

RFP No. FSID/IOSMCN/05-04 Dated: 03rd June 2024

Foundation for Science Innovation and Development (FSID)



REQUEST FOR QUOTATIONS (RFQ) DOCUMENT

FOR

**Supply of Indoor Radio for 5G Radio Access
Network Product**

**India Open Source for Mobile Communication
Network (IOS MCN) Project**

**Foundation for Science Innovation and Development
IISc, Bengaluru**

Notice Inviting RFQ



TENDER

NOTICE NO. FSID/IOSMCN/05-04

Dated: 03rd June 2024

BID SCHEDULE			
Sl.No.	Bid Activity	Date	Time
1	Notification	03/06/24	10:00 AM
2	Bid Query	10/06/24	5:00 PM
3	Answers to Bid Queries	12/06/24	10:00 AM
4	Submission of Bid	22/06/24	5:00 PM
5	Opening of Technical Bid	22/06/24	10:00 AM
6	Completion of Technical interaction and Demonstration of bidder's Technical Solution to the Technical Evaluation Committee	06/07/24	5:00 PM
7	Completion of Technical Evaluation	07/07/24	5:00 PM
8	Opening of financial Bid	09/07/24	10:00 AM

Pre-bid queries should be addressed to email: smohammed@fsid-iisc.in and Cc: Vinay Kulkarni vinay@fsid-iisc.in

Mode of Bid Submission: Please refer to Para 5 for instructions.

Technical Bid: Can be submitted by email. In addition, a hard copy has to be sent to the address.

Financial Bid: Quotes for the product must be enclosed in a password-protected PDF file emailed to Puja Srivastava at puja.srivastava@datakaveri.org, cc: Chethan at chethan@fsid-iisc.in or sent a hard copy in a sealed envelope @ **Address: 5G Lab, Dept. of Electrical Communication Engineering, Indian Institute of Science, Bangalore – 560 012.**

Date:

Address: 5G Lab, Dept. of Electrical Communication Engineering, Indian Institute of Science, Bangalore – 560 012

Tel. 080-2293-2464

Chandra R. Murthy
Chief Project Investigator

Chandra R. Murthy, Ph.D.
Professor, ECE Department
Indian Institute of Science
Bangalore 560 012, India



REQUEST FOR QUOTATIONS.

1. INTRODUCTION

As part of the MeitY funded India Open source for Mobile Communication Networks project the procurement is being done for setting up the lab infrastructure. We seek quotations from qualified vendors for the procurement of server systems to support the development and testing of Radio Access Network (RAN) infrastructure. The selected server systems will be utilized for testing, simulation, and development purposes in our telecommunications research and development initiatives.

2. SCOPE OF WORK:

Provide server systems configured to meet the specifications outlined below, including all necessary hardware, software, and peripherals required for development and testing activities. The delivery should also include transceivers, optical cables, power cords and appropriate ethernet cables which facilitate the development and testing activities. Ensure compatibility with virtualization platforms, software-defined networking (SDN), and network function virtualization (NFV) frameworks commonly used in RAN development environments. Deliver server systems that offer scalability, reliability, and performance to accommodate future expansion and evolving project requirements. Include warranty, technical support, and maintenance services to ensure the continued operation and reliability of the server systems.

3. TECHNICAL REQUIREMENTS

Mentioned below are the server specifications that are must for the quote to be sent for development of the RAN system.

Please refer to the table below ANNEXURE-1 **Specifications**

Please refer to the table below ANNEXURE-2 **PoC (Proof of Compliance)**

Please refer to the table below ANNEXURE-5 **BoQ (Bill of Quantity)**



4. QUANTITY OF REQUIREMENTS

The hardware specified in the mentioned specifications, along with all contingency requirements, is required in the quantity of 2 (**Two**) units. Vendors are requested to provide quotations that include the following:

Per Unit Price: Please specify the price per unit of the hardware, inclusive of all specified components and features, as well as any additional contingency provisions.

Total Quantity Price: Calculate the total price for the specified quantity of units, incorporating all contingency requirements.

5. SUBMISSION REQUIREMENTS

The quotation should be submitted in the form of 2 separate documents as specified below:

1. **TECHNICAL EVALUATION DOCUMENT:** This should contain the following:

- a. A checklist indicating compliance with or deviation from the above technical requirements.
- b. technical datasheet of the server which includes all or subset of the requirements specified in the technical requirements.
- c. Certifications and compliance documentation if any should be included with the quotation.

2. **COMMERCIAL BID DOCUMENT:**

- a. Quotations should include detailed pricing, including unit prices, taxes, shipping costs, and any additional fees.
- b. Provide information on warranty terms, technical support services, and maintenance agreements.
- c. Include company profile, relevant experience, and references from past projects.
- d. Quotes for the product must be enclosed in a password-protected PDF file emailed to **Puja Srivastava at puja.srivastava@datakaveri.org, cc: Chethan at chethan@fsid-iisc.in** or sent a hard copy in a sealed envelope @ **Address: 5G Lab, Dept. of Electrical Communication Engineering, Indian Institute of Science, Bangalore – 560 012.**

Tel. 080-2293-2464



Foundation for Science Innovation and Development (FSID)

e. Quotations must be addressed to

Director,

Foundation for Science Innovation and Development

Innovation Centre, IISc Campus Near Maramma Circle gate

Bengaluru 560012 GSTIN: 29AAECF1802E1Z1

IMPORTANT: Vendors must submit their quotations no later than the specified deadline.

6. EVALUATION CRITERIA

The evaluation criteria include considering the quote and awarding with the purchase order include,

- Compliance with RFQ requirements and specifications.
- Price competitiveness.
- Vendor experience, and track record.
- Warranty and support offerings.
- Technical capabilities and compatibility with existing infrastructure.

7. IMPORTANT NOTES

- The lowest-priced quotation may not necessarily be selected. Quality, reliability, and vendor reputation will also be considered.
- IOS MCN reserves the right to reject any or all quotations and to award the purchase order on its own evaluation criteria.
- Any clarifications or questions regarding this RFQ should be directed to the contact person listed above.

8. Delivery & Penalty notes:

- 4 to 6 weeks from the date PO
- After 6 weeks, a penalty @1% per week for delays in delivery will be applied. The maximum limit of penalty would be 10%.

ANNEXURE-1**Indoor Radio Specifications for Bidder Compliance**

Technical evaluation	
NR Radio Specifications	Description
Band	n78
Frequency range	>=200MHz
Instantaneous Bandwidth (IBW)	100MHz
Duplex Mode	TDD
Modulation	QAM 256/64/16/QPSK
Number of Component carriers	1
Antenna configuration	4T4R
RF output power per port	250mW/ 24dBm
Connectivity specifications	
Physical data port:	10G Base-T Eth over SFP
Interface Protocol	ORAN split 7-2 CAT-A
Time and synchronization	IEEE 1588v2, ITU T G.8275.1
Specification compliance	
3GPP spec compliance	>=Release 15
O RAN compliance CUS	>=V2
O RAN compliance M plane	>=ORAN WG4. MP.0-v01
Interoperable with one or more opensource RAN (Mandatory)	OAI and/or SRS



Foundation for Science Innovation and Development (FSID)

Detailed test evaluation	For details of all tests done on the RU.
Deployments done	Specify the RAN software
Certifications	For the certifications done for the RU.
AMC and Support	Major issues within 24 hours and other issues within 3 days
Accessories	Fans, Stand, cables, antennas, power supply, JTAG as appropriate
Warranty	Provide the warranty for the Radio unit.

**ANNEXURE-2****Proof of Compliance.**

Seq. No.	Specification	COMPLIANCE/ Observation/Remarks
1	Band n78	
	Frequency range ≥ 200 MHz	
2	IBW 100MHz (max)	
3	Duplex Mode TDD	
4	Modulation QAM 256/64/16/QPSK	
5	Number of Component carriers 1	
6	Antenna configuration 4T4R	
7	RF output power per port 250mW/24dBm	
9	Physical data port 10G Base-T Eth over SFP	
10	Interface Protocol ORAN split 7-2 CAT-A	
11	Time and synchronization IEEE 1588v2, ITU T G.8275.1	
13	3GPP spec compliance \geq Release 15	
14	O RAN compliance CUS \geq v02	
15	O RAN compliance M plane \geq ORAN WG4. MP.0-v01	
16	Interoperable with one or more opensource RAN (Mandatory)	
17	Certifications	
	Remarks	



ANNEXURE-3

Self-declaration is to be given by the bidder.

RFQ Reference No.

Date:

Bidder's Name & Address:

Person to be contacted:

Designation:

Telephone No:

Fax No:

Email:

To,

Director,

FSID, IISc Bangalore-560012

We, the undersigned Bidder, having carefully read and examined in detail the Terms and Conditions, specifications, and all bidding documents regarding the supply of the RAN server at FSID accept the same.

We also hereby declare that.

1. We have not been blacklisted/debarred by any Government/Undertaking.
2. The rates quoted are not higher than the rates quoted for the same item for any Government/Undertaking.
3. The bid submitted by us is properly sealed and prepared to prevent any subsequent alteration and replacement.

For and on behalf of the firm

(Firms Name & Address)

(Signature of Authorized
Signatory)

Name:

Date: -----

Designation:

Place: -----

Seal

Phone No:



ANNEXURE – 4

Bidder Organisation Details Format for RFQ No. FSID/IOSMCN/05-04 Dated 03/06/24		
To, Director, FSID, IISc Bangalore-560012		
1	Bidder Name	
2	Website Address	
3	Email Address	
4	Address for Communication	
5	Telephone Number	
6	Fax/Telefax Number	
7	Authorised Person Name	
8	Designation:	
9	Mobile No.	
10	Email ID	
11	Alternate Person Name	
12	Designation:	
13	Mobile No.	
14	Email ID	
15	PAN Number	
16	GST Regn. No. with Address	
17	Beneficiary's complete Bank Details.	
18	Bank Account No.	
19	IFSC / NEFT Code	
20	Name of the Bank	
21	Turnover of the Bidder in last 3 years	
22	2023	
23	2022	
24	2021	
25	Are you a MSME Unit. If yes, please furnish. Registration Details, Name of the DIC/State.	
26	If you are MSME, is it owned by SC/ST Entrepreneurs or Women Entrepreneurs? If Yes, please specify the Name of the Owner who is SC or ST or Women Entrepreneur (as applicable)	
27	Following Documents are to be submitted	
28	Certificate of Incorporation	
29	PAN No	
30	GST Registration No.	
31	DECLARATION S) We have read and understood the terms & conditions of the above-mentioned tender and comply to all Terms & Conditions of the Tender.	Signature of Authorised Signatory with Seal (Name)



Foundation for Science Innovation and Development (FSID)

	(In case of any deviation, the Bidder must attach a separate sheet clearly mentioning the Clause No. of the Tender and Deviation thereto) 2) We certify that the information mentioned above are true and correct to best of our knowledge.	
32	Place	

RFP No. FSID/IOSMCN/05-04 Dated: 03rd June 2024

Foundation for Science Innovation and Development (FSID)



ANNEXURE-5

BoQ

RFQ No: FSID/IOSMCN/05-04 Dt 03/06/24 for Supply of Indoor Radio				
Sl. No	Equipment/Devices	HSN Code	Qty	Compliance (Yes/No)
1.	NR Radio		2	



ANNEXURE-6

Format: Letter of undertaking

(Company letterhead)

To,

Director,
FSID, IISc Bangalore-560012

Sir,

Sub: Undertaking on non-disclosure of contract documents

I/We do hereby undertake that we shall not disclose the contract or any provision, specification, plan, design, pattern, sample, or information to any third party for a period of three years from the termination of the contract.

I/We do hereby undertake that except with the written consent of the Buyer/Seller, the other party shall not disclose the contract or any provision, specification, plan, design, pattern, sample or information to any third party.

I/We do hereby undertake not to copy the AS-IS documentation captured in this tender document in any form Xerox, electronic, or via DMS or any other physical/electronic means. For any purpose but for the bidding process.

For and on behalf of the
Bidder

(Signature)

(Name of the Authorized Signatory)

Date:



ANNEXURE-7

Financial Bid Format

RFQ No: FSID/IOSMCN/05- 04Dt 03/06/24 for Supply of Indoor Radio					
Sl. No	Equipment/Devices	Qty	Unit Rate in INR	GST in INR	Total with GST in INR

- **Delivery charges**
- **Installation charges**
- **AMC charges for 3 years**

END THE DOCUMENT