Requirements / Specification Document

National Institute of Standards and Technology
U.S. Department of Commerce

TITLE: Open RAN Cellular End-to-End System

Requesting Laboratory / Division / Group:

Communications Technology Laboratory
Spectrum Technology and Research
Shared Spectrum Metrology Group (675.03)

General Statement of Need:

To continue NIST's mission to support the Open Radio Access Network standard and expedite Open RAN deployment, the Spectrum Technology and Research Division requires software with license and support for an indoor Open RAN end-to-end system with 5G Radio Intelligence (RIC) capability in the 78 GHz band**.**

Item Specifications and Quantities:

Item 1:	**MX-PDK 3-Node SW License**	
Quantity:	1	
Specifications:	1.1	MX-5G: OAI RAN, OAI CN, Open5GS
	1.2	MX-RIC: RICs/xApp/rApp/SDKs
	1.3	MX-DATA: Multi-source data lake
	1.4	FHI 7.2 LITEON/Benetel
	1.5	Dashboard & CLI
	1.6	Emulation: Open RAN Studio
	1.7	Artifacts: TelcoFabric
Item 2:	**Hosted DevOps and ASM**	
Quantity:	1 (3 years coverage)	
Specifications:	2.1	Technical Support & Maintenance
	2.2	Software Update
	2.3	Dedicated Support Channel
	2.4	Ticketing System

Vendor Requirements

1. Possess at time of award/contracting an Export Control Classification Number (ECCN).

2. Possess at time of award/contracting a Unique Entity Identification Number (UEI) which registration is listed as "Active" on the GSA System for Award Management (SAM.gov).

Procurement Support Information and Ancillary Services:

[Provide input for each section Below or Mark Not Applicable (N/A)]

Section	Requirements/Specifications
Planning Considerations ☒ N/A	☐ List any visits required to allow potential vendors to see site specific constraints. [Explain Requirements.] ☐ US citizen required on-site (foreign nationals require pre-registration 30 days prior to visit.) ☐ Vendor Representative On-Site more than three (3) days. ☐ Other Considerations: [List other considerations to ensure an accurate quote.]
Shipping & Delivery ☐ N/A	Shipping Address: ☒ NIST-Boulder ATTN: Aziz Kord Mail Stop: 675.01 325 Broadway Boulder, CO 80305 ☐ NIST-Gaithersburg ATTN: Mail Stop: 100 Bureau Dr Gaithersburg MD 20899 ☐ [Alternate Shipping Address] Shipping Criteria: ☐ Partial Delivery Acceptable ☐ [Enter Shipping and Delivery information by item.] ☐ Direct Delivery to OU Building Required [Explain Need for Requirement] Building /Room Number: [Enter Building/Room Number] ☐ Building has Loading Dock Containerization Preference: [Enter Container Type] Other Requirements:

[List Any Other Requirement]

Delivery Date Criteria:

☒ Delivery Shall Be Competed No Later Than:
Three months After Receipt of Order (ARO)

☐ Delivery Shall Be Made No Earlier Than:
Click or tap to enter a date.

☐ Scheduled Deliveries:

Item Number	Due Date

☐ Other:
Three months after the award date.

Electronic Media

☐ N/A

[Enter Electronic Media Requirements by Item.]

☒ Software

☒ Electronic Manuals

☒ License Key

☐ Other:
[List Any Other Electronic Media Requirements]

☒ US Government Email Address for Software Delivery:
azizollah.kord@nist.gov

Installation

☐ N/A

[Enter Installation Requirements by Item]

☐ Vendor Technician on Site

☐ Rigging

☐ Uncrating / Unpackaging

☐ Removal of Packaging Material

☐ Equipment Set Up

☐ Start-Up Services

☒ Turnkey Installation

☒ Other: Remotely via Microsoft Teams

NOTE: TPOC shall be the coordination POC.

Facility / Utility Considerations ☐ N/A	[List Site Specific Utility Considerations by Item] ☐ OFPM Work Order Numbers [List Work Order Numbers] ☒ Power Available Voltage: 110 (V) Maximum Current: [Enter max current draw] (A) Phase: [Choose Phase] Frequency: [Typically 60Hz] (Hz) NEMA Plug Type: [Enter Plug Type] (i.e.: NEMA L5-20P) Environment: [Choose Environment] Other Power Considerations: [List Any Other Power Considerations.] ☐ Utility Connections: [List Relevant Available Utilities, Pressure(s) and Flowrate(s).] ☐ Other Considerations: [List Other Considerations to Ensure an Accurate Quote.]
Inspection and Acceptance ☐ N/A	[Inspection Requirements Per Item (Who, When, What, Where)] ☐ On-Site ☒ Acceptance Not Expected to Exceed 7 Business Days ☐ Acceptance Expected to Exceed 7 Business Days: ☒ Inspection and Acceptance Plan: Basic functional test and key performance indicators (KPIs) verification. ☐ Other: [Enter Other Requirements]
Training ☐ N/A	Training Requirements (Who, When, What, Where) ☒ Number of Trainees: 10

☐ On-Site

☒ Off-Site Location: Virtual

Is Trainee Travel Required: NO

Scope of Training

☒ Operation ☒ Maintenance ☒ Troubleshooting

☒ Safety ☐ Other

[Enter Other Scope of Training Requirements]

☐ Training Materials to be Provided by Government:

[Describe Materials]

☒ Training Materials to be Provided by Vendor:

PowerPoint presentation, electronic manual, or others.

☐ Other

NOTE: TPOC shall be coordination POC.

Warranty

☐ N/A

Base Manufacturer Warranty is acceptable

Warranty Length: 3 - years

What is included?

☒ Labor ☒ Parts ☒ Travel

☒ Cost and Liability for Returns

☒ Other

Within 5 business days.

☐ 1 Option Period

☐ 2 Option Periods

☐ 3 Option Periods

☐ 4 Option Periods (Maximum)

Calibration ☒ N/A	[Describe Calibration Requirements Per Item] Calibration Plan Length: [i.e. 3 - Years] What is Included? ☐ Labor ☐ Spare Parts ☐ Consumables ☐ Travel ☐ Cost and Liability for Shipment ☐ Software Updates ☐ Manuals ☐ Other [Enter Other Requirements] ☐ Requirements: [Enter Requirements] (i.e.: On-Site Within 72 hours, etc.) ☐ 1 Option Period Length: [i.e. 1 – Year / 6 - Months] ☐ 2 Option Periods ☐ 3 Option Periods ☐ 4 Option Periods (Maximum)
Maintenance ☐ N/A	[Describe Maintenance Requirements Per Item] Maintenance Plan Length: 3-years What is Included? ☐ Labor ☐ Spare Parts ☐ Consumables ☐ Travel ☐ Cost and Liability for Shipment ☒ Software Updates ☐ Manuals ☐ Other [Enter Other Requirements] ☐ Requirements: [Enter Requirements] (i.e.: On-Site Within 72 hours, etc.) ☐ 1 Option Period Length: [i.e. 1 – Year / 6 - Months] ☐ 2 Option Periods ☐ 3 Option Periods ☐ 4 Option Periods (Maximum)
Government Furnished	☐ Samples for Testing

Material / Equipment ☐ N/A	☐	Equipment which will leave Government Site Description: [Enter Description] Serial Number: [Enter Serial Number] NIST Property Number: [Enter NIST Property Number]
	☒	Other: Current generation of handsets
Travel ☒ N/A		
	☐	Explain: [Enter Justification / Requirement]
	☐	Other: [Enter Other Requirements]
		NOTE TO VENDOR: To the maximum extent possible, include travel requirement estimates as part of pertinent sections above (Installation, Maintenance, Repair, etc.). Otherwise, Travel will be a separate line item, reimbursable per the Federal Travel Regulation.