



**Institute for Development and Research in  
Banking Technology**  
(Established by Reserve Bank of India)

# **Request for Expression of Interest (REOI)**

**For**

## **5G Private Network Setup in 5G Use Cases Lab at IDRBT, Hyderabad**

**Institute for Development and Research in Banking Technology IDRBT,  
Castle Hills,**

**Road No.1, Masab Tank, Hyderabad – 500057, TS.**

July 2022

NOTE: This document contains 12 pages

This document is the property of Institute for Development and Research in Banking Technology (IDRBT). It may not be copied, distributed or recorded on any medium, electronic or otherwise, without the IDRBT's written permission thereof, except for the purpose of responding to IDRBT for the said purpose. The use of the contents of this document, even by the authorized personnel / agencies for any purpose other than the purpose specified herein, is strictly prohibited and shall amount to copyright violation and thus, shall be punishable under the Indian Law.

## REOI Schedule

Sr.No.	Subject	Date/time
1	REOI Ref. Number & Date	Tender No. IDRBT/5G/AKT/108/2022 – 2023 dated 25 <sup>th</sup> July 2022.
2	Start date of issuance of REOI Document	25.07.2022
3	Last Date for receipt of Queries	05.08.2022
4	Query clarification meeting	08.08.2022, 16.00 Hrs
5	Last Date for IDRBT's response to Queries	02.09.2022
6	Last date for receipt of Solution Proposals	05.09.2022, 16.30Hrs
7	Technical Solution presentation	12.09.2022 to 14.09.2022
8	Solution Design(s) workshop	15.09.2022
10	Website address	<a href="http://www.idrbt.ac.in">www.idrbt.ac.in</a>
11	E-mail address for communication	<a href="mailto:esrihari@idrbt.ac.in">esrihari@idrbt.ac.in</a> ; <a href="mailto:AbhishekT@idrbt.ac.in">AbhishekT@idrbt.ac.in</a>

## Table of Contents

1.	<i>Statement of Purpose</i>	4
2.	<i>Objective of the project</i>	4
3.	<i>Scope of work</i>	4
4.	<i>Technical Specifications</i>	5
5.	<i>Terms and Conditions</i>	7
6.	<i>Eligibility Criteria</i>	7
7.	<i>Formats for submission</i>	9
7.1.	<i>Participant Letter format</i>	9
7.2.	<i>Contact details of Participants Organization / Consortium</i>	10
7.3.	<i>Organization experience in similar projects</i>	11
7.4.	<i>Technical Compliance sheet of REol</i>	12

## 1. Statement of Purpose

5G Use Cases Lab (UCL) intends to experiment with 5G and related technologies to showcase Banking and Financial Services (BFS) use cases. In this context, the Lab is exploring alternatives for RAN, CORE and Edge deployments for BFS use cases. These alternatives will be analyzed for identifying design choices and subsequent acquisition through a RFP.

## 2. Objective of the project

The Institute for Development and Research in Banking Technology [IDRBT] was established in March 1996 as an Autonomous Centre for Development and Research in Banking Technology, by RBI with the vision "To be the premier and preferred Research and Development Institution on Financial Sector Technology and its Management, working at the intersection of Banking and Technology for the Indian Banking."

5G Use Cases Lab has been setup at IDRBT with funding by DoT and active support of DFS to provide an innovation showcase and interoperability test environment for banking and financial services.

Multiple BFS use cases would be tested and demonstrated on 5G environment. Other than private networks (non-public networks in 3GPP terminology), edge compute integration, interoperability and cross-network slices would be experimented across these setups.

## 3. Scope of work

The UCL aims to deploy 5G and related technologies to simulate three levels of industry needs:

**Setup-A:** Open research oriented system – for lab experiments

- 10 m X 10 m lab: two distinct solutions for interop each with (at least one to be 4G /NSA)
  - with 20 simultaneous UE;
  - peak load for a UE at 50 mbps;
  - avg. load for UE 5 mbps (100 mbps total avg. load)
  - MEC in Lab;
  - Optional: RAN(mm-Wave) based edge for experiments

**Setup-B:** Private enterprise network – for small enterprise scenarios

- Three branch bank/entity each with 10 m x 10 m office and a walled locker area (MEC at one site): Each branch with

- 40 simultaneous UE;
- peak load for a UE at 20 mbps; avg. load for UE 5 mbps (200 mbps total avg. load)

**Setup-C:** Private enterprise network – for large-scale distributed enterprise scenarios

- Simulate large bank/entity (> 1000 branch): solution for 5 branches, each with three room setup – main hall 10 m x 10 m; locker area – 2m x 4 m; ATM/Kiosk/Front lobby: 3mx3m: Each branch with
  - 100 simultaneous UE;
  - peak load for a UE at 50 mbps; avg. load for UE 5 mbps (500 mbps total avg. load)

Besides operating within IDRBT campus, it is expected that parts of this solution would be portable to allow real world experiments to be carried out in field (say bank branches or customer sites).

The response to this EoI vendor should provide the following details for each of the 3 setups.

- Solution Overview
- Solution extensions
- Deployment Architecture
- MEC solution (if any)
- User Equipment support
- Sourcing plans (supply chain)
- Integration capabilities (API based)
- Benefits of proposed solution
  - Solution robustness- Reliability, Availability
  - Scalability
  - Energy usage
  - Others please add
- Risks/Limitations
- License Model(s)
- Solution Support

## 4. Technical Specifications

Following Table captures the salient points for the Setups. Based on EoI responses specs may be revised.

Req. #	Tech. Area	Applicable setups	A	B	C
R1	Radio / RAN	ORAN compliance: Preferred, or Integrated (Non-ORAN)	P	P/I	P/I
R2		3GPP Release readiness: Minimum Release 15 compatible, future Upgrades to support Release 17	MU	MU	MU
R3		Radio Units counts: Vendor to specify based on models proposed	1-2	2-5	> 5
R4		MIMO support – vendor to specify based on deployment needs and proposed models			
R5		Radiated Power levels: Indoor / Outdoor – vendor to specify	I	I	IO
R6		Bands of Operation: Vendor to specify <b>Must:</b> N78; <b>Optional:</b> LTE – vendor to specify, <b>Unlicensed</b> - N46/47	M/ L/ U	M	M
R7		<b>mmWave:</b> For future: Vendor to specify	<b>mm</b>		
R8	4G / 5G Core	<b>SA, NSA</b>	S N	S	S
R9	MEC platform	MEC platform to run edge applications and management platform for resource / service orchestration etc.;			
R10	Computer Hardware (for RAN / MEC)	Generic Hardware preferred: Besides running the software components for RAN, Hardware specs to be specified by vendor			

#### Other aspects of the proposed solution/SI:

Please specify details on following broad areas (Expand for sub-modules in solution, if needed):

##### OR1. Performance

- Max concurrent UEs supported per gNB
- Sustained max single UE throughput per gNB
- Any other performance parameters for gNB
- Number of gNBs and UEs supported by Core

##### OR2. Solution robustness: Please provide details on redundancy, fault tolerance etc.

##### OR3. Ease of use/management

- OR4. Compatibility with 3GPP releases /ORAN releases
- OR5. Services available in 5G/4G Core and their spec. compliance levels
- OR6. Interoperability with 3rd party Core
- OR7. Scalability/Modularity for adding 3<sup>rd</sup> party Radio units
- OR8. Prior implementation experience/Solution maturity
- OR9. MEC Integration, interoperability, orchestration
- OR10. Diversity of user equipment supported: list devices supported beyond 5G smart phones
- OR11. Support for 4G only/5G only/4G+5G
- OR12. Ability/Experience for prior demo / PoC: provide supporting documents if available
- OR13. Software / Licenses / Patents: Please elaborate on 3<sup>rd</sup> Party Components
- OR14. Cost Estimate: Approx. Purchase / Rent (optional – for various setups)
- OR15. Other key features/capabilities

## 5. Terms and Conditions

1. No contractual obligation whatsoever shall arise from the REoI process unless and until a formal contract is signed and executed by IDRBT.
2. All EoIs and supporting documentation shall be submitted in English.
3. The cost of participation and submission of EoI documents is entirely the responsibility of Participants, regardless of the conduct or outcome of the process.
4. IDRBT reserves the right to reject all or any of the EoIs without assigning any reason thereof.
5. The REoI participants should make a presentation on the proposed solution after the REoI last date.
6. The EoI shall not be accepted after the last date and time, and should be valid for six months from the date of submission.
7. Participants in EoI should honor IPRs of other participants, as applicable.
8. The decision of IDRBT shall be final for subsequent RFP that follows this REoI.

## 6. Eligibility Criteria

Sno	Participants Eligibility Criteria	Full Compliance (Y/N)	Provide Documentary evidence
1	The Participant shall provide evidence that it is a current legal entity (consortium is allowed).		
2	The participant should be capable of supporting the solution for next two years (aspects of Software and Hardware both).		
3	The participant should have end to end experience and expertise in setting up of 5G environment (RAN, CORE and Edge deployments).		

4	The participant should submit relevant documents of their R&D expertise available within their organization/consortium with experience in technical areas as mentioned in "Scope of Work" of this REoI		
5	The Participant shall provide references (including Referee names and contact details) in respect of major projects of similar type completed in the last three (3) years. The information should include the Entity name, scope of the project, and timelines.		
6	The cost of participation and submission of REoI documents is entirely the responsibility of Participants, regardless of the conduct or outcome of the process.		



## 7. Formats for submission

### 7.1. Participant Letter format

To,  
The Director,  
IDRBT, Hyderabad

**Submission of Request for Expression of Interest to undertake work as specified in REoI Reference No:**

Dear Sir,

In response to the Request for Expressions of Interest (EOI) published on dated\_\_\_\_\_, for the purpose of 5G Project, we would like to participate in the REoI to 5G Lab setup. As advised, we are submitting the following documents as our response:

S.No.	Document Name	Submitted
1.		
2.		
3.		
4.		
5.		
6.		

Authorized signatory on behalf of Company/Consortium

Company Name:

Signature:

Stamp and date:

## 7.2. *Contact details of Participants Organization / Consortium*

[add more rows as needed]

Name (Organization/Consortium):

Name:

Designation:

Phone No:

Email id:

Authorized Signatory of all Members Company

Stamp & Date

### 7.3. Organization experience in similar projects

Name		
Domain experience in three recent projects (if available).		
S.NO.	EXPERIENCE DESCRIPTION	
1	Name of the Project	
	Domain expert contribution to the project involved in.	
	Project result.	
	Project period	
2	Name of the Project	
	Domain expert contribution to the project involved in.	
	Project result.	
	Project period	

To be signed by authorized signatory of company/consortium

#### 7.4. *Technical Compliance sheet of REol*

<b>Clause No</b>	<b>Technical Requirement</b>	<b>Specifications / Details / Sub-component</b>	<b>Comments</b>
R1			
R2			
..			
R9			
R10			
OR1			
..			
OR15			

To be signed by authorized signatory of company/consortium