in accordance with the SWISS process outlined in the NED SWISS Plan.

#### **3.2.1.2 Test Environment Support**

The Contractor shall provide and maintain a test environment capable of testing past, current, and future software configurations. The Contractor shall document and control the configuration of each test environment the Contractor utilizes, to include but not be limited to all elements of equipment, software, and human or automated processes present in each test environment.

#### **3.2.1.3 Porting Support**

The Contractor shall provide the following porting support to JTRS Product Line Program Management Offices (PMOs) or any other entity, as required under individual delivery orders:

- Assist in the review of documents (WDS, SRS, SDD, API, STP, STD, etc.).
- Support Integrated Product Team meetings/reviews (LWF-IPT, SRRs, PDRs, CDRs, etc.).
- Support test events (dry runs, FQT, etc.).
- Utilize NED test resources to perform independent testing.
- Assist in the identification/resolution of problem reports with regards to porting.
- Provide liaison support between JTRS Product Lines and NED.
- Provide Subject Matter Expert (SME) support as required.

#### **3.2.1.4 Independent Validation and Verification (IV&V) Support**

The Contractor shall provide technical Subject Matter Expert (SME) support as required to support Government IV&V for baseline JTRS EPLRS software.

### *3.2.2 Software Maintenance/Upgrades*

The Contractor shall make corrective changes, improvements, or upgrades to the software on a per delivery order basis as directed by the Government in order to:

- 1) Correct identified defects and deficiencies.
- 2) Improve performance or other attributes, or adapt the software to a modified environment (including re-porting). The Contractor shall re-port software as required. Re-porting shall be defined as re-integrating baseline software products into the JTRS radio hardware and operating environment software after software product maintenance/upgrades have been accomplished.
- 3) Incorporate new technologies, functionalities, and security upgrades.

Upgrades shall be defined as software changes required to improve an existing capability or functionality.

The Contractor shall provide/update any or all of the CDRL deliveries listed in Exhibit A, as specified per the maintenance/upgrade delivery order.

### *3.2.3 Software Enhancements*

The Contractor shall enhance the software to incorporate new requirements or capability (including adapting the software to new operating environments (i.e. porting)) on a per delivery order basis as directed by the Government. An enhancement shall be defined as a new requirement or additional capability that changes a product.

The Contractor shall port the software as required. Porting shall consist of integrating the baseline software products into the JTRS radio hardware and operating environment software.

The Contractor shall provide/update any or all of the CDRL deliveries listed in Exhibit A as specified per the enhancement delivery order.

### *3.2.4 Documentation (B006, B007, B008, B009, B010, B011, B012, B013, B014, B015, B016, B017, B018, B019, B020, B021, B022, B023, B024, B025, B026)*

The Contractor shall update and maintain applicable software documentation when affected by software maintenance/upgrade or enhancement delivery order efforts. A list of current JTRS EPLRS documents is maintained by the NED Configuration Management division and shown in Appendix A of this SOW. The Contractor shall provide additional documentation when required for larger upgrade and enhancement delivery orders as directed by the government.

### *3.2.5 Software Delivery*

As specified per delivery order, the Contractor shall deliver any software application releases to the NED Program Office IAW Contract Data Requirements List, DD Form 1423-1, Exhibit A.

### *3.2.6 Model Delivery (CDRL B027)*

As specified per delivery order, the Contractor shall deliver any waveform models created as a part of waveform software upgrade or maintenance activities covered by sections 3.2.2 and 3.2.3 of this contract to the NED Program Office IAW Contract Data Requirements List, DD Form 1423-1, Exhibit A.

### *3.2.7 Test Bench/Vector Delivery (CDRL B027)*

As specified per delivery order, the Contractor shall deliver any waveform test benches or test vector software created as a part of waveform software upgrade or maintenance activities covered by sections 3.2.2 and 3.2.3 of this contract to the NED Program Office IAW Contract Data Requirements List, DD Form 1423-1, Exhibit A.

### *3.2.8 Program Management*

#### **3.2.8.1 Contract Funds Status Report (CFSR) (CDRL A001)**

The Contractor shall submit one CFSR (DD Form 1586) at the contract level that is inclusive of all delivery orders. Individual CFSRs will not be separately priced at the delivery order level. The CFSR reporting level shall provide funding requirements and time-phased detail at the CLIN level, broken out by delivery order, as well as the total program. The Contractor shall reconcile the reporting elements in the CFSR with the WBS elements when a CPR is applicable and the documents are submitted in the same month. The reconciliation shall be provided as an addendum to the CPR submittal. All time phased data shall be prepared such that it is grouped to provide visibility into the Government fiscal year. If the program is incrementally funded, it may be necessary for the Contractor to provide time phased increments at the beginning of the program or when Estimate at Completion (EAC) changes and/or contract modifications are implemented. The Contractor shall identify the elements of Termination Liability and Open Commitments in the notes section of the CFSR.

As required electronic submissions of the CFSR shall be made to the Earned Value Repository in accordance with the ANSI X.12 Standards or XML equivalent. (American National Institute, 839 Project Cost Reporting). The delivery of the final quarterly CFSR submission to DCARC shall be made by the Contractor by uploading the CFSR file into the DCARC Central Repository website at <https://ders.dcarc.pae.osd.mil/evm>.

As required the Contractor shall submit a MS Excel file for delivery to the JTRS NED Program Manager and Finance Analyst via a mutually agreeable method to be determined.

When the contract dollar value is minimal (under \$1M), a CFSSR may not be appropriate. Then, the Contractor shall submit financial information to include: Actuals to Date, time phased Estimate to Complete, Estimate at Completion, and funding requirements as part of the monthly Contract Status Report (A003).

### **3.2.8.2 Management Plan (CDRL A002)**

The Contractor shall provide a Management Plan (CDRL A002) to ensure the work under this contract is managed effectively and efficiently. The Management Plan shall ensure effective management of cost, schedule, and performance. The Management Plan shall include adherence to the SwISS process as outlined in the NED SwISS Plan. The Contractor shall ensure that the software technical support, maintenance/upgrade, and enhancement tasks are IAW DoD and JTRS policies and guidelines. The Contractor shall adhere to DoD policies with regard to test management, cost accounting, and quality assurance measures.

### **3.2.8.3 Contract Status Report (CSR) (CDRL A003)**

The Contractor shall provide CSRs. The CSR shall include at a minimum:

- Progress/status reporting against contract deliverables.
- A running history of progress in meeting schedules, including a brief description of activities and accomplishments during each reporting period.
- A Risk Matrix, maintained by the Contractor that identifies design, schedule, technical, resources, and other program element risks. The Risk Matrix shall be updated with each monthly CSR.
- Software metrics as specified per delivery order.
- Program staffing (plan vs. actual)

If a CFSSR is not required, or if the contract value does not meet the EVMS implementation thresholds, the Contractor will include financial data in the CSR. The format and content of the data will be determined based on review of the Contractor's internal reporting and agreed to at the PAC. As a minimum, that data would include:

- Actuals to Date
- Time phased Estimate to Complete
- Estimate at Completion
- Performance to date, i.e., Percent work complete

The Contractor shall use the CSR to propose updates and changes, and document slippages to the deliverables schedule. Government acceptance of the CSR does not indicate concurrence with the CSR content or proposed changes to schedule(s).

#### **3.2.8.4 Contract Performance Report (CDRL A004)**

As required by a specific delivery order, the Contractor shall submit a CPR in an electronic format. The Contractor shall implement an EVMS, using ANSI-EIA 748 as guidance to manage, monitor, and measure cost, schedule, and performance. The CPR shall comply with the requirements of DFARS clauses 252.234-7001 and 252.234-7002 and be implemented according to the thresholds established therein.

The Contractor shall ensure that the assumptions and content of the EAC and Budget at Completion (BAC) contained in the CPR are consistent for each submittal. The Contractor shall provide the Government with written explanations for EAC changes as a result of comprehensive EAC updates within the Contractor's management system. The Contractor shall track EAC changes from the baseline BAC during the period of performance of the program. Significant EAC changes shall be incorporated into PMR presentations or sidebar discussions for management review.

As required electronic submissions of the CPR shall be made to the Earned Value Repository in accordance with the ANSI X.12 Standards or XML equivalent. (American National Institute, 839 Project Cost Reporting). Winsight is the preferred format. The delivery of the final CPR submission to DCARC shall be made by the Contractor by uploading the CPR XML file into the DCARC Central Repository website at <https://ders.dcarc.pae.osd.mil/evm>. The Contractor shall also submit an EVM backup file, containing historical EVM performance to the Repository quarterly. Specific instructions and registration information is provided at this website.

In addition, a MS Excel submission of the CPR shall be made to the JTRS NED Program Manager and EVM Analyst via a mutually agreeable method to be determined.

#### **3.2.8.5 Integrated Master Schedule (IMS) (CDRL A005)**

When required by a specific delivery order the Contractor shall develop and maintain an IMS by logically networking detailed program activities. The schedule shall contain the planned events and milestones, accomplishments, entrance and exit criteria, Risk Mitigation plans in the Contractor's Risk Management Plan, and activities from delivery order award to the completion of the delivery order. The IMS shall reflect the tasks, dates (baseline and forecast), external and internal dependences, and relationships necessary to achieve contract milestone delivery dates. The Contractor shall quantify risk in hours, days, or weeks of delay and provide optimistic, pessimistic, and most likely duration for each IMS activity and event.

The complexity of the analysis shall be defined by DI-MGMT-81650 and the EVMS thresholds. As a minimum, it will include an assessment of schedule progress to date, changes to schedule assumptions, variances to the baseline

schedule, causes for the variances, potential impacts, and recommended corrective action(s). The Contractor shall submit written variance analyses with the IMS, prior to or concurrent with the CPR Format 5 submittal.

The IMS shall have the following minimum characteristics:

- Consistent with the delivery order CWBS.
- Sufficiently detailed that critical, near-critical, and high-risk efforts are identified and planned realistically to assure executability. The IMS will be extended and expanded to mutually agreeable levels as the contract or agreement unfolds and/or additional insight becomes necessary (for example, rolling wave detail planning or scope changes).
- Includes the efforts of all activities, including subcontractor and supplier activities.
- Presents an accurate, current, and complete integrated view of the contract or agreement, consistent with resource plans, CPR's and other approved documentation.
- Reflects those risks identified and documented by and/or within the Contractor's Risk Management Plan.

#### **3.2.8.6 Configuration Management**

The Contractor shall implement Configuration Management (CM) processes and maintain an internal CM Plan. The Contractor's CM processes shall:

- Address how software application version differences are tracked and how changes are controlled across related versions.
- Identify the forms and methods that will be used to submit and process Requests for Deviations (RFDs), Requests for Waivers (RFW), Software Version Description (SVD) documents and subsequent Specification Change Notices (SCNs), and Notices of Revision (NORs) as they apply to the Technical Data Package.
- Address how the software and documentation will be controlled to ensure that the software, as maintained, updated, and enhanced, is accurately reflected and monitored.
- Describe the tracking mechanisms used for all software licenses, and maintenance of these licenses.

#### **3.2.9 *SwISS Process***

The Contractor shall be thoroughly familiar with and shall participate in the SwISS process outlined in the NED SwISS Plan.

## **4 Government Furnished Equipment**

The Government shall provide any inherently governmental equipment, information, or property (GFE/GFI/GFP) necessary for completion of the effort(s) under this contract. Inherently governmental is defined as those items not

available in the commercial marketplace, specifically those items only available for procurement by Government sources such as COMSEC, classified, or other sensitive/restricted equipment/information/property.

The Government may provide and the Contractor shall accept any GFE/GFI/GFP items as specified in individual delivery orders issued under this contract at the time of delivery order issuance. If the Contractor takes exception to the roster of GFE/GFI/GFP, a revised list shall be provided by the Contractor. The revised list must be inherently governmental items. The item list should include information such as nomenclature, description/use, model number, part number, National Stock Number (if available), cost, and recommended source of supply (if known). In the absence of this data, information shall be provided by the Contractor to accurately identify each item and the required configuration of the item.

The Contractor shall accept delivery of any inherently governmental equipment, information, or property (GFE/GFI/GFP) from the government at a location and time that will be determined after contract award.

## **5 Travel and Other Direct Costs**

Contractor travel and other direct costs (ODCs) may be incurred depending on program needs. The Contractor shall propose travel and ODCs separately per delivery order.

## **6 Data Deliverables**

a. All data delivered and data made available during this contract shall be furnished electronically IAW DD Form 1423-1. Individual Delivery Orders will specify data deliverables using a subset of the items from the Exhibit A list of CDRLS. The list of CDRLS is subject to change according to the requirements of the Delivery Orders through the duration of the contract's POP. Specific deliverables required and schedules will be stated in the Delivery Order SOWs.

b. Classified data shall be handled and delivered IAW the Department of Defense (DoD) 5220.22-M "National Industrial Security Program – Operating Manual", dated February 2006.

c. All data ordered IAW DD Form 1423-1 shall be submitted with a Letter of Transmittal (LT) or provide Government notification via an E-mail to the Government Contracting Officer. The LT shall indicate the contract number, Contract Line Item Number, Sub-Line Item Number, Data Item Number, Title and Subtitle (when applicable) of the data, SOW paragraph number reference which required the data to be prepared, and the date of transmittal.

d. DD Form 250s Material Receipt and Acceptance shall be submitted with final data deliveries only as specified on the individual data item (see Exhibit A for the

Contract Data Requirements List (CDRL) and applicable Data Item Descriptions (DID)).

e. The Contractor shall provide a matrix, which states the delivery method for each CDRL deliverable (i.e. CD-ROM, Webpage).

## **7 Media and File Format**

The Microsoft (MS) Office 2003 suite of applications (MS Word, MS Excel, MS PowerPoint, and MS Project) is the preferred format for documents, reports, and information furnished under this contract. If the Contractor's file format is not compatible with the formats specified, then the Contractor shall provide a compatible format that will allow the Government to read and write to the files when necessary. Should MS issue a new MS Office suite that the Government adopts as a new standard; the Government will notify the Contractor in writing of the change. Other formats for the transmittal of contract documentation and methods for electronically signing DD Form 250s Material Receipt and Acceptance shall be as set forth in the contract and as agreed to by the Government and Contractor.

## Appendix A

EPLRS Software Requirements Specification (SRS), Rev E, dated 23 May 08
EPLRS Software Design Description (SDD), Rev E, dated 23 May 08
EPLRS Software Development Plan (SDP), Rev D, dated 18 Jul 07
EPLRS Software Test Plan (STP), Rev A, dated 23 May 08
EPLRS Software Test Description (STD), Rev A, dated 23 May 08
EPLRS Software Test Report (STR), Rev A, dated 23 May 08
EPLRS Software Product Specification (SPS), dated 23 May 08
EPLRS Software Version Description (SVD), Rev B, dated 17 Oct 08
EPLRS Waveform Design Specification (WDS), Rev E, dated 16 Jun 08
EPLRS Waveform Software Security Report (WSSR), Rev A, dated 15 Jan 08

## Appendix B

### Acronym List

API	Application Programming Interface
BAC	Budget at Completion
BOE	Basis of Estimate
CDRL	Contract Data Requirements List
CFSR	Contract Funds Status Report
CMS	Contract Master Schedule
COMSEC	Communication Security
COTS	Commercial Off The Shelf
CPR	Contract Performance Report
CSR	Contract Status Report
CWBS	Contract Work Breakdown Structure
DAL	Data Accession List
DCN	Document Change Notice
DoD	Department of Defense
EAC	Estimate at Completion
EPLRS	Enhanced Position Location Reporting System
FQT	Formal Qualification Test
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GFP	Government Furnished Property
IDD	Interface Design Description
IAW	In Accordance With
IR	Information Repository
ITAR	International Traffic in Arms Regulation
IV&V	Independent Validation and Verification
JPEO	Joint Program Executive Office
JTRS	Joint Tactical Radio System
LT	Letter of Transmittal
MS	Microsoft
NED	Network Enterprise Domain
NOR	Notice of Revision
NSA	National Security Agency
NSN	National Stock Number
PM	Program Manager
RFD	Request for Deviation
RFW	Request for Waiver

SCA	Software Communications Architecture
SCN	Specification Change Notice
SDD	Software Design Description
SME	Subject Matter Expert
SOW	Statement of Work
SPS	Software Product Specification
SRS	Software Requirements Specification
STD	Software Test Description
STP	Software Test Plan
STR	Software Test Report
SVD	Software Version Description
SwISS	Software In-Service Support
TDL	Technical Direction Letter
TDO	Theory of Design and Operation
TOC	Theory of Compliance
UIC	Unified INFOSEC Criteria
WDS	Waveform Design Specification
WSSR	Waveform Software Security Report