

**DIRECTORATE OF POLICE TELECOM. (POLICE HQRS.) RAJ., JAIPUR**

No. A-23(12)Pt-1/PTC/PUR/2023-24/4219

Dated:- 05.12.2023

**RFP for Design, Supply, Testing, Installation, Commissioning, and Maintenance of DMR Tier III system at Kota city & District Bharatpur and DMR Tier II system at District Deeg, Rajasthan**

Estimated Procurement Cost	16.65 Crore (Item 1. DMR TIER – III) 02.95 Crore (Item 2. DMR TIER – II)
Mode of Bid Submission	Online through e-Procurement/e-Tendering system at <a href="https://eproc.rajasthan.gov.in">https://eproc.rajasthan.gov.in</a>
Procuring Entity	Director Police Telecommunications, Rajasthan
Correspondence Address	Directorate Police Telecommunications, Police Headquarters, Lal Kothi, Jaipur, Rajasthan 302015
Mobile No.	09414796190, 09785985758
Telephone Nos.	0141-2821709
Website & E-Mail	<a href="http://police.rajasthan.gov.in">http://police.rajasthan.gov.in</a> , <a href="mailto:purchase.ptc@rajpolice.gov.in">purchase.ptc@rajpolice.gov.in</a>
Bid download/Sale Start Date	06.12.2023 from 03.00 P.M.
Pre-bid queries Submission Start Date	06.12.2023 from 03.00 P.M.
Pre-bid queries Submission End Date	13.12.2023 up to 03.00 P.M.
Pre-bid Meeting Date	15.12.2023 at 11.30 A.M.
Pre-bid queries Response Submission Date	22.12.2023 at 05.00 P.M.
Bid Submission Start Date	27.12.2023 from 03.00 P.M.
Bid download and Submission End Date	18.01.2024 up to 03.00 P.M.
P.Q. and Technical Bid opening Date	19.01.2024 at 11.30 A.M.

(Dr. Ravi Prakash)  
Director General of Police  
& Director Police Telecommunication  
Rajasthan, Jaipur



## Rajasthan Police

*RFP for*

*Design, Supply, Testing, Installation, Commissioning, and  
Maintenance of DMR Tier III system at Kota city & District  
Bharatpur and DMR Tier II system at District Deeg, Rajasthan*

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### **Director Police Telecommunication, Jaipur**

Police Headquarters  
Lalkothi, Jaipur, Rajasthan 302015  
Phone: 0141-2821709  
Web: <http://police.rajasthan.gov.in>, Email:  
[purchase.ptc@rajpolice.gov.in](mailto:purchase.ptc@rajpolice.gov.in)

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## LIST OF ABBREVIATIONS/ACRONYMS

<b>ACCC</b>	Abhay Command Control Centre
<b>Addl. DGP</b>	Additional Director General of Police
<b>BC</b>	Banker's Cheque
<b>BG</b>	Bank Guarantee
<b>BOM</b>	Bill of Material
<b>BoQ</b>	Bill of Quantity
<b>CA</b>	Chartered Accountant
<b>CAS</b>	Core Application Software
<b>CPU</b>	Central Processing Unit
<b>CST</b>	Central Service Taxes
<b>DB</b>	Data Base
<b>DC</b>	Data Centre
<b>DD</b>	<b>Demand Draft</b>
<b>DFD</b>	<b>Data Flow Diagram</b>
<b>DGP</b>	Director General of Police
<b>Dy. IGP</b>	Deputy Inspector General of Police
<b>DoIT&amp;C</b>	Department of Information Technology & Communication
<b>DR</b>	Disaster Recovery
<b>DSC</b>	Digital Signature Certificate
<b>DySP</b>	Deputy Superintendent of Police
<b>FIR</b>	First Information Report
<b>FTP</b>	File Transfer Protocol
<b>G2G</b>	Government to Government
<b>G2C</b>	Government to Citizen
<b>GOI</b>	Government of India
<b>GRP</b>	Government Railway Police

<b>GST</b>	Goods and Service Tax
<b>GUI</b>	Graphical User Interface
<b>HLD</b>	High Level Design
<b>HTTP</b>	Hypertext Transfer Protocol
<b>ICAI</b>	Institute of Chartered Accountants of India
<b>ICT</b>	Information & Communication Technology
<b>IGP</b>	Inspector General of Police
<b>INR</b>	Indian Rupees
<b>IPR</b>	Intellectual Property Rights
<b>ITB</b>	Instructions to Bidders
<b>IT</b>	Information Technology
<b>ITeS</b>	Information Technology Enabled Services
<b>LAN</b>	Local Area Network
<b>LD</b>	Liquidated Damages
<b>LLD</b>	Low Level Design
<b>MeitY</b>	Ministry of Electronics and Information Technology
<b>MHA</b>	Ministry of Home Affairs
<b>MMP</b>	Mission Mode Project
<b>NCRB</b>	National Crime Records Bureau
<b>NeGP</b>	National e-Governance Plan
<b>NIB</b>	Notice inviting Bids
<b>NIC</b>	National Informatics Centre
<b>NOC</b>	No Objection Certificate
<b>OEM</b>	Original Equipment Manufacturer
<b>OS</b>	Operating System
<b>PAN</b>	Permanent Account Number
<b>PBG</b>	Performance Bank Guarantee

<b>PHQ</b>	Police Headquarters
<b>PoA</b>	Power of Attorney
<b>PSD</b>	Performance Security Deposit
<b>Purchaser/ Tendering Authority/ Procuring Entity</b>	Person or entity that is a recipient of a good or service provided by the bidder under a purchase order or contract of sale. Also called buyer. Director Police Telecommunications, Rajasthan in this RFP document.
<b>QA</b>	Quality Assurance
<b>RSWAN</b>	Rajasthan State Wide Area Network
<b>RSDC</b>	Rajasthan State Data Centre
<b>RajNET</b>	An umbrella network covering RajSWAN, SecLAN, GRAMSAT, VSAT and any other network of Govt. of Rajasthan.
<b>RFP</b>	Request for Proposal
<b>RISL</b>	RajCOMP Info Services Limited
<b>SecLAN</b>	Secretariat Local Area Network
<b>SDPO</b>	Sub-Division Police Office
<b>SLA</b>	Service Level Agreement
<b>SP</b>	Superintendent of Police
<b>SSL</b>	Secure Sockets Layer
<b>SSO</b>	Single Sign On
<b>UAT</b>	User Acceptance Testing
<b>UI</b>	User Interface
<b>UT</b>	Union Territory
<b>UX</b>	User Experience
<b>VPN</b>	Virtual Private Network
<b>WAN</b>	Wide Area Network

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<b>Mode of Bid Submission</b>	Online through e-Procurement/e-Tendering system at <a href="https://eproc.rajasthan.gov.in">https://eproc.rajasthan.gov.in</a>
<b>Procuring Entity</b>	Director Police Telecommunications, Rajasthan
<b>Correspondence Address</b>	Directorate Police Telecommunications, Police Headquarters, Lal Kothi, Jaipur, Rajasthan 302015
<b>Mobile No.</b>	09414796190, 09785985758
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<b>P.Q. and Technical Bid opening Date</b>	19.01.2024 at 11.30 A.M.

## CHAPTER-1

### NOTICE INVITING BID (NIB)

<b>Name &amp; Address of the Procuring Entity</b>	Director Police Telecommunications, Address: Directorate Police Telecommunications Rajasthan ,Police Headquarters, Lalkothi, Jaipur, Rajasthan 302015
<b>Name &amp; Address of the Nodal Officer Project</b>	Name: Dr. Ravi Prakash Designation: DGP (Cyber Crime, SCRB and Technical services) Address: Directorate Police Telecommunications Rajasthan, Police Headquarters, Lalkothi, Jaipur, Rajasthan 302015 Email: <a href="mailto:purchase.ptc@rajpolice.gov.in">purchase.ptc@rajpolice.gov.in</a>
<b>Subject Matter of Procurement</b>	Design, Supply, Testing, Installation, Commissioning, and Maintenance of (Item 1) DMR Tier III system at Kota city & District Bharatpur and (Item 2) DMR Tier II system at District Deeg, Rajasthan
<b>Bid Procedure</b>	Single-stage: two parts (envelope) open competitive e-Bid procedure at <a href="http://eproc.rajasthan.gov.in">http://eproc.rajasthan.gov.in</a>
<b>Bid Evaluation Criteria (Selection Method)</b>	Lowest evaluated technically responsive bidder will be awarded the Contract.
<b>Websites for downloading Bidding Document, Corrigendum, Addendums, etc.</b>	<ul style="list-style-type: none"><li>• Websites: <a href="http://sppp.rajasthan.gov.in">http://sppp.rajasthan.gov.in</a>, <a href="http://eproc.rajasthan.gov.in">http://eproc.rajasthan.gov.in</a>, <a href="http://www.police.rajasthan.gov.in">http://www.police.rajasthan.gov.in</a></li><li>• Bid Document fee, RISL processing fee &amp; Bid security fee to be deposited through challan only, through e-grass portal. For e-challan on e-grass portal select office name" 15465-Director wireless Jaipur". Bid document fee (in favour of Director Police Telecommunication Jaipur) &amp; RISL processing fee (in favour of M. D. RISL Jaipur) can also be deposited by Banker's cheque/Demand draft while Bid security fee can also be deposited through Banker's cheque/Demand draft/Bank Guarantee/electronic Bank Guarantee in favour of Director Police Telecommunication Jaipur.</li><li>• Bidding Document Fee: Rs. 2000/- (Separately for Item 1 and Item 2). Select Revenue head 0075-00-800-52-01.</li><li>• RISL Processing Fee: Rs. 2500/- (for Item 1) and Rs. 2000/- (for Item 2). Select budget head 8658-00-102-(16)-(01)</li><li>• Bid Security fee budget head 8443-00-103-00-00.</li><li>• As per Rule No. 42 of RTTP Rules 2013, concession in bidding document/Bid security fee will be provided on submitting required documents/affidavits.</li></ul>



**Estimated Procurement Cost**

**Bid Security and Mode of Payment**

**Period of the download of Bidding Document (Start/End Date)**

**Manner, Start/End Date for the submission of Bids**

**Submission of e-challan for Bid document fee, Bid Security, Processing Fee and DD/Banker Cheque/Bank guarantee/e-B.G. of bid security**

**Date/Time/Place of P.Q. and Technical Bid Opening**

Scope of Work	Description of Work	Estimated Procurement Cost
Work Stream	<b>Design, Supply, Testing, Installation, Commissioning, and Maintenance of DMR Tier III system at Kota city &amp; District Bharatpur</b>	16.65 Crore (Item 1. DMR TIER – III)
	<b>Design, Supply, Testing, Installation, Commissioning, and Maintenance of DMR Tier II system at District Deeg</b>	02.95 Crore (Item 2. DMR TIER – II)
	<b>Capacity Building and Change Management</b>	

- 2% of the estimated procurement cost.
  - In the case of Small Scale Industries of Rajasthan, it shall be 0.5% of the estimated procurement cost and in case of sick industries, other than Small Scale Industries, whose cases are pending with the Board of Industrial and Financial Reconstruction; it shall be 1% of the estimated procurement cost. Concessional bid security may be taken from registered bidders as specified by the State Government. Every bidder, if not exempted, participating in the procurement process shall be required to furnish the bid security as specified in the Notice Inviting Bids.
  - online through e-GRAS on <http://e gras.raj.nic.in>.
  - Banker Cheque/Demand Draft/Bank Guarantee/e- B.G. in favour of Director Police Telecommunication Jaipur.
- 
- Start Date: . . .2023 from 03.00 P.M.
  - End Date:
- 
- Manner: Online at e-Procurement website (<http://e proc.rajasthan.gov.in>)
  - Start Date: . . .2023 from 03.00 P.M.
  - End Date:
- 
- Start Date: . . .2023 from 03.00 P.M.
  - End Date:
- 
- Date:
  - Place: Directorate of Police Telecommunications, Rajasthan, PHQ, Jaipur (Rajasthan)

**Date/Time/Place of Financial Bid Opening**

Will be intimated later to the technically qualified bidders

**Bid Validity**

01-year from the bid submission deadline. The bid security must remain valid 30 days beyond the original or extended validity period of the bid. The validity of bid security shall be 01 year + 30 days.

**Contact Person**

Dy.S.P. Main Stores, Police Telecommunication, Rajasthan, Jaipur

Note:

**1. Introduction**

This report provides comprehensive guidelines for the online bidding process established by the Rajasthan Police for procurement purposes. The guidelines cover various aspects of the process, including document submission, fees payment, registration, digital signature certificates, training, and more.

**2. Document Publication and Submission**

The complete bidding document has been made available for download on three official websites: "eproc.rajasthan.gov.in," "sppp.rajasthan.gov.in," and "police.rajasthan.gov.in." Bidders are required to submit their offers electronically for both technical and financial proposals. Physical submission of e-challans for Bid Document fee, Bid Security fee, and RISL Processing Fees is mandatory, as outlined in the Notice Inviting Bid (NIB). Scanned copies of these documents must also be uploaded along with the technical bid.

**3. Fees Payment and Registration**

Bidders must pay the bidding document fee, bid security fee, and RISL fee through the e-grass portal. Participation in the bidding process mandates registration on "eproc.rajasthan.gov.in." Bidders registered prior to September 30, 2011, are required to re-register.

**4. Digital Signature Certificate (DSC)**

To participate in online bidding, bidders must procure a Type III Digital Signature Certificate as per the Information Technology Act-2000. The certificate should be acquired from a CCA-approved certifying agency such as TCS, SafeScript, or NCode. Bidders with valid DSCs need not obtain new ones.

**5. Timely Submission**

Rajasthan Police emphasizes that delays in online submission due to any reason are not the responsibility of the organization. Bidders are advised to upload complete bids well in advance to avoid last-minute issues arising from website congestion or other unforeseen problems.

**6. Bidders Manual Kit and Training**

Bidders are encouraged to refer to the "Bidders Manual Kit" available on the e-Procurement website for detailed information about the e-Tendering process. RISL also provides training sessions on using the e-Tendering System. Interested bidders can book training slots through the e-Procurement Cell at RISL.

**7. Contact Information**

For inquiries and assistance, bidders can reach out to the e-Procurement Cell at RISL through the following channels: Contact No: 0141-4022688 (Help desk available from 10 am to 6 pm on working days) Email: eproc@rajasthan.gov.in Address: e-Procurement Cell, RISL, Yojana Bhawan, Tilak Marg, C-Scheme, Jaipur

## **8. Procuring Entity's Rights**

The procuring entity retains the right to cancel the bid process and reject any or all bids as necessary.

## **9. Contractual Obligations**

No contractual obligations arise from the bidding document or process until a formal contract is executed between the procuring entity and the successful bidder.

## **10. Stamps Requirement**

Stamps used by bidders must originate from the state of Rajasthan.

## **11. Information Accuracy**

The procurement entity disclaims any errors in the bidding document and advises bidders to verify information independently. The provided information serves only to assist bidders in preparing logical bid proposals.

## **12. Legal Framework**

The provisions of the RTPP Act 2012, Rules 2013, and GF&AR thereto apply to this procurement. In case of inconsistencies between the bidding document and the RTPP Act 2012 and Rules 2013, the latter take precedence.

## **13. Quantity Flexibility**

The quantity listed in the Bill of Materials (BoM) is tentative. Additional quantities required within one year after commissioning will be supplied under the same contract terms.

## **14. Proof of Concept (POC) Demonstration:**

The bidder is required to demonstrate the complete functionality of the proposed systems at specified locations. This includes DMR Tier III and Tier II systems. Specific requirements for the demonstration are outlined in the document.

**Complete Functionality Demonstration:** The bidder shall demonstrate the complete functionality of both proposed systems, including all features and capabilities. This demonstration should include the establishment of intersite connectivity (for Tier III system), ensuring seamless communication across the network.

This requirement underscores the bidder's commitment to providing reliable and seamless communication solutions, particularly in critical areas such as public safety and security, as envisaged by the Rajasthan Police. Demonstrations play a pivotal role in evaluating the viability and effectiveness of the proposed systems, thereby facilitating informed decision-making by the procurement entity.

The successful completion of these demonstrations will serve as a significant milestone in the bidding process, demonstrating the bidder's technical expertise and the practical application of the proposed solutions. It is imperative that the bidder adheres to these requirements and executes the demonstrations with the utmost professionalism and accuracy.

## CHAPTER-2

### PROJECT PROFILE & BACKGROUND INFORMATION

#### 2.1 Introduction:

The Rajasthan Police has conceptualized the advance Digital Radio Communication project- in entire state. This is an effort of the Rajasthan Police to modernize the Rajasthan police force giving top priority to enhancing outcomes in the areas of Telecommunication. Streamlining the functioning of Police through leveraging Communication Technology in the Police Department has been given significant focus by the Government of Rajasthan way back in 2005 through the conceptualization of the analog RTS project in Jaipur City and DMR system at Jaipur Rural in 2017 & in 04 other districts thereafter. The use of the latest Telecommunication technology allows police officers to perform their jobs while on patrol, resulting in more efficiency, accuracy, and safety.

Rajasthan Police and specifically the Police Telecommunication (PTC) Wing have made significant progress in the implementation of the latest communication means, which meets the majority of the objectives of the PTC wing.

#### 2.2 Geographical information of Bharatpur/Kota City:

**Bharatpur** is a city in the Indian state of Rajasthan, 179.99 km (111.84 mi) south of India's capital, New Delhi, 178 km (111 mi) from Rajasthan's capital Jaipur, 55 km (34 mi) west of Agra of Uttar Pradesh and 38 km (24 mi) from Mathura of Uttar Pradesh. It is the administrative headquarters of Bharatpur District and the headquarters of Bharatpur Division of Rajasthan State. Bharatpur is part of National Capital Region of India. The city was the capital of the Bharatpur State.

**Kota** previously known as *Kotah*, is a city located in the southeast of northern Indian state of Rajasthan. It is located about 240 kilometres (149 mi) south of the state capital, Jaipur, situated on the banks of Chambal River. With a population of over 1.2 million, it is the third most populous city of Rajasthan after Jaipur and Jodhpur, 46th most populous city of India and 53rd most populous urban agglomeration of India. It serves as the administrative headquarters for Kota district and Kota division. Kota is a major coaching hub of the country for competitive examination preparations and has a number of engineering and medical coaching institutes.

#### 2.3 Current Status of existing communication system of Kota and Bharatpur:

Traditional VHF High Band( 136-174 MHz) Communication setup is functional in Kota city. VHF Low band (76-88Mhz) system is functional in Bharatpur and Deeg district.

## **2.4 Challenges of existing System**

- Rajasthan Police has conceptualized to install Radio Trunking system at each Range headquarter and Kota city & Bharatpur being a range headquarters, DMR Tier III Trunk system has been proposed for Kota city & Bharatpur.
- The communication area and users of Kota city & Bharatpur has increased a lot in recent years.
- High-rise buildings have increased with time, so penetration in communication has decreased.
- Many Mobile towers, cables, and high tension lines are creating a lot of interference in communication.
- Presently Bharatpur district is working on traditional VHF Low band (76-88 Mhz) system. This is an obsolete system and needs to be replaced immediately due to unavailability of equipment in these frequency bands.

## **2.5 Project Objectives**

- To install DMR Tier III communication system at Kota city and Bharatpur District.
- To install DMR Tier II communication system in Deeg District.
- To establish safe and secure communication between field forces and control centers, that cannot be tampered by unauthorized personnel.
- To establish a robust Digital Network which will provide all inherent advantages of Digital technology over Analog Network with fulfilling all present and future needs of Rajasthan Police.
- To achieve better control in day-to-day communication by defining different priority levels to Police officials with different designation as per protocols.

## **2.6 Project Beneficiaries**

The beneficiaries of the project would be:

- State Police Force of Rajasthan
- The citizens of the State of Rajasthan

## **2.7 Benefits Envisaged**

Some of the key benefits of this project would be:

- Improved communication between field force and control center.
- Quick response to emergencies like floods, earthquakes, riots, Disaster.
- Police will be able to offer a more secure and safe living atmosphere to citizens.
- Police will be able to successfully manage all crowd gathering events like the Political public meetings, Procession, Festivals, VVIP Visits etc.

## 2.8 Expected benefits to the stakeholders

The DMR project is expected to provide the following services and benefits to the various stakeholders.

S.No.	Stake Holder	Benefits
1.	Bharatpur, Deeg & Kota City Police	<ul style="list-style-type: none"><li>• Secure Communication</li><li>• Fast&amp; reliable Communication</li><li>• GPS enabled services</li><li>• Advance Technology of Communication</li></ul>
2.	Police Telecommunication	<ul style="list-style-type: none"><li>• Easy to maintain</li><li>• Highly Secure</li><li>• Redundant Network</li></ul>
3.	Citizen	<ul style="list-style-type: none"><li>• Faster and assured response from police to any emergency calls for assistance</li><li>• Multiple channels to access services from police</li></ul>

- **Pre Bid Meeting:**

A Pre Bid Meeting will be held at this office before the date of Technical Bid evaluation.

The officials of the Pre Bid meeting will be finalised by the Department later.

- **Pre qualification Criteria:**

- The Tenderer must fulfill the following conditions with supporting documentary proof. The documentary proof should be submitted in a separate cover along with Technical Bid.
- A letter of authority from OEM to support for supply, installation and commissioning must be enclosed.
- Bid Security amount or valid certificate for exemption (if any).
- The OEM must be well established in DMR – Tier II/III Communication System and the Tenderer must have a valid agreement, establishing their business associations OEM authorization shall be submitted.
- The Tenderer should have sufficient technical expertise and requisite infrastructure to develop/install/Maintain DMR Tier -II/III Communication System.
- A detailed list of past customers using the proposed system internationally along with contact, address etc. of each customer in order to show past performance in the execution of projects of a comparable nature and complexity shall be provided.
- The Tenderer should have qualified trained personnel in their company.

- **Evaluation Criteria**

- The Tenderer who meet all the specifications and requirements will be considered for the Financial Bid.
- Examination of Financial Bids Police Department will determine whether the Financial Proposals are complete, i.e. whether the Bidder has included all components as per the tender document. The Financial proposal shall have every item responded with clarity and to the point. Financial proposal shall be compared for the complete scope of work as per the Price Proposal Schedule, inclusive of all taxes and duties. The price schedule shall also have the Unit price Break-ups.

- **Demonstration & Proof of Concept (PoC):**

- The bidders qualifying after scrutiny of technical bids will be required to demonstrate the functionality of the quoted equipment at Bharatpur/Kota city, Deeg as under:
- The Bidder will be intimated one week in advance to demonstrate their offered solution with their proposed equipment.
- Bidder shall be given 02 (two) days period for setting up of their network for demonstration/field trial.
- Demonstrations/Field trials are mandatory. Vendor should arrange on site field trials/demonstration of full functionalities of Digital Hand Held Radios, DMR Tier – III Base Stations and Digital Mobile Radios as full functional network at Bharatpur/ Kota city. Radio equipment, which conforms to functional requirements and qualifies Proof of Concept (PoC) during field trials, will only be considered technically. Roaming demo for minimum 02 repeater sites will be viewed.
- DMR Tier II PoC shall be conducted at Deeg. Radio equipment, which conforms to functional requirements and qualifies Proof of Concept (PoC) during field trials, will only be considered technically.
- The bidders shall keep their demonstration setup in operation for 48 Hrs at the sites
- Technically qualified bidders will be eligible for entering in the financial bidding.
- The award of contract will be given to the bidder with lowest financial bid.

## CHAPTER-3

### PRE-QUALIFICATION/ELIGIBILITY CRITERIA

#### 3.1 A bidder participating in the procurement process shall possess the following minimum qualification/eligibility criteria:

S. No.	Basic Requirement	Specific Requirements	Documents Required
1.	Legal Entity	<p>The Bidder should be a Proprietorship firm duly registered either under the Rajasthan Shops &amp; Commercial Establishments Act, 1958 or any other Act of State/Union, as applicable for dealing in the subject matter of procurement</p> <p>(Note: A self-certified declaration regarding the non-applicability of registration to any Act should be submitted by the Bidder)</p> <p>OR</p> <p>A company registered under the Indian Companies Act, 1956</p> <p>OR</p> <p>A partnership firm registered under the Indian Partnership Act, 1932.</p> <p>OR</p> <p>A Limited Liability Partnership (LLP) firm registered under the Limited Liability Partnership Act, 2008.</p> <p>The entity should be operational in India for at least the last Three (3) financial years as of 31<sup>st</sup> March 2023. The Bidder has to be a single legal entity.</p>	<p>A self-certified declaration regarding the non-applicability of registration to any Act. However, proof of being in Telecom Industry business for since last Three years</p> <p>OR</p> <p>Certified copy of the Certificates of Incorporation for companies issued by the Registrar of Companies and Memorandum &amp; Articles of Association</p> <p>OR</p> <p>Certified copy of the Registration</p>
2.	Office in Bharatpur & Kota	<p>The Bidder must have an office in Bharatpur &amp; Kota, Rajasthan, or should furnish an undertaking that the same would be established within two months of issue of LOI. The bidder shall provide minimum two qualified engineers (for DMR TIER – II/III project) for 03 years warranty period.</p>	<p>Self-certification by the authorized signatory of the Bidder</p>



S. No.	Basic Requirement	Specific Requirements	Documents Required
3.	Tax registration and clearance	The bidder should be registered for: i. GST ii. PAN	Copies of relevant certificates of registration.  Copy of latest GST return/CA certification for no dues in this regard.
4.	Financial: Turnover from Telecom/Wireless Radio/IT/ITeS	Annual Turnover of the Bidder from Telecom/Wireless Radio/IT/ITeS services/ITeS Manufacturing in India during any of the last three financial years i.e. FY 2020-21 to 2022-23 (as per the last published audited balance sheet), should be at least Rs. 20 Crore.	Financial statements (Balance sheet and profit & loss statements) CA certificate with CA's registration number & seal. In case the Balance Sheet for FY 2022-23 is not audited then the Provisional CA Certificate for FY 2022-23 with CA's registration number & seal should be submitted.
5.	Financial: Net Worth	The Net worth of the Bidder as per the last published balance sheet, i.e. 2022-2023, should be positive.	A certificate with CA's registration number & seal. In case the Balance Sheet for FY 2022-23 is not audited then the Provisional CA Certificate for FY 2022-23 with CA's registration number & seal should be submitted.
6.	Technical Capability - I	Bidder must be an OEM or Consortium or authorised distributor/Channel partner of OEM in India.	Copy of relevant authorised certificate to be attached.

S. No.	Basic Requirement	Specific Requirements	Documents Required
7.	Technical Capability - II	The bidder should have obtained assignment(s) and completed/ successfully installed similar equipment (Digital Wireless sets, Digital VHF/UHF/ Trunking/APCO-25 phase 1/Phase2/DMR tier II/DMR tier III/LTE wireless sets/ services, where the value of the assignment(s) should be equal to or more than the value mentioned in column 4 or 5 or 6 of Table B of 3.1 of Chapter – 3, during the last Eight years starting from 01/01/2015 till the bid submission date.	Copies of supply order, work completion certificate/certificate of satisfactory installation.
8.	Mandatory Undertaking	<p>The Bidder: -</p> <ul style="list-style-type: none"> <li>a) should not be insolvent, in receivership, bankrupt or being wound up, not have its affairs administered by a court or a judicial officer, not have its business activities suspended and must not be the subject of legal proceedings for any of the foregoing reasons;</li> <li>b) and their directors and officers should not have been convicted of any criminal offense related to their professional conduct or the making of false statements or misrepresentation as to their qualifications to enter into a procurement contract within three years preceding the commencement of the procurement process, or not have been otherwise disqualified/ blacklisted under debarment proceedings;</li> <li>c) should not have a conflict of interest in the procurement in question as specified in the bidding document.</li> <li>d) should comply with the code of integrity as specified in the bidding document.</li> </ul>	A self-certified letter as per form 9 of chapter 12: Self-Declaration

S. No.	Basic Requirement	Specific Requirements	Documents Required
9.	Certifications	The Bidder must possess, at the time of bidding from last three years, a valid: i. ISO 9001: 2008 or later certificate	Copy of valid certificates
10.	DPL (dealer possession license)	Bidder must have valid (DPL) at the time of bidding	Copy of valid DPL to be submitted

**Table A (For Bid Security/Turn Over/PSD/SLA Bank Guarantee (SBG))**

S. No.	Category (as per Technical Specification)	The estimated cost of Procurement (In Rs. Lacs)	Turnover (In Rs. Lacs)	Bid Security Deposit (In % of order value)	Performance Security Deposit in form of e-Grass/DD/Banker's Cheque/Bank Guarantee/e-BG/FDR (In % of order value)	SLA Bank Guarantee (SBG) (In % of order value)
1.	2.	3.	4.	5.	6.	7.
1.	DMR TIER – III provided in Chapter 8	1665	2000	2	5 or rules applicable at the time of agreement	5
2.	DMR TIER – II provided in Chapter 8	295				

**Table B (for Technical Capability/Supply order)**

For Technical Capability, the Bidder should have completed the installation of the number of supply orders of the value as mentioned in column 4 or 5 or 6 in the table shown as below:

S. No.	Item	Similar Services	One Supply order of min. value (in Lacs)	Two Supply orders of Total value (in Lacs)	Three Supply orders of Total value (in Lacs)
1.	2.	3.	4.	5.	6.
1.	as per Chapter-8	Supply, Installation and Support services of similar equipment (Digital Wireless sets, VHF/UHF/Trunking/APCO-25 phase 1/Phase2/DMR tier II/DMR tier III/LTE wireless sets/services in India or abroad	600	650	700

**In addition to the provisions regarding the qualifications of the bidders as set out in Table A above:**

- a. The procuring entity shall disqualify a bidder as per the terms and conditions of this RFP.
- b. The procuring entity may require a bidder, who qualifies to demonstrate its qualifications again by the same criteria used to qualify such a bidder. The procuring entity shall disqualify any bidder that fails to demonstrate its qualifications again if requested to do so. The procuring entity shall promptly notify each bidder requested to demonstrate its qualifications again as to whether or not the bidder has done so to the satisfaction of the procuring entity.
- c. The participating bidders should meet the above criteria and the PQ forms, Technical Forms & Commercial/Financial Forms are to be submitted separately. Relevant documents in support of above with due attestation of the competent authority should be furnished along with the bid documents.
- d. In countries where manufacturers are authorized to export the equipment only through their authorized Dealers/Partners and/or Government marketing agencies, such agencies can also participate in the tender.
- e. Offer from firms whose business activities are limited to procuring items from manufacturers, both Indian and foreign and supplying the same to Client/User Department having no after sales service back up will not be entertained.
- f. Competent authority reserves the right in not considering the bid of a bidder, if such bidder is a previous successful bidder and had a past bad track record or their earlier performance was unsatisfactory on any count or they do not possess required experience in undertaking the work.
- g. Relevant supporting documents duly signed should be furnished without fail otherwise the bid is liable to be treated as "Non-Responsive".
- h. In case of consortium the lead bidder must be specified by the bidder.
- i. The lead bidder cannot be a partner in more than one consortium. In case of consortium no company will be allowed to participate in more than one bid i.e. they should have exclusive partners in case it is observed that any consortium have a common partner then such consortiums will stand disqualified and under no circumstances their bids will be entertained.
- j. The consortium bid submitted without valid consortium agreement/MoU (FORM-8) shall be treated as non-responsive.
- k. PQ Evaluation Committee will short list bidders who meet the Pre- Qualification criteria and the short listed bidders may allow for Technical Evaluation process take up by Technical Committee.
- l. Any attempt by a Bidder to influence the bid evaluation Process may result in the rejection of their offer.

- m. If in the judgement of the procuring entity the Bidder with beneficial ownership from countries sharing land border with India as per rule 13 of RTPP rules and Government of Rajasthan notification No. F.2(1)FD/G&T-SPFC/2017 dated 01.01.2021, 15.01.2021 and 30.03.2021 for participation in any public procurement in the state, who can only be allowed after prior registration with the competent authority has not complied with the requirement.
- n. Additional Performance Security. - (1) In addition to Performance Security as specified in Table-A, an Additional Performance Security shall also be taken from the successful bidder in case of unbalanced bid. The Additional Performance Security shall be equal to fifty percent of Unbalanced Bid Amount. The Additional Performance Security shall be deposited in lump sum by the successful bidder before execution of Agreement. The Additional Performance Security shall be deposited through e-Grass, Demand Draft, Banker's Cheque, Government Securities (Bank guarantee or e-BG).  
Explanation : (i) Unbalanced Bid means any bid below more than fifteen percent of Estimated Bid Value.  
(ii) Estimated Bid Value means value of subject matter of procurement mention in bidding documents by the Procuring Entity.  
(iii) Unbalanced Bid Amount means positive difference of eighty five percent of Estimated Bid Value minus Bid Amount Quoted by the bidder  
(Provided that in case of unbalanced bid relating to IT & e-Governance Project having cost of twenty crore rupees or more and approved by the State e-Governance Mission Team (SeMT), Department of Information Technology & Communication, Rajasthan as a High Tech Project, the Additional Performance Security shall not required to be taken.)  
(2) The Additional Performance Security shall be refunded to the contractor after satisfactory completion of the entire work. The Additional Performance Security shall be forfeited by the Procuring Entity when work is not completed within stipulated period by the contractor. Provision for 'Unbalanced Bid' and 'Additional Performance Security' shall be mentioned in the Bidding Documents by the Procuring Entity.

### **3.2 Procedure for finalization of bid :**

A tiered evaluation procedure will be adopted for evaluation of proposals, with the Prequalification and technical evaluation, will be completed before the commercial proposals are opened. Only the bids which qualify the qualification criteria mentioned in section of qualification criteria in the above will be taken up for detailed bid evaluation. The evaluation will include Proof of Concept (POC). Two-Bid system shall be followed for the bid evaluation. The first stage would be a prequalification and technical evaluation. Second stage would be a Commercial Evaluation. The details of evaluation have been explained below.

### **3.2.1 First stage - Pre-Qualification and Technical Bid Evaluation:**

#### **Pre-Qualification bid evaluation:**

- a. The first stage of evaluation would involve examination of the bid documents of the bidders against the Qualification Criteria and submitted bid security & Tender fees etc.
- b. All bidders clearing this stage will be evaluated on the criteria mentioned in the valuation framework. This is to ensure that the technical skill base, experience and financial capacity and other bidder attributes claimed therein are consistent with the needs of this project. These conditions have been listed down under the section Qualification Criteria & Bid Evaluation and Project scope and detail Technical Specification. Tender Inviting Authority may ask bidder(s) for additional information for project.
- c. For technical evaluation, the committee will visit to bidder's site and/or arrange discussions with their professional, technical faculty to verify claims made in bid documentation.
- d. During technical bid preparation, the bidder is required to strictly adhere to the technical specifications provided in chapter 8 of this document.

#### **Technical Bid Evaluation:**

Technical Evaluation Committee (TEC) formed by Tender Inviting Authority will evaluate technical bids. Bidders who have qualified as per the Section of Pre-Qualification Criterion of this RFP document shall be evaluated by the Technical Evaluation Committee assessing each bidder's ability to satisfy the requirements set forth in the document.

- The conditions/Specifications as per the Tender Schedule will not be relaxed in favour of any bidder.
- The Technical Bid documents duly signed by the Bidder, OEM, Authorization Partner and other firms who participate in the project and also submit brochures (if applicable).

The Technical Personnel deployed by the successful bidder should have minimum qualification of Engineering Graduate in Electronics/Computer/IT/Telecommunications/ Radio engineering branch and should have minimum 03 years of experience in Analog/Digital/VHF/trunking technology (DMR Tier II/DMR Tier III/APCO-25 phase II)".

#### **RF Site Survey:**

The Bidder will contact to department for Geo Co-Ordinates of static sites and should submit the RF Site Survey report of Bharatpur, Deeg & Kota with 90% coverage with desired DAQ level 4.0 & above and RSSI level of -80 dBm or better for DMR Tier III system.

RF Site Survey Report more than 90 % coverage in the Bharatpur, Deeg & Kota City area with DAQ level 4.0 & above and RSSI level of -80 dBm or better with minimum 03 no. of sites at Kota city, Minimum 03 sites at Bharatpur district & Minimum 02 sites at Deeg.

#### **Technical POC:**

The bidder shall physically demonstrate complete functionality of the proposed system by installing minimum 02 sites of DMR Tier III system at Bharatpur/Kota city.  
Or

The Bidder shall demonstrate the complete functionality of the proposed system including all features with intersite connectivity at any location installed by the bidder/OEM.

Or

If any bidder is unable to demonstrate the complete functionality at any installed location, then bidder will demonstrate complete functionality including all features at any location (By connecting the installed location with testing site using IP/RF connectivity) during POC.

And

Tier III System: The bidder will demonstrate POC at Bharatpur/Kota city with minimum 03 carrier repeater, 05 Hand Held radios and 05 Base/Mobile Radios with required accessories.

Tier II System: The bidder will demonstrate POC at Deeg with 01 repeater, 05 Hand Held radios and 05 Base/Mobile Radios with required accessories. Bidder should submit sample of VHF 20 W, VHF 02 W, Repeater, Low loss LDF cable 30 Mtr. and 60 Mtr. for repeater & base station, GP Antenna 3 db & 6 db gain, Vehicular Antenna 3 db gain, SMPS, Bluetooth device and Wired hand free with the qualifying bid.

The evaluation of POC will be broadly done by the Technical Evaluation Committee based on the demonstrated features in the areas but not limited to:

- System Requirements compliance.
- System Performance.
- Field tests on Area Coverage and Audio quality at different locations & different time zones.
- Radio sets performance.
- Network & Bandwidth Utilization.
- User Management and System Administration such as NMS.
- Complete Fail-over and Fall-back scenarios with redundancy analysis of all components such as links, switching, controller, router etc.
- Clarity on Scalability and future expansion with optimal costs (Cost-benefit analysis; Cost Savings scenarios).
- Highlight Cost saving methods on an on-going maintenance of the system; provide with overall cost saving simulations on OPEX costs such as power; bandwidth etc.
- Quality of Audio & other device features.
- Integrations with other systems
- Any other areas as necessary.

**Note:** The bidders who will qualify in technical evaluation will be considered for the next stage.

### **3.2.2 Second Stage – Financial/Commercial Bid:**

#### **(Financial/Commercial Bid Criteria: PRICES TO BE QUOTED ONLINE ONLY)**

The bidder has to give the **Commercial Bid** online as per the prescribed form **given at COMMERCIAL BID FORMAT** duly showing the actual cost, Installation, Training. Bidder shall Quote the price for each item (Includes its accessories if any) separately. No other documents should be enclosed along with Commercial Bid.

The Commercial bid of only those participants will be opened who have qualified in Technical Evaluation at their Client Site /Laboratory Tests/Field Trials/POC.

**After opening of the Commercial Bid, Bid will be awarded according to the Low Cost Based Selection (LCBS) method.**

- The Bidder is at liberty to indicate additional features and capabilities of the offered system.
- Quantity of tendered item may vary subject to the final availability of funds.
- The selected bidder should be in position to supply the Equipment within 06 weeks or earlier from the date of receipt of Purchase Order/Work Order with valid License copy etc.
- **Purchaser and Inspection Authority:** Director Police Telecommunications, Rajasthan, Jaipur
- **Inspection officer: any officer recommended by the** Director Police Telecommunications, Rajasthan, Jaipur
- The **Inspection officer** reserves the right to inspect the manufacturing unit where ever found necessary, while considering the tender.
- It is responsibility of the bidder to take back Bid Security after finalization of the tender. No interest will be paid at any cost on Bid Security Deposit.
- Successful Bidder will be required to pay security deposit as fixed by the Authority and enter in to agreement for the performance of the contract.
- Bidders convicted or involved in any criminal offence shall be considered ineligible for awarding contract.
- Any statutory increases or decreases due to an enactment (State or the Central Government) relating to Tax will be payable as per prevailing rules.

### **System Acceptance and Functionality Demonstration**

Upon the successful installation and commissioning of the proposed system, the winning bidder is required to conduct a comprehensive functionality demonstration to the department. This demonstration period will span 02 weeks and is crucial for achieving final acceptance of the system by the department.

#### **Demonstration Period:**

The bidder should allocate a period of 02 weeks immediately following the installation and commissioning of the system. During this timeframe, the bidder will showcase the complete functionality of the installed system to the department.

#### **Key Objectives:**

The primary goal of this functionality demonstration is to ensure that the system meets the department's requirements, specifications, and performance expectations. This period allows the department to thoroughly assess the system's capabilities, features, and effectiveness in real-world scenarios.



**Scope of Demonstration:**

The demonstration should encompass all aspects of the system's functionality, including but not limited to:

Seamless communication between different components and sites.

Intersite connectivity and communication testing.

Features and capabilities specified in the bidding document.

Reliability and stability of communication.

Performance during peak load and varying conditions.

**Final Acceptance:**

The successful completion of the 02 weeks functionality demonstration period plays a pivotal role in determining the final acceptance of the system by the department. The department will evaluate the system's performance, reliability, and adherence to specifications during this period.

**Documentation and Reporting:**

Throughout the demonstration period, the bidder should maintain detailed documentation of the system's performance, any issues encountered, and their resolutions. This documentation will be an essential reference during the final evaluation for system acceptance.

**Collaboration with Department:**

During the demonstration period, the bidder is encouraged to work closely with the department's representatives. This collaboration can facilitate swift issue resolution and ensure that any queries or concerns are addressed promptly.

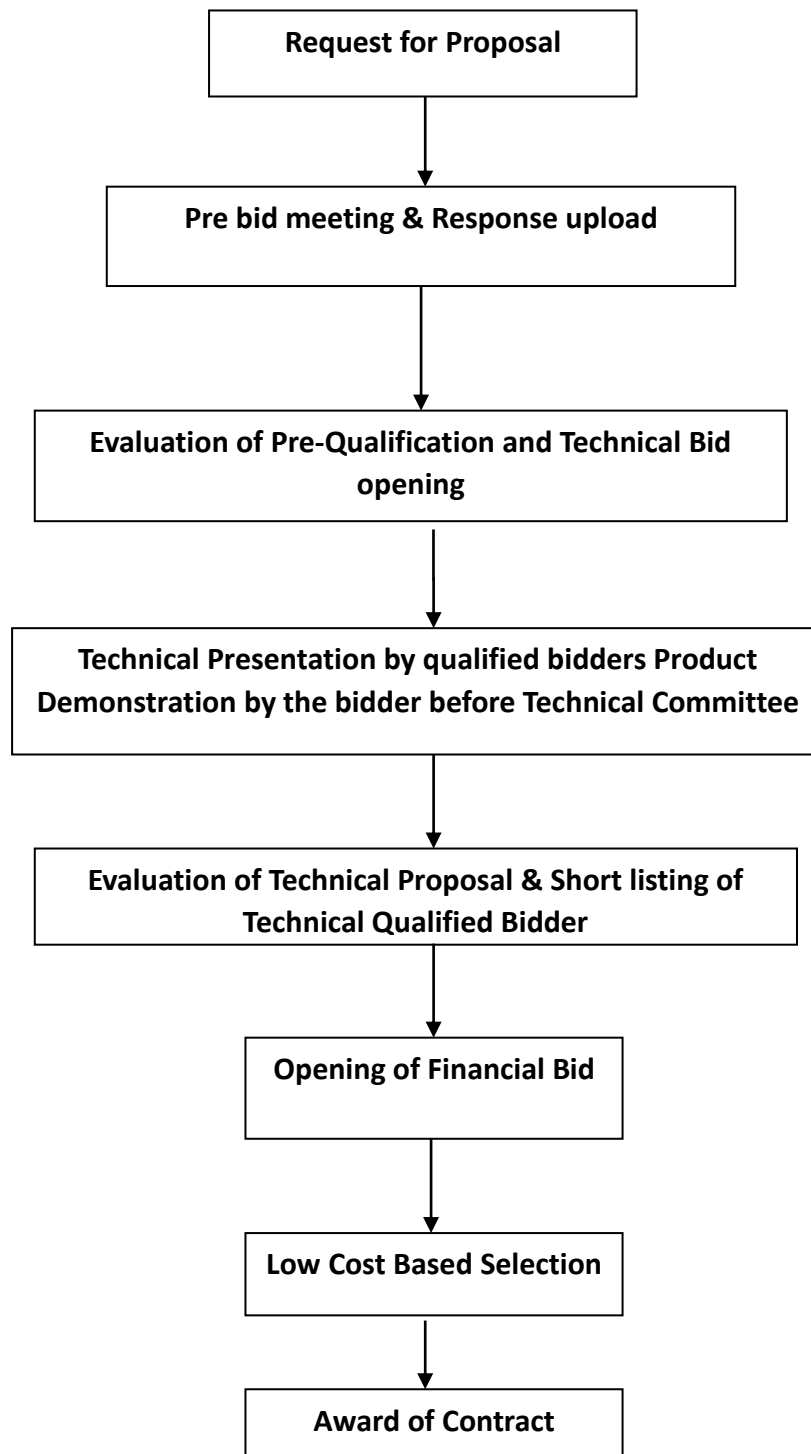
**Outcome and Next Steps:**

Upon the successful completion of the 02 weeks functionality demonstration, the department will evaluate the system's performance and overall suitability. If the system meets all specified criteria and the department's expectations, final acceptance will be granted.

It's crucial for the bidder to approach this functionality demonstration period with diligence and professionalism. The successful demonstration not only leads to system acceptance but also contributes to building a strong and positive relationship between the bidder and the department.

By adhering to these guidelines and conducting a comprehensive and successful functionality demonstration, the bidder can establish the credibility and effectiveness of the proposed system, further strengthening their position as a reliable partner in meeting the department's communication needs.

### 3.3 Tendering Processing Flow:



### **3.4 Right to Accept or Reject the bid:**

Tender Inviting Authority reserves the right to accept or reject any Bid. Tender Inviting Authority shall be under no obligation to accept the lowest or any other offer received in response to this RFP and have right to annul the tendering process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the grounds for Tender Inviting Authority action. The essence is that only such bid that in the opinion of Tender Inviting Authority is most suitable for Rajasthan Police Telecommunication Organization shall be selected. Resorting to unethical practices may lead to the conclusion that bid is not suitable for the Rajasthan Police Telecommunication Organization.

### **3.5 Notification of Award :**

- a. Prior to the expiration of the period of bid validity, Tender Inviting Authority will notify the successful bidder in writing or by fax or email, to be confirmed in writing by letter, that its bid has been accepted.
- b. The notification of award (LOI) will constitute the formation of the contract. Upon the successful Bidder's furnishing of Performance Security, Tender Inviting Authority will notify each unsuccessful bidder.

### **3.6 Signing of the contract :**

Tender Inviting Authority will notify the successful bidder that its bid has been accepted, Tender Inviting Authority shall enter into contract with the successful bidder. Terms and Conditions specified in the RFP document along with technical solution, clarifications, corrigendum, and technical presentation shall become the part and parcel of the contract document.

## CHAPTER-4

### SCOPE OF WORK, DELIVERABLES & TIMELINES

#### (WORK-STREAM 1)

#### 4.1 Scope of Work:

Rajasthan Police Telecommunication Organization is planning to install DMR Tier III system at Kota city & Bharatpur district and Tier II at district Deeg. The scope of work includes Design, Supply, Installation, Integration, Testing and Commissioning of complete 400 MHZ DMR Tier III system at Kota city & Bharatpur district and VHF DMR Tier II system at district Deeg. The system will cover all the higher offices, Police Stations, Outpost, Traffic units of Bharatpur, Deeg district & Kota city. Necessary Radio Sets (Static, Mobile & Hand Held) will be provided at all these locations. All these locations shall be networked by providing appropriate high-speed connectivity for data transfer and sharing of information amongst various stakeholders.

#### 4.2 Services:

- Site plan and equipment layout plan for the DMR Tier III & DMR Tier II System shall be prepared by successful bidder. The layout plan shall show interconnecting cable routes between various equipment's at the Main control room and the Repeater sites including third party equipment.
- The Main control and Repeater stations including all Third-party equipment shall be installed by successful bidder at sites. Interconnections of Radio equipment to power supply, antenna system and feeder cable, including interconnecting cable connectors etc shall be the responsibility of the successful bidder. Installation shall be as standard procedure approved by Purchaser.
- The successful bidder will be responsible for providing a complete integrated framework with existing Abhay Command Control centre of Bharatpur, Deeg & Kota city. This will include sending of Incident reporting (Selected fields in consultation with department) by the dispatch console of Abhay Command Centre to the Static/Mobile/Hand held Radio installed in Bharatpur, Deeg & Kota city. Any API required for the purpose of integration will be provided by department/System Integrator of ACCC Bharatpur, Deeg & Kota city. Dispatcher PC of DMR system as well as dispatcher of Abhay Command centre shall be able to call, or send SMS to any Static/Mobile/Handheld radio of Bharatpur, Deeg & Kota city. The bidder shall visit the ACCC and consult with the agency to fulfil the requirements. The payment terms & conditions is as per Chapter 10 (10.1)
- The successful bidder shall test each electronic equipment after installation and prepare a test report. This shall be compared with the factory test reports to ensure that there is no deterioration in the equipment parameters during storage, transportation and installation.

- Installation and testing procedures for individual equipment's and for the complete DMR Tier II & Tier III System shall be provided by the successful bidder. These test procedures should include test setup and measuring instruments required for test parameters.
- The performance of individual equipment and complete system shall be tested to ensure that individual equipment and complete system meets the technical specifications and other operational and technical requirements of tender.
- Complete documentation of all the measurements conducted during installation period shall be submitted by the successful bidder for future reference. This document shall include the measurements conducted on individual equipment's on the Site. This documentation shall be supplied by successful bidder to Purchaser.
- The bidder shall project the number of Microwave frequencies and Repeater frequencies required for the completion of project with the Architecture diagram.
- All the repeater sites of DMR TIER – III should be connected to Control site and Switching Equipment through Microwave Link. Repeater and control/switching equipment linked by suitable capacity Microwave link along with required hardware (e.g. mux/demux) and having hardware redundancy i.e. 1+1 hot standby configuration. The system should work on Microwave link as well as through internet lease line, provided by the bidder at feasible repeater sites in consultation with department. The lease line plan will be finalized in consultation with the department. Wherever ILL connection is not feasible, the bidder will provide ILL to the nearest point of this site and will provide extra licence band microwave link of 1 GBPS capacity for data connectivity between these two points.
- The technical problems faced during installation, testing and commissioning period and their solutions shall be submitted by successful bidder at the time of handing over the completed works to Department. This documentation shall be supplied by successful bidder to Purchaser.
- The successful bidder shall be responsible for providing the following project components:
  - Engineering and System design,
  - Site and equipment layout plan,
  - RF Site Survey and Coverage Report,
  - Project and Quality Management,
  - Furnishing and installing system equipment and ancillary facilities,
  - Software installation and programming,
  - Interoperability subsystems,
  - Training and Course material,
  - Testing and Commissioning of Project,
  - Testing Set up for DMR TIER – III System - For coverage and DAQ (Delivered Audio Quality) with RSSI level testing for mobile radios and Handheld sets,
  - Migration and Stabilization of new DMR System,
  - System Go-Live,

- Warranty and Maintenance support for the Project as per Tender.
- The bidders shall employ a suitable coverage prediction model using appropriate terrain and land cover data for the environment as part of RF Site survey and shall include a detailed description of the propagation models used and the assumptions made in preparation of the maps.
- The Network Management System (NMS) shall detect and report all failures or degraded conditions in real time and failures should invoke the activation of a failure mode and shall not bring the system down completely.
- The successful bidder shall propose network security of the proposed Trunking system. The bidder shall design the latest required firewalls, antivirus etc. for network security of the system. In addition to this the bidder will quote unified threat management (UTM) system for network security of the project in optional items.
- All the core switching centres & sites shall also be interconnected with suitable microwave link and leased lines in redundant manner to have seamless roaming between sites.

#### **4.3 Frequency planning:**

- 400 MHz Band actual frequency spots for DMR Tier III & 136-174 MHz spots for DMR Tier II shall be intimated by the Purchaser to the Successful bidder after award of Contract.
- The supplier shall ensure minimum use of Microwave frequency by reusing the frequency of other sites having no interference.

#### **4.4 Site Preparation:**

- The successful bidder shall carry out the site preparation before the installation of DMR System. Site preparation shall include the site inspection, submission of site drawings for the Authority approval, required work i.e., cabling, wiring, earthing for equipment, Internet Lease line connection, lightening arrestors with separate earthing, aviation lamp, UPS, ACs, necessary electrification, furniture and infrastructure etc. with respect to equipment installation, equipment rack. For details refer chapter-8.
- The proposed DMR Tier III system shall include several modes of degraded operation or failure modes. The system shall be capable of automatic activation of failure modes in the event of failure.
- Antenna system shall be installed and aligned to receive the optimum signal level by the successful bidder. Similarly, connecting feeder shall be connected to antenna and Radio equipment as per standard procedures.
- The bidder will submit undertaking from the manufacturer (OEM) that supplies of necessary maintenance equipment and spare parts equipment will be made available for all items/equipment and the complete system including third party equipment for a period of 10 (ten) years on a continuing basis.

- Use of contract document & information: The supplier shall not, without the purchaser's prior written consent disclose the contract or any provision thereof, or any specifications plan, drawing, pattern, sample or information by or on behalf of the purchaser, to any person other than a person employed by the supplier in the execution of the contract.
- The selected bidder shall supply the latest release available worldwide for UHF 400 MHz DMR Tier III/VHF DMR TIER - II system and Wireless Radio (Static/Mobile/Hand Held) including third party equipment to the purchaser and inked signed certificate in this regard shall be attached from OEM.

#### **4.5 Responsibility of Completion & Software Optimization:**

- The System software and user interactive windows shall be configured after carrying out thorough study of the operations in Bharatpur, Deeg & Kota city. Thereafter these may be further optimized after installation based on the feedback from the actual users over a period of one year. The bidder will upgrade the firmware for the supplied hardware free of cost for the entire life of the hardware.

#### **4.6 Required communication RF Coverage:**

- The proposed DMR Tier III system must provide RF coverage of minimum 90 % throughout the Bharatpur district/Kota city for Static & Hand held radios as well as Mobile radios with required number of sites (site locations to be surveyed and selected by the bidder).
- The proposed DMR Tier II system must provide RF coverage of minimum 90 % throughout the Deeg district area for Static & Mobile radios with required number of sites (site locations to be surveyed and selected by the bidder).

#### **General Term and Conditions:**

- The bidder shall gather information for complete system design and detailed Engineering to meet the overall system availability objectives. Vendor shall visit Police Locations, with prior permission, to acquaint themselves with the exact site requirement & site conditions and quote as per their site survey report.
- Details of Police Stations, Out Post and Repeater Stations & other sites of districts are attached herewith.
- Successful bidder shall be solo responsible to install & commission DMR TIER III Radio communication in Kota city and Bharatpur district & DMR Tier II communication system in Deeg district.
- Installation of Radios, Repeaters and Other quoted items at all Static and Mobile sites (as per list Provided by the district incharge).
- Installation of A.C., UPS and chemical earthing at repeater sites/Control Room/District communication office.

- Installation of Desktop Computers and Printer at District Control Rooms of Kota city, Deeg & Bharatpur District and other sites.
  - Programming of Radio Sets, Repeaters and other Equipment.
  - Civil/Electric work at Repeater/Control stations/District Communication offices of Kota city, Deeg & Bharatpur District as per requirement (in consultation with district incharge).
  - Renovation of district communication offices of Kota city, Deeg & Bharatpur District and repeaters in consultation with district incharges. Renovation work includes flooring, paint, aluminium/glass doors & windows, partition, curtains etc.
  - Installation of additional items (if required) quoted by bidder in BOQ.
  - Installation of all types of proposed softwares.
- ❖ GIS software supplied by firm shall be able to track all Vehicles in District Bharatpur, Deeg and Kota city through Radio Sets.
  - ❖ The successful bidder will be responsible for providing a complete integrated framework with existing Abhay Command Control centres of concerned districts. This will include sending of Incident reporting (Selected fields in consultation with department) by the dispatch console of Abhay Command Centre to the Mobile Radio installed in the vehicles of concerned district. Any API required for the purpose of integration will be provided by the department/system integrator of Abhay Command centre. Dispatcher PC of DMR System as well as dispatcher of Abhay Command centre shall be able to call, or send SMS to any Mobile/Handheld radio of the concerned district. The bidder shall visit the ACCC and consult with the agency to fulfil the requirements.
  - ❖ With regard to integration with ACCC, API shall be provided by department. The firm will quote charges for integration in BOQ. If department fails to provide API to the successful bidder, the quoted amount for integration purpose by the bidder shall be deducted from the final payment.
  - ❖ If department provides API for integration during 01 year from commissioning, the firm shall be bound to complete the integration task within 03 months at the rates quoted in the BOQ for the purpose and if the firm fails to complete the task, the performance security shall be forfeited.
  - ❖ The proposed DMR Tier III system must provide RF coverage of minimum 90 % throughout the Bharatpur district/Kota city for Static & Hand held radios as well as Mobile radios with required number of sites (site locations to be surveyed and selected by the bidder).
  - ❖ The proposed DMR Tier II system must provide RF coverage of minimum 90 % throughout the Deeg district area for Static & Mobile radios with required number of sites (site locations to be surveyed and selected by the bidder).
  - ❖ Bidder will provide coverage map specifying the signal strength. The commissioning committee constituted by the department will verify the coverage.

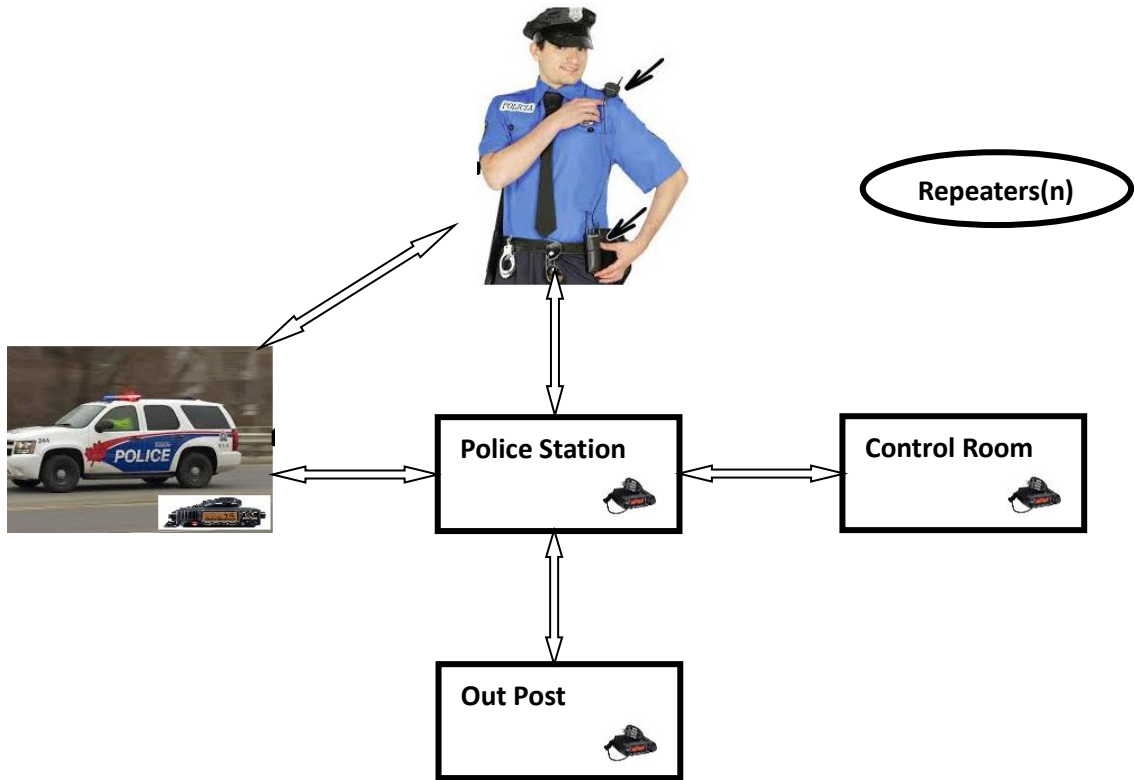


- ❖ The Self supported Towers (as per annexure) shall be installed by the bidder. If required, additional tower (Minimum 30 meter height), shall be installed by the successful bidder for required communication coverage. The place of tower installation shall be decided in consultation with the district Police Telecommunication incharge. Self supported 09 Meter mast to be installed at each Police station (Except the Police stations where self-supported towers of height 30 meter or more are installed). The design & the specification of the self-supported towers/Mast to be installed, shall be as per specifications mentioned in the bid.
- ❖ IF bidder finds that additional Hardware's (Self Supported Tower, Mast, Repeater, Link, Microwave Radio with accessories, Radio Interface unit with accessories or other articles etc.), and Software's are required other than mentioned in BOQ to furnish successful communication in districts, shall submit quantity of items (District wise), their specifications in Technical Bid and financial proposal can be submitted as Additional Items in BOQ.
- ❖ One standby repeater in Deeg shall be provided by the bidder.
- ❖ The bidder shall provide One Online UPS 2KVA, GP Antenna 6 db gain & 60 meter ½" LDF Low Loss cable at each repeater station.
- ❖ While Installation if any extra equipment/accessories/or any other items required must be provided by the bidder without any extra charges, if not quoted in their bid.
- ❖ The proposed DMR Radio Communication equipments shall be based on state-of-art ETSI DMR Tier-II/III TDMA Trunking technology.
- ❖ The radios should be digital for clear communication, lightweight, capable to operate in UHF 400 – MHz Frequency band for DMR Tier III and VHF 136-174 MHz for DMR Tier II.
- ❖ The bidder shall supply, install and configure DMR communication equipment of reputed make and of latest production with all necessary accessories and components necessary to meet the requirements. Certificate stating the above shall be submitted from the OEM.
- ❖ The DMR communication equipment shall communicate among hand held radios, Base station radios, mobile radios and repeater stations installed at various locations.
- ❖ Remote Monitoring facility for digital hand held radios, Base stations and mobile stations shall be available.
- ❖ The equipment should be available with switchable RF power levels to meet communication needs, such as improved coverage and conservation of battery for long life.
- ❖ The Digital System should be capable of offering both Data and Voice Services.
- ❖ Data Services like Location/GPS and Short Messaging should be possible with the Hand Held, Mobile and fixed radio systems.
- ❖ All Digital Hand Held/Mobile radios shall be equipped with GPS module/feature.

**4.7 Coverage and field test:**

**For Kota city:**

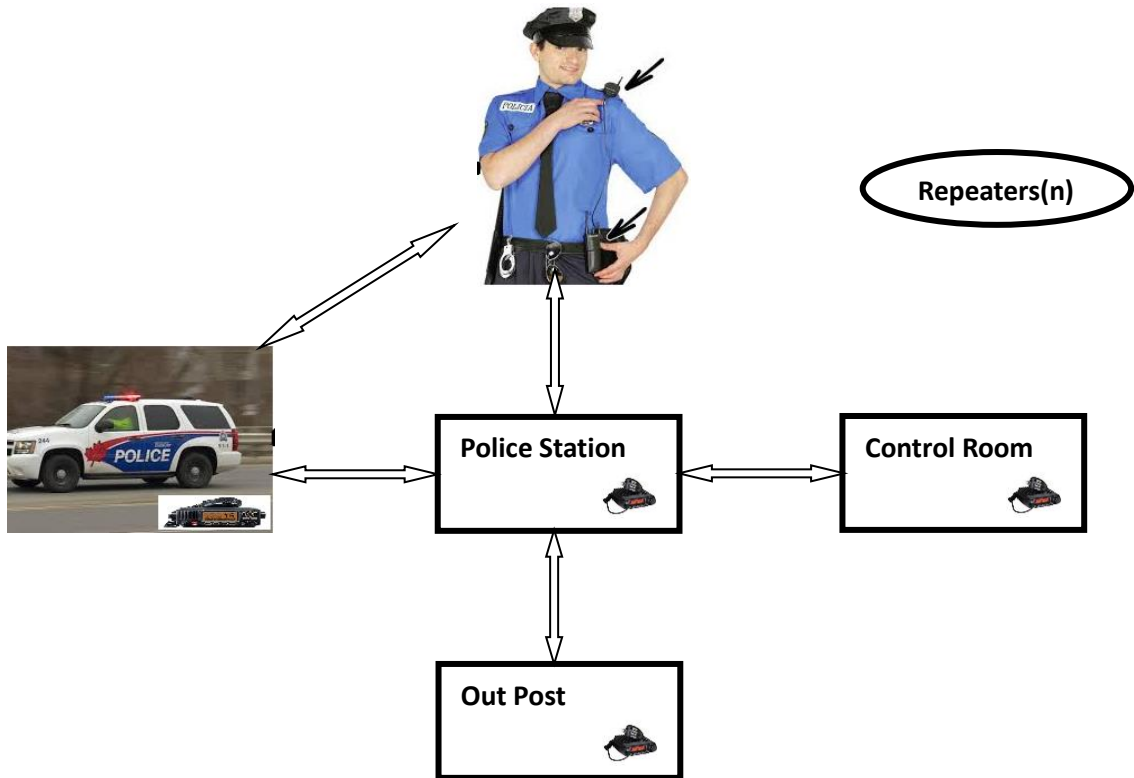
Each police station of Kota city shall be connected to the District Control Room, concern Out Post, Concern Mobile vehicle and concerned hand held sets with single Digital Radio Set on RF.



- The proposed system must provide radio coverage 90% throughout the Kota city for Hand Held radios as well as mobile radios with required Base stations.
- The RF coverage is defined as the digital Bit Error Rate (BER) that provides a minimum Delivered Audio Quality (DAQ) – 4.0 with RSSI level -80dBm or better audio signal for both outbound (Talk out) and inbound (Talk back) communications with more than 95% reliability from a location (to be tested at different time periods).
- The DAQ shall be defined as follows:
  - DAQ 1: Unusable speech present but not understandable.
  - DAQ 2: Speech understandable with considerable effort. Requires frequent repetition due to noise or distortion.
  - DAQ 3: Speech understandable with slight effort. Requires occasional repetition due to noise or distortion.
  - DAQ 3.5: Speech understandable without repetition. Some noise or distortion present.
  - DAQ 4: Speech easily understandable. Little noise or distortion.
  - DAQ 4.5: Speech easily understandable. Rare noise or distortion.
  - DAQ 5: Perfect. No distortion or noise discernible.
- The audio quality shall be tested by the joint team of successful bidder and Purchaser at different places in Kota city. DAQ-4.0 with RSSI level -80dBm or better audio signal for both outbound and inbound should be ensured by the successful bidder.
- The signal/audio quality to be tested inside the building, outside on the extreme area of the coverage vital locations etc. RSSI level -80 dBm or above on road and -90 dBm at inside the building (single wall coverage)
- Field test shall be carried out after completion of installation and commissioning before the ATP in order to estimate coverage and DAQ levels in different locations.
- After full completion of all base station installations for checking of handing over, interference, compatibility with existing network and other features.
- After completion of microwave networking in order to estimate the required data throughput of required capacity from each base station to the control centre irrespective of the number of hops in between, automatic changeover in case of cut-off of a link.
- The signal strength in various locations in Kota city shall be measured while testing audio quality.
- The equipment/setup for measuring the DAQ and RSSI level shall be provided by the bidder for testing. The test equipment to be calibrated by government approved lab NABL/ILAC.
- For proper RF coverage in indoor area of vital location, bidder should provide installation of required devices for coverage.

**For Bharatpur District (DMR Tier III System):**

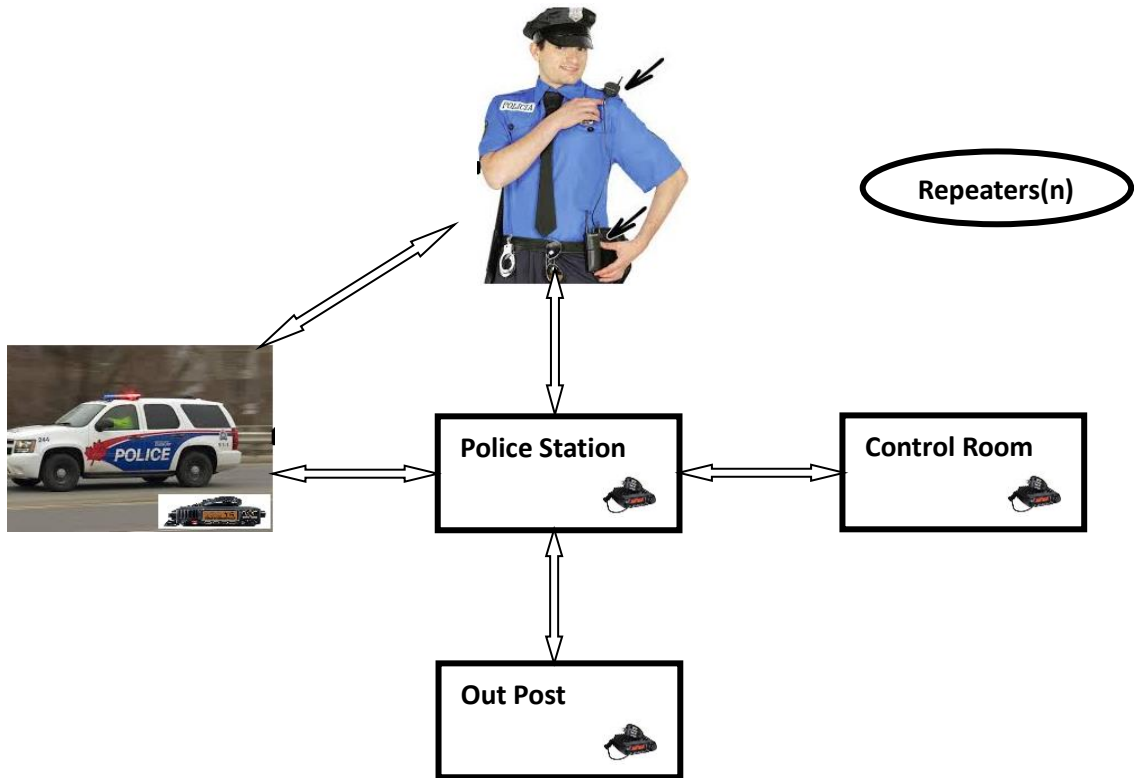
Each police station of Bharatpur District shall be connected to the District Control Room, concern Out Post, Concern Mobile vehicle and concerned hand held radios with single Digital Radio Set on RF.



- The proposed system must provide radio coverage 90% throughout the Bharatpur districts for Hand Held radios as well as mobile radios with required Base stations.
- The RF coverage is defined as the digital Bit Error Rate(BER) that provides a minimum Delivered Audio Quality (DAQ) – 4.0 with RSSI level -80dBm or better audio signal for both outbound (Talk out) and inbound(Talk back) communications with more than 95% reliability from a location (to be tested at different time periods).
- The DAQ shall be defined as follows:
  - DAQ 1: Unusable speech present but not understandable.
  - DAQ 2: Speech understandable with considerable effort. Requires frequent repetition due to noise or distortion.
  - DAQ 3: Speech understandable with slight effort. Requires occasional repetition due to noise or distortion.
  - DAQ 3.5: Speech understandable without repetition. Some noise or distortion present.
  - DAQ 4: Speech easily understandable. Little noise or distortion.
  - DAQ 4.5: Speech easily understandable. Rare noise or distortion.
  - DAQ 5: Perfect. No distortion or noise discernible.
- The audio quality shall be tested by the joint team of successful bidder and Purchaser at different places in Bharatpur district. DAQ-4.0 with RSSI level -80dBm or better audio signal for both outbound and inbound should be ensured by the successful bidder.
- The signal/audio quality to be tested inside the building, outside on the extreme area of the coverage vital locations etc. RSSI level -80 dBm or above on road and -90 dBm at inside the building (single wall coverage)
- Field test shall be carried out after completion of installation and commissioning before the ATP in order to estimate coverage and DAQ levels in different locations.
- After full completion of all base station installations for checking of handing over, interference, compatibility with existing network and other features.
- After completion of microwave networking in order to estimate the required data throughput of required capacity from each base station to the control centre irrespective of the number of hops in between, automatic changeover in case of cut-off of a link.
- The signal strength in various locations in Bharatpur district shall be measured while testing audio quality.
- The equipment/setup for measuring the DAQ and RSSI level shall be provided by the bidder for testing. The test equipment to be calibrated by government approved lab NABL/ILAC.
- For proper RF coverage in indoor area of vital location, bidder should provide installation of required devices for coverage.

**For Deeg District (DMR Tier II System):**

Each police station of district Deeg shall be connected to the District Control Room, concern Out Post, Concern Mobile vehicle with single Digital Radio Set on RF.



Portable handheld sets of the concerned police stations of District Deeg should be connected with Police Station and the concerned vehicle (Within appropriate range of the hand-held sets) seamlessly.

#### **4.8 Earthing:**

- Earth shall be provided at UPS rooms. Main Earth shall be terminated by the successful bidder with copper strip.
- The Clean Earthing arrangements for Telecom Equipment's must be protected using a mesh of copper "earth" strips of appropriate cross-sectional dimensions, forming a local Clean Earth Bus.
- An earthing system (Main earth and clean earth) shall be designed to assure personnel safety and protection of installation against damage. It shall also serve as a common voltage reference and to contribute to the mitigation of disturbances.
- The earthing system shall generally meet the requirement of IEEE 1100, NFPA 780, IEC 1024.
- The earth resistance at any point on the clean earth shall be below 0.5 Ohm, and that for the Main earth shall not exceed 2.0 Ohm at any location and under any soil and/or climatic condition.
- All metal work and metallic items (including chassis) shall be earthed to the Main Earth to ensure the safety of personnel and Equipment.
- The Earthing connection shall be inspected periodically at intervals frequent enough to ensure that the earth connection meets all the requirements.

#### **4.9 Acceptance Test:**

Successful bidder shall provide a test plan along with proposed test setup to ensure compliance with the specifications of DMR Tier III & DMR Tier II System including Radios, Switching Equipment, Network Management System, Repeater site equipment, Microwave Inter site link equipment, Internet lease line and dispatch console etc.

#### **4.10 Installation/supervision and commissioning:**

- Successful bidder shall provide his supervisory personnel at the premises of the purchaser, to oversee the installation and commissioning of equipment's by the purchaser under this supply, to perform commissioning tests at the purchaser's sites and demonstrate full compliance of equipment's/systems supplied.
- Successful bidder shall replace or carry out repairs of equipment supplied during the Warranty period.
- Successful bidder shall maintain stock of essential/critical modules, accessories and spares which will be useful during warranty period. A list of such spares being maintained under the warranty will be furnished by the bidder. Faulty units will be returned to the supplier for replacement.
- The bidder shall quote list of required spare parts (in form 13) along with price separately for AMC period.

#### 4.11 Project Documentation:

- The successful bidder will provide documentation which would cover various aspects of the project. This documentation should be submitted as the project undergoes various stages of implementation. Indicative list of documents includes:
- Project Commencement Documentation: Project Plan in giving out micro level activities with milestones & deadlines. It should ideally include documentation on all aspects. Supply 2 Nos. of Hard and soft copies. This will include the following site wise:
  - System interface, electrical and antenna cabling drawings.
  - Systems inter connection and block diagram.
  - Equipment maintenance manuals.
  - As built drawings both PDF and Auto CAD formats.
  - Complete system design and solution document including networking designing, various MEP layout drawings, solution architecture including integration's, area coverage maps with signal strength indication for all sites covering district Bharatpur, Deeg and Kota city and other related documents/drawings.
- Project Implementation documentation: A document comprising of the technical problems faced during installation of Hardware and development of software and their solutions shall be submitted by the Supplier at the time of handing over the project after completion to the Tender Inviting Authority, Supply 2 Nos. of Hard and soft copies.
- Training Material: Training Material will include the presentations used for training and also the required relevant documents for the topics being covered. Supply 2 Nos. of Hard and soft copies.
- User Manuals: User manual will include various details of the work done by the bidder like documents that were digitized, scale of the documents, format of the documents etc. All the documentation should be in English. The following quantities of user operational and technical manuals are to be supplied by the successful bidder.
  - a. User operational manuals in Hard copy:
    - Mobile Radio - 1 for each unit
    - Portable Radio - 1 for each unit
    - Dispatch Console - 1 for each unit
  - b. Technical Service/Maintenance Manuals in Hard copy and soft copy for
    - Mobile Radio –02 Nos
    - Portable Radio – 02 Nos
    - Console Equipment - 02 Nos
    - Repeater Equipment - 02 Nos
    - Base Station Controller - 02 Nos
    - System Manager - 02 Nos
    - Switching Equipment - 02 Nos
    - Inter site link for sites - 02 Nos.
    - Other subsystems if any - 02 Nos



## CHAPTER-5 CAPACITY BUILDING (TRAINING) AND CHANGE MANAGEMENT

Capacity Building is a highly critical component of Police Telecommunication. The objective of Police Telecommunication Capacity Building (CB) initiatives is to empower the direct users and other stakeholders of Police Telecommunication to optimally use DMR Tier III & DMR tier II communication and to enhance outcomes in core police functions and also to ensure smooth functioning of communication in district Bharatpur, Deeg and Kota city.

The success of DMR Tier III & Tier II communication, both in short term as well as long term has a dependency on the level of penetration it can accomplish. Drawing upon the diverse challenges expected for the implementation of this, specifically the workforce challenges, it is apparent that capacity building is the need of the hour to further ensure DMR communication as a successful program.

### 5.1 Training:

The supplier shall train Police Communications personnel for the maintenance of the system. Training should be in two parts:

- **Expert level Training:-** In first part Rajasthan Police will depute five officers for training at the works of the manufacturers factory premises for the minimum period of 10 days for Operation, Maintenance & Troubleshooting of entire project (Separately for DMR Tier III & DMR Tier II systems). All the expenses including fare, lodging and boarding shall be borne by the supplier.
  
- **User level Training:-** In second part the supplier shall provide minimum 02 weeks training to the 30 personnel of Rajasthan Police (10 for DMR tier III Kota city, 10 for DMR tier III Bharatpur district & 10 for DMR Tier II for Deeg district) at the premises of Purchaser at no extra cost. Both training part (Expert and User) should cover the following aspects:
  - Description of all functional assemblies of the system, including controls, indicators and monitoring system.
  - Line up procedures for the system and adjustment of operating parameters and other operation and maintenance procedures.
  - Practical replacement procedures/practices for major assemblies including RF units.
  - Repairs of the system, in addition to the training should be provided by the supplier.
  - The system architecture different features of Main switch and repeater sites.
  - Functional/Maintenance training on Dispatcher Control , Portable/Mobile Radio, Microwave links and Antennas
  - The bidder shall provide complete details on Training programs to be offered (both at OEM and purchasers premises) including:
    - ✓ Material to be covered
    - ✓ Number of hours of training per operator/Technician for each specific course
    - ✓ Supporting Documentation to be provided
    - ✓ Hands on Practice of RF equipment replacement and its alignment.

The Engineers and Technicians should be taught the functionality of all supplied equipment in the system including Third party Equipment to identify and rectify common hardware/software failures. Trainings will be provided to users for all upgradations as and when implemented.

## **5.2 Change Management:**

As part of the DMR project, police functioning in Bharatpur, Deeg & Kota Police would include implementing new technology and reengineering business processes. At the current stage of DMR system the success of this project is not merely dependent on hardware and software implementation but equally on how people would adapt to this change and support it.

## **5.3 Challenge of Change Management:**

A natural reaction to any form of big change is resistance. If the change and corresponding resistance is not managed properly, all the efforts put in to bring about that change can be wasted. The success of any project depends on the acceptance of the change by its resources, the end-users. This transpires even more for a government organization, particularly in the Indian context. Organizational Change Management is a structured approach to resistance and to transitioning individuals, teams, and organizations from a current state to a desired future state. It is characterized by a shift in behaviours and attitudes in people to adopt and embrace the future state.

The Change Management Programs would provide a strong platform that would sustain the entire transition incessantly. Hence, the objectives of the undertaking:

- a) To create acceptance of the main objectives of the project
- b) To create willingness, build up trust, and decrease resistance amongst the resources towards the changes resulting from the implementation of New Project
- c) To create ability amongst the resources who will be the key end-users of the Project
- d) To ensure successful implementation of DMR project and embed sustainability of the project

## **5.4 Post Implementation Services:**

Bidder Shall provide 03 years of comprehensive warranty period for complete DMR tier III & DMR Tier II system and 05 years for self-supported Towers/Masts. For any equipment if OEM provides warranty of more than 03 years, it will be transferred to user. As part of the post implementation services, the bidder shall provide support for the software, hardware, and other infrastructure for 10 years. Bidder shall quote rates (year wise) in optional items to provide seven years of comprehensive and non-comprehensive AMC separately after completion of 3 years warranty for all the products/software supplied that includes:

### **Operation & Maintenance Services**

- i. Operations and maintenance services for the project and related infrastructure Supplied and commissioned by the bidder at Bharatpur, Deeg District & Kota City.
- ii. Software / hardware maintenance and support services.

As part of the warranty services bidder shall provide:

- (1) Bidder shall provide the comprehensive manufacturer's warranty in respect of proper design, quality and workmanship of all hardware, equipment, accessories etc. covered by the RFP. Bidder must warrant all hardware, equipment, accessories, spare parts, and software etc. procured and implemented as per this RFP against any manufacturing defects during the warranty period.

- (2) Bidder shall provide the performance warranty in respect of performance of the installed hardware and software to meet the performance requirements and service levels in the RFP.
- (3) Bidder is responsible for sizing and procuring the necessary hardware and software licenses as per the performance requirements provided in the RFP. During the warranty period bidder shall replace or augment or procure higher-level new equipment or additional licenses at no additional cost to the Rajasthan Police Communication Organization in case the procured hardware or software is not adequate to meet the service levels.
- (4) Mean Time between Failures (MTBF)-If during contract period, any equipment has hardware failure on Three or more occasions in a period of less than One Month or six times in a period of less than Three months, it shall be replaced by equivalent or higher- level new equipment by the bidder at no cost to State. However, if the new equipment supplied is priced lower than the price at which the original item was supplied, the differential cost should be refunded to Tender Inviting Authority. For any delay in making available the replacement and repaired equipment's for inspection, delivery of equipment's or for commissioning of the systems or for acceptance tests/ checks on per site basis, Tender Inviting Authority reserve the right to charge a penalty.
- (5) During the warranty period bidder shall maintain the systems and repair/replace at the installed site, at no charge to Tender Inviting Authority, all defective components that are brought to the bidder's notice.
- (6) The bidder may repair the equipment at authorized Service Centre.
- (7) Warranty should not become void, if Rajasthan Police Communication Organization buys, any other supplemental hardware from a third party and installs it within these machines under intimation to the bidder. However, the warranty will not apply to such supplemental hardware items installed.
- (8) The bidder shall carryout Preventive Maintenance (PM), including all hardware and software, if any, and should maintain proper records at each site for such PM. Failure to carry out such PM will be a breach of warranty and the warranty period will be extended by the period of delay in PM.
- (9) Bidder shall monitor warranties to check adherence to preventive and repair maintenance terms and conditions
- (10) The bidder shall ensure that the warranty complies with the agreed Technical Standards, Security Requirements, Operating Procedures and Recovery Procedures.
- (11) Bidder shall have to stock and provide adequate onsite and offsite spare parts and spare component to ensure that the uptime commitment as per SLA is met.
- (12) Any component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA).

**CHAPTER-6**  
**PROJECT IMPLEMENTATION TIME**

Following activities of the project should have to be completed according to the following timeline.

T= Date of issue of Purchase order/work order to the Successful bidder

Description		Time line in Weeks
T1	Detailed Project Planned survey for required coverage and Site Preparation	T+2
T2	Supply of Communication Equipment after receipt of valid License	T1+6
T3	Solution Implementation like Installation of hardware, software, networking devices, other related components and its integration etc.	T2+6
T4	Go-Live (Demonstration Period)	T3+2

CHAPTER-7  
**SERVICE LEVEL AGREEMENT (SLA)**

**7.1 Service Level Agreement Objective :**

The purpose of Service Level Agreement (SLA) is to clearly define the levels of service to be provided by the successful bidder to the department for the duration of this contract. SLA defines the terms of the successful bidders' responsibilities in ensuring the timely delivery of the deliverables and the correctness of the same based on the agreed Performance Indicators as detailed in the Agreement. This section defines various Service Level Indicators which will be considered by the department in the Service Level with successful bidder. The successful bidder has to comply with all Service Level Agreements (SLAs) defined below to ensure adherence to project timelines, quality and availability of services.

**7.2 SLA Definition, Measurement & Monitoring :**

***(a) Standard Guideline for SLAs:***

Rajasthan Police Telecommunications Organisation would report the bug/problem to the bidder through telephone/email/fax/letter/verbally. Resolution time is the time interval between the instant at which the problem is reported to bidder through telephone/email/fax/letter/verbally and the instant at which the problem is resolved by the bidder.

***(b) Definitions:***

- i. "Scheduled Maintenance Time" shall mean the time that the System is not in service due to a scheduled activity as defined in this SLA. The Scheduled maintenance time would not be during 11X6 (9AM to 8PM) Time frame. Further, scheduled maintenance time is planned downtime with the prior permission of DEPARTMENT.
- ii. "Scheduled operation time" means the scheduled operating hours of The System for the month. All scheduled maintenance time on the System would be deducted from the total operation time for the month to Give the scheduled operation time. The total operation time for the systems and applications of the project will be 24X7X365.
- iii. "System or Application down time" means accumulated time during which The System is totally inoperable within the Scheduled Operation Time. But outside the scheduled maintenance time and measured from the Time DEPARTMENT and/or its employees logs call with the Bidder (SI) team of the Failure or the failure is known to the SI from the availability measurement Tools to the time when the System is returned to proper operation.

- iv. "Availability" means the time for which the services and facilities are Available for conducting operations on the DEPARTMENT systems including Application and associated infrastructure. Percentage availability is defined as:  $\frac{\text{(Scheduled Operation Time - System Downtime)}}{\text{(Scheduled Operation Time)}} * 100$ .
- v. "Helpdesk/Onsite Support" shall mean the 24 x7 basis support Centre which shall handle Fault reporting, Trouble Ticketing and related Enquiries during this contract.
- vi. "Incident" refers to any event/abnormalities in the functioning of the any of Hardware/Software Equipment's/Services that may lead to disruption in normal.

***(C) Interpretation & General Instructions:***

The business hours are 9:00AM to 8:00PM on all days (Mon-Sat). The bidder, however recognizes the fact that the DEPARTMENT offices will require to work beyond the business hours on need basis. "Non-Business Hours" shall mean hours excluding "Business Hours" 11X6 shall mean hours between 9 AM 8 PM on all days (Mon-Sat). The SLA parameters shall be monitored on a monthly/quarterly/half yearly Basis as otherwise stated as per the individual SLA parameter requirements. The bidder is expected to provide the following service levels. In case these service levels cannot be achieved at service levels defined in the tables below, it shall result in a breach of contract and invoke the penalty clause. A Service Level violation will occur if the bidder fails to meet Minimum Service Levels, as measured on a Quarterly/Half Yearly/Monthly basis, for a particular Service Level. Overall Availability and Performance Measurements will be on a monthly basis for the purpose of Service Level reporting. An "Availability and Performance Report" will be provided by the bidder on monthly basis in the DEPARTMENT in the suggested format and a review shall be conducted based on this report. A monthly Availability and Performance Report shall be provided to the DEPARTMENT at the end of every month containing the summary of all incidents reported and associated bidder performance measurement for that period.

***(D) Measurement of SLAs***

NMS shall play a critical role in monitoring the SLA compliance and hence will have to be customized accordingly. The contractor/bidder shall provide the NMS monitoring tool in the proposal with all required licenses/modules as deemed necessary for monitoring the SLAs. The selected Bidder (SI) must deploy NMS tool and develop additional scripts (if required) for capturing the required data for SLA report generation in automated way. This tool should generate the SLA Monitoring report in the end of every month which is to be shared with DEPARTMENT on a monthly basis. The tool should also be capable of generating SLA reports for a Quarter. Department will audit the tool and the scripts on a regular basis. Where required, some of the Service Levels will be assessed through audits or reports e.g., utilization reports, measurements reports, etc., as appropriate to be provided by the SI on monthly/quarterly basis, in the formats as required by the Department. The tools to perform the audit will need to be provided by the SI. It may be noted that the SI has to provision for the required tools/licenses/modules to measure the SLA parameters.

**(e) Category of SLAs:**

This SLA document provides for minimum level of services required as per contractual obligations based on performance indicators and measurements thereof. The SI/ contractor shall ensure provisioning of all required services while monitoring the performance of the same to effectively comply with the performance levels. The services provided by the Operator shall be reviewed by Department that shall:

- i. Regularly check performance of the operator against this SLA.
- ii. Discuss escalated problems, new issues and matters still outstanding for resolution
- iii. Review of statistics related to rectification of outstanding faults and agreed changes.
- iv. Obtain suggestions for changes to improve the service levels.

The SLA has been logically segregated in the following categories:

- (1) Implementation Service levels
- (2) Post Implementation Phase SLA
- (3) SLA for Trunking system Infrastructure

**(1) Implementation phase service levels :**

Payments to the bidder will be made after careful scrutiny of the deliverables and due approval from Rajasthan Police Communications Organization as per the payment schedule.

- The penalty shall be calculated and deducted from the immediate payment due.
- All below mentioned penalties are exclusive to each other

**(2) Post Implementation phase service levels :**

The Bidder shall ensure that all relevant events are logged and such logs are made accessible to the Department for review/report through SLA monitoring tool in a readable and desired format by the Department. Measured using NMS/SLA monitoring tool to be provided by the bidder. Back-to-back mechanism must be established by the Bidder for checking the availability of services. Non-availability of even one of the services would amount to no service available for the purpose of this SLA and thus breach. The SLA will be measured at the main control unit and will not include the Network time. The bidder has to provide suitable NMS module to that effect.

**(3) SLA for Trunking system infrastructure :**

Time in which a complaint/query is resolved after it has been responded by the bidder. This service level will be measured on a monthly basis for each site.

- These service levels will be monitored on monthly basis for each site.
- The Bidder is expected to submit a monthly report on the availability to Department.
- Covering all Trunking equipment in the project.

### 7.3 Service Level Agreement (SLA) Table:

The bidder should facilitate the department in working out the SLA by using reporting tools, NMS etc. supplied as per the tender.

S. No.	Measurement	Definition	Calculation Period	Measurement Interval	Reporting Period	Breakdown Period	Penalty
1	Uptime of main controlling units	Calculations based on "Total hours controlling units/24x30 hours"	As per actual break-down	Daily with help of system reports by NMS/other appropriate mechanism	Monthly	<2 hours	Nil
						>2&≤24 hours	Rs.500 per hour
						>24&≤72 hours	Rs.1000 per hour
						>72&≤144 hours	Rs.2000 per hour
						>144 hours	Rs.5000 per hour or forfeited the PBG & Cancel agreement
2	Software update & customization	Time taken by the vendor to update software modules created for various services	Need basis	Time will be calculated from the time of notification of change in software module through letter / email	N.A	As per timeline notified in change approval communication by Client to Bidder	Rs. 500 per week of delay per change request beyond agreed timeline
3	Mandatory Maintenance	Time taken by vendor to maintain system				Mandatory maintenance Monthly & corrective maintenance as & when required	Nil
						In case delay of more than 72 hours	Rs. 1000 per day



**Note:**

1. System breakdown duration should not be more than 2 hours at a stretch.
2. System breakdown frequency should not be more than 3 times in a month.
3. Penalty will be calculated on Monthly/quarterly basis.
4. In case of default under any of the three above mentioned conditions, the Rajasthan Police Telecommunication Organization will be free to terminate the contract.

The bidder would inform to the department about scheduled maintenance which will be done during nonpeak hours and such scheduled maintenance period not be taken into account while calculating the break down time.

## Chapter - 8 Technical Specifications

### TECHNICAL SPECIFICATIONS of RADIO TRUNKING SYSTEM – DMR Tier-III Technology

#### **A. BASE STATION UNIT (BSU):**

<b>SPECIFICATIONS</b>		
<b>S.I. No.</b>	<b>GENERAL</b>	
1.1	Frequency Range	400 MHz Band
1.2	Duplex Spacing	10 MHz for 400 MHz Band
1.3	Technology	TDMA - two slot DMR Tier-III Radio Trunking Protocol, ETSI Standard
1.4	Frequency Stability	±0.5 PPM or better
1.5	Channel Spacing	12.5KHz
1.6	Emission	Analog - 11K0F3E Digital - 7K60FXE & 7K60FXD/7K60FXW
1.7	Power Supply	230V±10%, 50Hz
1.8	Vocoder	AMBE+2
<b>2</b>	<b>TRANSMITTER</b>	
2.1	Power	Up to 100W (User Selectable)
2.2	FM Hum & Noise	-40 dB or better
2.3	Adjacent channel power	-60 dBc or better
2.4	Audio Response	+1, -3dB
2.5	Modulation	4FSK
<b>3</b>	<b>RECEIVER</b>	
3.1	Sensitivity (Analog)	0.30µV at 12db SINAD or better
3.2	Sensitivity (Digital)	0.30µV at 5% BER or better
3.3	Inter-modulation rejection	70 dB or better OEM Certification supported by International Recognized Laboratory
3.4	Adjacent Channel Selectivity	≥ 65dB @12.5KHz
<b>4</b>	<b>Antenna System</b>	
4.1	Separate antenna system for Tx and Rx which shall include High Gain antenna system Minimum 10dBi or better for Tx (1+1) and Rx.	
4.2	Surge protecting devices in RF cables	
<b>5</b>	<b>CHANNEL UNIT:</b>	
5.1	Shall be Modular/Expandable.	
5.2	Each channel should be configurable to traffic and control unit and vice-versa.	
<b>6</b>	<b>AIR INTERFACE STANDARDS:</b> Shall be open Standards DMR Tier-III OEM Certification supported by International Recognized Laboratory	
<b>7</b>	<b>BASE STATION to BASE STATION AND MASTER STATION CONTROL INTERFACE:</b> For intercell traffic communication with microwave, optical fiber or PSTN Leased line independently.	
<b>8</b>	<b>ENVIRONMENTAL</b>	
8.1	Operating Temperature	-30°C to + 55°C
8.2	Storage Temperature	-40°C to + 70°C
8.3	Humidity	95% Max. at + 40°C non-condensing
OEM Certification supported by International Recognized Laboratory		

**B. MASTER CONTROL UNIT:**

**ESSENTIAL FEATURES:**

<b>S.I. No.</b>	<b>SPECIFICATIONS</b>
<b>1</b>	<b>Switching System</b>
1.1	IP based switching equipment.
1.2	Shall be equipped with all necessary subsystems/modules and one-time licensed system software as required for whole life.
1.3	High availability failover mechanism to switch from primary to secondary switch/controller and vice-versa for hardware failure, software failure and network failure.
1.4	Data base shall be mirrored in both the site hot standby.
2	Minimum No. of Base Station supported – 10 nos.
3	Minimum No. of Carriers Station sites supported – 06 nos.
4	Network should support at least 250 Carriers
5	Minimum Radio terminal supported - 2000 which will include mobile/static/portable radio dispatchers and gateway etc.
6	Minimum No. talk groups – 50
7	<b>Dispatch Console:</b> Minimum 2 Nos. Or more as per user requirement
7.1	<p><b>The Dispatcher Console shall be able to handle:</b></p> <ul style="list-style-type: none"> <li>a) Individual calls, group calls, all calls, broadcast calls, emergency calls and patched group calls.</li> <li>b) Data services like status, SD Sand free form text messaging</li> <li>c) Repeater site wise Tracking of Radio subscribers.</li> <li>d) Calls shall be initiated by selecting talk-group(s)from the graphical display The Dispatch console shall have Radio enable and disable/Stun un-stun facility.</li> <li>e) The Dispatch console shall maintain call and activity log for audit.</li> <li>f) No call failure</li> </ul>
<b>8</b>	<b>Network Management Terminal (NMT)</b>
8.1	<ul style="list-style-type: none"> <li>a) NMT shall work in closed captive Network environment and should have hot standby redundancy.</li> <li>b) NMT shall be equipped with all necessary sub-systems/modules and installed with necessary licensed software.</li> <li>c) The NMT shall provide map of the equipment in the network, such as switch controllers, radio base stations, servers and work stations etc. in Trunked Radio System with status and alarm indication.</li> <li>d) NMT should display real time channel activity and store activity logging of system components.</li> <li>e) The NMT shall provide user friendly GUI tothe NMS administrator and operators with pull-down menu, function keys, online help screens, windows, color pictures and statistical graphs foreasy operation and interpretation of information.</li> <li>f) The call processing shall not affected by failure of network management system/terminal.</li> </ul>
8.2	<b>Fault management:</b> To monitor and to display the status and status history of a system component and should also perform diagnostics when needed
8.3	<p><b>Voice Call Type:</b> Group call, individual calls, emergency calls, Broadcast calls.</p> <p><b>Non Voice calls/data calls:</b></p> <ul style="list-style-type: none"> <li>a) Inhibit/Uninhibit</li> <li>b) Authentication registration</li> <li>c) Location information transfer</li> <li>d) Status, short data messages</li> <li>e) Packet data transfer facility for customized application</li> <li>f) Shall support AVLS</li> </ul>
8.4	<b>Scanning:</b> Shall support talk group scan, priority scan

8.5	<b>Late Entry:</b> Shall support to Group calls.
8.6	<b>Fault Tolerance:</b> a) In case of failure in network, isolated site shall be switched to single site Trunking mode at that time. b) In case of Base Station failure, the user terminals should operate in Fail Soft Mode.
8.7	<b>Subscriber Management Features:</b> Add/remove subscribers a) Add/remove multiple subscribers b) Customize call type permissions c) Add/remove multiple talk groups d) Add a broadcast call group e) Add a system call group
8.8	<b>System Management Features:</b> a) Transmission Trunking b) Subscriber unit registration/de-registration c) Group call with late entry, talk group ID d) Broadcast group call, Unit-to-unit call e) Call queuing f) Status message, short message g) Priority talk group monitor and override h) Radio check, radio inhibit/sun-inhibit i) Roaming j) Group location restrictions k) Subscriber location/restrictions
8.9	<b>Maintenance:</b> license for OS, application, recovery software and data base backup features.
9	<b>Remote Killing:</b> Provision to kill or disable the Radio remotely.
10	<b>Accounting management:</b> The accounting management feature shall have the capability of tracking the activity of radio users on the system and allow the customer to produce reports about the traffic on the system.
11	<b>Performance management:</b> The performance feature shall have the capability to monitor, control and optimize the utilization of system resources.
12	<b>Security management:</b> a) System should support multiple number of network management user accounts. b) Access rights to the various network management applications. c) Multiple levels of access rights to users for performing tasks with these applications. The security management feature shall have the capability of allowing the establishment of authorized log-on names and passwords to the NMS.

**OPTIONAL FEATURE: -**

13	<b>Voice Recording System:</b>
13.1	<b>The Voice Recording System shall support:</b> a) Minimum 16 Nos. of Channel and should be modularly expandable as per the user requirement b) Group call within subscriber radios c) Calls to and from Dispatch console and subscriber radios. d) Individual call recording with facility to disable this feature. e) Telephone call through telephone gateway f) Calls through conventional analog <b>FM</b> gateway with its metadata, i.e. Date, time, duration, PTT ID, Group ID, etc.

	<p>g) Provision to search records, replay the voice conversations, back-up and restore facility should to be built-in-suitable GUI, application shall be provided.</p> <p>h) Calls can be located and replay by radio I/D, talk group, I/D, Alias, date/Time criteria etc.</p> <p>i) Digital call recorder shall support Encryption.</p> <p>j) Data should be recorded in main site and other (fall back/Disaster recovery) site recorder simultaneously.</p> <p>k) The system should have minimum 100 TB of storage capacity and should be modularly expandable.</p>
14	<p><b>AVLS: GIS INTERFACE FOR CALL-TAKING AND DISPATCHING</b> The AVLS System should be capable of providing the following basic features:</p>
14.1	Shall be capable of displaying a map with the geo-code at the centre of the map display window and at predefined scale based on a predefined display screen rules.
14.2	Shall be capable of locating and displaying geographical information using defined attribute type.
14.3	<p><b>Map Query:</b> Shall undertakes a number of queries based upon specific map features to determine:</p> <p>a. Street/road and cross-street/road names.</p> <p>b. Co-ordinate positions.</p> <p>c. Address ranges.</p> <p>d. Database information associated with a graphic symbol.</p>
14.4	<b>Map Grid:</b> Shall be capable of continuously reporting one or more of the following grid references (to the Dispatcher's screen) as the Dispatcher moves the cursor: Latitude and longitude.
14.5	Resource symbols shall be able to be automatically placed on the map display at the location as reported from Automatic Vehicle Location. For the continuous streaming of coordinates, the system shall be able to continuously update the vehicle symbol as the coordinates are received from the Automatic Vehicle Location (AVL).
14.6	The incident and resource symbols should be able to be colour coded and have that colour automatically updated as the status-changes.
15	<b>Health Status:</b> Health Status of Remote radio should be available in NMS.

**C.DIGITAL HANDHELD RADIO:**

S.I. No.	SPECIFICATIONS	
1	GENERAL	
1.1	Frequency Range	400 MHz Band
1.2	Duplex Spacing	10 MHz for 400MHz Band
1.3	TDMA	2-slot
1.4	Operation Modes	DMR Tier III
1.5	Emission	11K0F3E, 7K60FXE, 7K60FXD, 7K60FXW
1.6	Number of Channel	1000 or better
1.7	Channel Spacing	12.5kHz
1.8	Number of contacts (individual/group call numbers)	1000 or better
1.9	Battery Capacity	Li-ion/Li-Poly rechargeable battery of capacity 2000 mAh or higher capacity. Bidder to specify the specific voltage
1.10	Frequency Stability	±1.5 PPM or better
1.11	Display	Alphanumeric
1.12	Protection	Reverse Polarity and High VSWR
1.13	Interoperability with Minimum two vendors	IOP Certification from Technical Working Group (TWG) of the DMR Association
1.14	Antenna Impedance	50 Ω
1.15	Antenna	Helical Antenna

1.16	Weight	Less than 500 gms with battery
1.17	EMI/EMC	ETSI EN 301 489-1 & ETSI 301 489-5/ OEM Certification supported by International Recognized Laboratory
1.18	Air Interface Standards	Shall be open Standards DMR Tier-II OEM Certification supported by International Recognized Laboratory
<b>2</b>	<b>TRANSMITTER</b>	
2.1	RF Power Output	4W for 400MHz (programmable)
2.2	Digital Modulation	4FSK DMR TIER-III
2.3	Modulation Limiting	±2.5 kHz at 12.5 kHz
2.4	FM Hum & Noise	-40 dB or better at 12.5 KHz
2.5	Adjacent Channel Power	-60 dBc or better at 12.5 KHz
2.6	Audio Response	+1, -3dB
2.7	Audio Distortion	Less than 3%
2.8	Digital Vocoder	AMBE+2
2.9	Communication Security (Optional)	System should have in built encryption and should also have provision to support 3 <sup>rd</sup> Party Encryption.
<b>3</b>	<b>RECEIVER</b>	
3.1	Sensitivity (Analog)	0.30 µV (12 dB SINAD) or better
3.2	Sensitivity (digital)	0.30 µV at 5% BER or better
3.3	Adjacent channel Selectivity	60 dB or better at 12.5 KHz
3.4	Inter-modulation	70 dB or better OEM Certification supported by International Recognized Laboratory
3.5	Audio Output	Minimum 500 mW
3.6	Audio Distortion	Less than 3%
<b>4</b>	<b>GPS</b>	
4.1	Time to first fix cold start	<2Minutes
4.2	Time to first fix hot start	<20Second
4.3	Horizontal accuracy	<10Meter
<b>5</b>	<b>ENVIRONMENTAL</b>	
5.1	Operating Temperature	-30°C to +55°C OEM Certification supported by International Recognized Laboratory
5.2	Storage Temperature	-40°C to +70°C
5.3	Humidity	95% Max. at +40°C non-condensing
5.4	Vibration	MIL-STD -810 F/G
5.5	Shock & Drop	MIL-STD -810 F/G
5.6	Water intrusion & Dust	MIL-STD-810F/G & IP-67
5.7	Salt	MIL-STD-810F/G

5.8	Rain	MIL-STD-810F/G
5.9	Low Pressure	MIL-STD-810F/G
<b>6</b>	<b>ACCESSORIES</b>	
6.1	Battery Charger	
6.1.1	Input Voltage	230 V $\pm$ 10%, 50Hz
6.1.2	Output Voltage	As per battery pack (Information will be provided by OEM/Vendor)
6.1.3	Type of Battery Charger	Li-ion / Li-poly
6.1.4	Protection	1. Reverse Polarity Protection 2. Short Circuit Protection
6.1.5	Indication	Visual Indication for all modes of charging status
6.1.6	Charging Time	Standard Charger - 6 to 14 hrs Rapid Charger - 1 to 3 hrs
6.1.7	No. of charging pockets	1/2/6 (Vendor to quote accordingly)
6.2	Hands free Kit (VOX unit with PTT) (Optional)	The offered sets should be compatible with minimum any of the two or more variants 1. Bone Conduction 2. Ear Plug 3. Headphone, etc.
6.3	Programming Kit	All necessary Software and Hardware required for programming of the set independently for lifelong support with regular updates.
6.4	Leather Case	One good quality leather case with belt clip and shoulder strap.
6.5	No. of Battery	Li-ion or Li-poly batteries with each radio sets.
6.6	Literature	a) User manual with each radio sets should be provided free of cost in soft as well as hard copy. b) Technical repairing manual, with complete block diagram, circuit layout, PCB layout, component & wiring diagram etc. should be provided as per user's requirement in soft as well as hard copy.

#### **D. DIGITAL MOBILE RADIO:**

<b>S.I. No.</b>	<b>SPECIFICATIONS</b>	
<b>1</b>	<b>GENERAL</b>	
1.1	Frequency Range	400 MHz Band
1.2	Duplex Spacing	10 MHz for 400 MHz Band
1.3	TDMA	2 - Slot
1.4	Operation Modes	DMR Tier III
1.5	Emission	11K0F3E, 7K60FXE, 7K60FXD, 7K60FXW
1.6	Number of Channel	1000 or better
1.7	Channel Spacing	12.5 kHz
1.8	Number of contacts (individual/group call numbers)	1000 or better
1.9	Operating Voltage	11.25 VDC
1.10	Frequency Stability	$\pm$ 1.5 PPM or better
1.11	Antenna Impedance	50 Ohm
1.12	Weight	Less than 2kg
1.13	EMI/EMC	ETSI EN 301 489-1 & ETSI 301 489-5/

		OEM Certification supported by International Recognized laboratory
1.14	Display	Alphanumeric
1.15	Protection	Reverse Polarity and High VSWR
1.16	Interoperability with minimum two vendors	IOP Certification from Technical Working Group (TWG) of the DMR Association.
<b>2</b>	<b>TRANSMITTER</b>	
2.1	RF Power Output	Minimum 25 W for all bands
2.2	Digital Modulation	4FSK DMR TIER-III
2.3	Modulation Deviation	±2.5 kHz at 12.5 kHz
2.4	FM Hum & Noise	-40 dB or better at 12.5 KHz
2.5	Adjacent Channel Power	-60 dBc or better at 12.5 KHz
2.6	Audio Response	+1, -3dB
2.7	Audio Distortion	Less than 3%
2.8	Digital Vocoder	AMBE+2
2.9	Communication Security <b>(Optional)</b>	System should have in built encryption and should also have provision to support 3 <sup>rd</sup> Party Encryption.
<b>3</b>	<b>RECEIVER</b>	
3.1	Sensitivity (Analog)	0.30 µV (12 dB SINAD) or better
3.2	Sensitivity (digital)	0.30 µV at 5% BER or better
3.3	Adjacent Channel Selectivity	60 dB or better at 12.5 KHz
3.4	Inter-modulation	70 dB or better OEM Certification supported by International Recognized Laboratory
3.5	Audio Output	Minimum 3 W
3.6	Audio Distortion	Less than 3%
<b>4</b>	<b>GPS</b>	
4.1	Time to first fix cold Start	<2Minutes
4.2	Time to first fix hot Start	<20Second
4.3	Horizontal accuracy	<10Meter
<b>5</b>	<b>ENVIRONMENTAL</b>	
5.1	Operating Temperature	-30°C to +55°C OEM Certification supported by International Recognized Laboratory
5.2	Storage Temperature	-40°C to +70°C
5.3	Humidity	95% Max. at +40°C non-condensing
5.4	Vibration	MIL-STD-810F/G
5.5	Shock & Drop	MIL-STD-810F/G
5.6	Water intrusion & Dust	MIL-STD-810F/G & IP54
5.7	Salt	MIL-STD-810F/G
5.8	Rain	MIL-STD-810F/G
5.9	Low Pressure	MIL-STD-810F/G



**E. Diesel Generator (7.5 KVA):**

The bidder shall provide Auto and manual start Silent Diesel Generator with auto change over (7.5KVA Single phase) of branded firms Koel/Kirloskar/Mahindra/Ashok Leyland/ Sudhir

Installation: - Necessary foundation, canopy Shade and installation should be done on site by the bidder and the required all accessories should be provided at the time of installation. The Generator shall be installed in a raised platform of 05 ft height based on site as per the intimation of the department.

**F. 5 Star inverter type Split AC of 2 Ton:**

Technical Specification of Temperature Maintaining System – Reputed standardized make (O General, Blue star, Hitachi, LG or equivalent) with all accessories.

For Base Stations and Control Centre:

- a. Four number of 5 Star inverter type Split AC of 2 Ton capacity for Master site and control room each and two number of 5 Star inverter type Split AC of 2 Ton capacity shall be provided at each base station accommodation/DMR TIER-III switching centre with automatic change over every 6 hours.
- b. AC should be unmanned so machine should be rugged, reliable, maintenance free for long life

**G. Microwave Link:**

Repeater and control/switching equipment linked by suitable capacity Microwave Link (Auto Tuneable) in 7Ghz License band of branded firms Ceragon/Nokia/NEC/ Stratex/Ericsson along with required hardware and having hardware redundancy i.e., 1 + 1 hot standby configuration.

**H. Uninterrupted Power Supply (UPS) 5KVA:**

Sl. No.	Description	Specification
1	Sinewave Online UPS 5KVA (Single phase) with 04-hour backup and 1+1 hot standby of branded firms like Numeric/APC/Hitachi/Emerson/Fuji Electric/ Delta.	
2	Supply and installation of Accessories like Battery Rack, Interconnecting cable leads/ DC Cables for batteries etc.,	

**I. Programming Kit for Repeater/Base/Mobile/Handheld Radios:**

All necessary Software and Hardware required for programming of the set independently for lifelong support with regular updates. The Laptop/Notebook should be of specifications with Intel i7 10<sup>th</sup> generation or better with preloaded Latest Windows OS and MS Office.

**J. Radio Test Setup (Optional):**

Suitable Radio Communication Test Setup having all technical features of Base Station, Mobile, Static, handheld sets and accessories etc. for DMR TIER-III Trunked Radio System with auto test and alignment facility. There should be provision to automate testing through PC/Laptop.

**K. Internet Lease Line:**

The system should work on Microwave link as well as through internet lease line (at feasible sites) provided by the bidder at repeater site in consultation with department. The lease line plan for the feasible sites will be finalized in consultation with the department. Wherever ILL connection is not feasible, the bidder will provide ILL to the nearest point of this site and will provide extra licence band microwave link of 1 GBPS capacity for data connectivity between these two points.

**L. Site Preparation (Civil/electric work at Repeater/Control Stations/District Communication Office):**

1. AC Line wiring at each site
2. UPS Line wiring at each site
3. Lightning arrestor as per specification mentioned in the bid document
4. Fire Extinguisher – 1 at each site
5. Earthing at each site

**M. Furniture Branded (Godrej/Urban Ladder/Durian) for each District Bharatpur & Kota City**

<b>S.no.</b>	<b>Name of Item</b>	<b>Qty.</b>
1	Chair	20
2.	Office Table	03
3.	Computer Table	05
4.	Wooden Almirah	05
5.	Officer Chair	03
6.	Rest Table	03
7.	Five-Seater Sofa	01
8.	Centre Table	01

**N. Renovation**

Renovation of District communication office & repeaters in consultation with district Incharges. Renovation work includes Flooring, paint, Aluminium/glass doors & windows, partitions, curtains etc.

**O. Earthing**

1. Chemical Earthing
2. Maintenance Free
3. Maintain low Resistance for longer period
4. Designed to high peak current& maximum fault current dissipation instantly
5. Provide stable reference potentials for instrument accuracy
6. Discharges short circuit current

**P. Lab reports**

All above mentioned lab reports shall be submitted along with the technical bid.

## DMR Tier II Specifications

### VHF Digital Mobile/Static Transceiver Set (20 Watt) with accessories

S. No.	Particulars	Technical Specification
<b>A. General</b>		
1.	Frequency Range	136 MHz to 174 MHz (Full Band)
2.	Channel Capacity	255 or higher
3.	Protocol	Digital TDMA (DMR) Technology 2 - slot
4.	Channel spacing	1. Analog 12.5 KHz /25 KHz 2. Digital- TDMA 12.5 KHz
5.	Type of Emission	1. Analog 11 KOF3E 2. Digital 4 FSK or equivalent technique complying to open standard/non-proprietary Digital Protocol as defined by an international standards body like ETSI/FCC etc.
6.	Frequency Stability	$\pm$ 0.5 PPM or better
7.	Type of operation	Simplex, press to talk
8.	Weight	Light weight will be preferred
9.	Operating Voltage	12 V DC ( $\pm$ 10%)
10.	Antenna Impedance	50 Ohm
11.	VSWR	$\leq$ 1.5
12.	Communication Interface	RS 232 Ethernet/USB
13.	Protection	(i)Reverse Polarity Protection (ii)Protection against high VSWR
<b>B. Transmitter</b>		
1.	RF Power output	20 watt $\pm$ 0.5 dB (Programmable/selectable) or more
2.	Frequency Deviation	$\pm$ 2.5 KHz @ 12.5 KHz $\pm$ 5KHz @ 25 KHz
3.	Modulation Distortion	Less than 3 % at 1 KHz
4.	FM Hum Noise	-40 dB or better
5.	Adjacent Channel Power	-60 dB or better
6.	Spurious & Harmonics Response	60 dB or better
<b>C: - Receiver</b>		
1.	Sensitivity	Analog - 0.25 $\mu$ V for 12 dB SINAD or better Digital - 0.25 $\mu$ V @ 5% BER or better
2.	Adjacent Channel Selectivity	60 dB or better
3.	Intermodulation	60 dB or better
4.	Audio Output	Internal minimum 3 Watt
5.	Audio Response	+1, -3dB
6.	Audio Distortion	Less than 3 % or better
7.	Image Rejection	60 dB or better
8.	Speaker	Internal Speaker and Socket for external Speaker

<b>D: -Environmental Specifications</b>		
1.	Operating Temperature	-10° C to + 55° C
2.	Storage Temperature	-10° C to + 60° C
3.	Humidity	Max 95 % @ +40° C non-condensing
4.	Shock, Low & high temp, Vibration, low pressure, Solar Radiation	MIL-STD-810 G
5	Dust & Water intrusion	IP54 or better
<b>E: - Essential Features</b>		
1	Mode of operations	Radio should operate in analog mode & Digital mode
2	GPS	Entire GPS system must be in built inside the Wireless Set with accuracy less than 10 meter
3	Encryption	In-built high-grade encryption in Digital mode (AES 256 BIT) (Hardware & Software shall be provided)
4	SMS Texting	Should be capable of sending pre-defined messages & short messages
5	IP Connectivity/networking	System should be IP compatible with multisite repeaters
6	Programming	Front panel programming with Password Protection or PC Programming
7	Microphone	DTMF Microphone should be supplied with Radio
8	LCD Display	LCD with Backlight (four-line display or better)
9	Signal Strength Indicator	Received Signal Strength Indicator or Digital Read out
10	Alpha- Numeric Channel Alias	
11	CTCSS/Digital CTCSS	
12	Caller ID Display	
13	Talk Around	
14	Transmitter Time Out Timer (TOT) Operation	
15	Emergency Call/Button	
16	Scanning with Priority	
17	Selective Call, Group Call, Inter and Intra group call	
18	Busy Channel Lockout	
19	Remote Kill/unkill, Stun and Revive Facility	
20	Programmable power on password	
21	Externally accessible accessory connector (for connecting Programming Kit, Repeater Interface etc.)	
22	Signalling system for Analog conventional mode (DTMF, 2/5 Tone etc.)	
23	GIS - Radio should have application protocol, Interface along with software application to provide location & messaging on PC/Console (Hardware & Software shall be provided)	
24	Inbuilt Bluetooth for audio accessories	
<b>F: - Accessories and Manuals</b>		
1	Operating/User Manual	Hardcopy, one for each Mobile Radio (Free of Cost)
2	Mounting kit	Mounting kit
3	Microphone	DTMF Microphone with clip
4	Battery cable	Minimum Length 3 meters with suitable fuse

5	Type of Antenna	3 dB or better Whip Antenna for vehicle (quantity as per BOQ)
		3 dB or better gain Omni directional GP Antenna with 30/60 meter LDF cable for base stations (quantity as per BOQ)
6	Technical/ Service Manual	Hard Copy & Soft copy (Quantity as per BOQ)
7	Programming Interface and software	All necessary Radio programming hardware, cables, connectors and software (Quantity as per BOQ)

### VHF Digital Handheld Radio (1-5 W)

S. No.	Particulars	Technical Specification
<b>A: - General</b>		
1	Frequency Range	136 MHz to 174 MHz (Full Band)
2	No. of Channel	255 or higher
3	Channel spacing	12.5 KHz or better
4	Frequency Stability	$\pm 0.5$ PPM or better
5	Protocol & Technology	Digital TDMA (DMR) Technology 2- slot
6	Type of Emission	Analog 11 KOF3E Digital 4 FSK or equivalent technique complying to open standard/non-proprietary Digital Protocol as defined by an international standards body like ETSI/FCC etc.
7	Type of operation	Simplex, press to talk
8	Weight	400 gram or less with battery/Belt clip and helical antenna
9	Type of Antenna	Rugged flexible Helical Antenna
10	Antenna Impedance	50 Ohms
11	VSWR	$\leq 1.5$
12	Battery Pack	Li-ion or Li- Polymer Battery Pack of 2300 mAH or more with belt clip (Bidder shall mention DC voltage and Chemistry)
13	Protection	(i) Reverse Polarity Protection (ii) Protection against high VSWR
<b>B: - Transmitter</b>		
1	RF Power output	1 to 5 watt (Programmable/selectable)
2	Modulation limiting	$\pm 2.5$ KHz @ 12.5 KHz
3	FM Hum Noise	-40 dB or better @ 12.5 KHz
4	Adjacent Channel Power	-60 dB or better @ 12.5 KHz
5	Audio Distortion	Less than 3% or better
<b>C: - Receiver</b>		
1	Sensitivity	Analog - 0.25 $\mu$ V for 12dB SINAD or better Digital- 0.25 $\mu$ V @ 5% BER or better
2	Adjacent Channel Selectivity	60 dB or better
3	Inter Modulation	60 dB or better

4	Image Rejection	60 dB or better
5	Audio Output	Minimum 500 mW
6	Rated Audio Distortion	Less than 3% or better
7	Audio Response	+1, -3dB
<b>D: - Environmental Specifications</b>		
1	Operating Temperature	-10° C to + 55° C
2	Storage Temperature	-10° C to + 60° C
3	Humidity	Max 95% @+40° C non-condensing
4	Environmental Standards i.e., Low & High Temperature, Low Pressure, Shock, Rain, Vibration, Solar Radiation	As per MIL-STD 810 G
5	Dust & Water intrusion	IP67 or better
<b>E: - Essential Features</b>		
1	Busy channel lockout	
2	Scanning with priority	
3	Remote Kill, Unkill/Stun and Revive Facility	
4	Battery saver mode	
5	Low battery alert / Battery Strength Indicator	
6	Transmitter Time out timer (TOT)	
7	LCD with Backlight (four-line display or better)	
8	Caller ID Display	
9	Support Hands free operation (VOX)	
10	DTMF keypad	
11	GPS (Entire GPS system must be in built inside the Wireless Set) with accuracy less than 10 meter	
12	Power on password	
13	In-built high-grade encryption in Digital mode (AES 256 BIT) (Hardware & Software shall be provided)	
14	SMS Texting - Should be capable of sending pre- defined messages & Short Messages	
15	System should be IP compatible with multi-site repeaters	
16	Talk Around	
17	Received Signal Strength Indicator	
18	CTCSS/Digital CTCSS	
19	Selective Call, Group Call, Inter & Intra group call facility	
20	Alpha Numeric Channel Alias	
21	GIS - Radio Should have application Protocol, Interface along with software application to provide location and messaging on PC/console (Hardware & Software shall be provided)	
22	Emergency - Allows a user to obtain help in critical situations	
23	Programming - front Panel programming with Password Protection or PC Programming	
24	Mode of Operation - Radio should operate in analog mode & Digital Mode	
25	Inbuilt Bluetooth for audio accessories	

<b>F: - Accessories and Manuals</b>	
1	Operating/User Manual - Hard copy with each set (Free of cost)
2	Single unit rapid charger
3	Helical antenna
4	Battery with belt clip
5	Technical/Service Manual - Hard and Soft copy (Quantity as per BOQ)
6	Programming Interface and Software - All necessary Radio programming hardware, cables, connectors and software (Quantity as per BOQ)
7	Bluetooth (OEM Make will be preferred) audio device (Compact) with PTT, compatible with quoted Radio (Quantity as per BOQ)
8	Wired Hands-free kit (for hands free operation) (Quantity as per BOQ)
9	Multi-unit charger (6 or more units) - (Quantity as per BOQ)

<b>VHF DIGITAL AUTOMATIC REPEATER BASED ON DMR</b>		
<b>Sl. No.</b>	<b>Particulars</b>	<b>Technical Specifications</b>
<b>A: - General</b>		
1	Frequency Band	136 to 174 MHZ (Split & Full Band)
2	Operating Mode	Open standard Digital protocol DMR TDMA based 12.5 KHZ channel spacing for Digital two-way Radios
3	Operating Selection	Full automatic
4	Channel Capacity	16 or more
5	Channel Spacing	12.5 KHZ
6	Operating Voltage	12V DC (10.8 to 15.6 V DC), 230 V AC $\pm$ 10%, 50 $\pm$ 1% Hz with float charger (Automatic switch over to DC during Mains failure)
7	Frequency Stability	$\pm$ 1 PPM or better
8	Interfaces	Ethernet port for IP connectivity
9	Duplexer Insertion loss	Less than 1.2 dB
10	Antenna Impedance	50 ohm
11	Duty Cycle	100%
12	Weight	Light weight will be preferred
13	Display	Indicator for Transmit & Receive
14	VSWR	$\leq$ 1.5
15	Protection	(i) Reverse Polarity Protection (ii) Protection against high VSWR
<b>B: - Transmitter</b>		
1	RF Power Out put	Minimum 20 Watts (Programmable) or better
2	Modulation	Digital (4FSK)
3	Modulation Sensitivity	1 to 10 mV at 1 KHz at mic input for $\pm$ 1.5 KHz standard deviation
4	Modulation Limiting	$\pm$ 2.5 KHz
5	FM Hum/noise	- 40 dB or better
6	Adjacent Channel Power	- 60 dB or better
7	Audio Response	+1, -3dB
8	Digital Vocoder	ETSI/DVSI-USA Make approved

<b>C: - Receiver</b>		
1	Sensitivity (Digital)	0.25 $\mu$ V at 5% BER or better
2	Selectivity	60 dB @ 25KHZ or better
3	Image Rejection	65 dB or better
4	Adjacent Channel Selectivity	60 dB or better
5	Inter modulation	70 dB or better
6	Audio Output	500mW (Minimum)
<b>D: - Environmental</b>		
1	Operating Temperature	-10° C to + 55° C
2	Storage Temperature	-10° C to + 60° C
3	Humidity	95% non-condensing 20° C

<b>E:- Accessories</b>		
1	GP Antenna	6dB Omni directional (Quantity as per BOQ)
2	RF Cable	½ Inch LDF Low Loss Cable 60 Meter (Quantity as per BOQ)
3	Manuals	(i) Operating/User Manual - Hard copy with each repeater (Free of Cost) (ii) Technical/Service Manual – Hard & Soft Copy (Quantity as per BOQ) (iii) Programming Interface and Software - All necessary Radio programming hardware, cables, connectors and software (Quantity as per BOQ)

<b>Essential Instructions</b>		
1	Protocol and Signalling Scheme	Mobile Radios, Handheld Radios, Repeaters shall be same in respect of protocol, Type of emission and signalling scheme etc. and shall be mutually interoperable so that full functional network can be established using these radios and repeaters.
2	Certificates of Tests	1. Firm must produce certificates of National Accreditation Board of Testing and Calibration Laboratories (NABL) approved laboratory or international laboratory accreditation corporation (ILAC) of Quoted model only. 2. OEM Certificate is mandatory for all above specification.
3	Installation, Service and Spare Parts support	1. Onsite technical support for Installation of DMR solution. 2. Support for Service / Spare Parts - Minimum 10 Years and spare availability within four weeks after receipt of supply order.
4	Training	Necessary technical training regarding Operational, Configuration and Programming of the set - The onsite training shall be given to technical persons for 2-3 days minimum.
5	Certificate	DMR association TWG inter-operability certificate is required and the bidder will demonstrate interoperability at the time of POC before the departmental committee constituted for the purpose.



### **LED TV 55" full HD for GPS Location**

<b>S. No.</b>	<b>Parameter</b>	<b>Specification</b>
1	Display Type	4K or better
2	Screen Resolution	4K Ultra HD or better
3	Audio Formats	DTS Digital
4	Screen Size (Diagonal)	55 inch or better
5	HDMI (ARC)	Yes
6	No. of USB Ports	Minimum 2
7	No. of HDMI Ports	Minimum 2
8	Rated Speaker Output Power (RMS)	Minimum 10 Watts
9	Branded	SONY/LG/SAMSUNG

### **LED TV 43" full HD for GPS Location**

<b>S. No.</b>	<b>Parameter</b>	<b>Specification</b>
1	Display Type	4K or better
2	Screen Resolution	4K Ultra HD or better
3	Audio Formats	DTS Digital
4	Screen Size (Diagonal)	43 inch or better
5	HDMI (ARC)	Yes
6	No. of USB Ports	Minimum 2
7	No. of HDMI Ports	Minimum 2
8	Rated Speaker Output Power (RMS)	Minimum 10 Watts
9	Branded	SONY/LG/SAMSUNG

### **Earthing**

1. Chemical Earthing
2. Maintenance Free
3. Maintain low Resistance for longer period
4. Designed to high peak current& maximum fault current dissipation instantly
5. Provide stable reference potentials for instrument accuracy
6. Discharges short circuit current

**Low Loss RF Cable (60 Meter) for Repeater**

1/2" Low Loss LDF Cable of following specifications: -

1	Length	60 Meters	
2	Impedance	50Ω ±1	
3	VSWR	<1.5	
4	Inner Conductor (Single Strand)	Copper Clad Aluminium (CCA)	0.14 inch (OD) or better
5	Outer Conductor	Corrugated Copper	0.48 inch (OD) or better
6	Dielectric	Foam PE (Polyethylene)	
7	Jacket	Black Colour PE	
8	Peak Power	40 KW	
9	Capacitance	23.1 pF/ft   75.8 pF/ft	
10	Inductance	.190 μ H/mtr.   0.058 μ H/ft.	
11	Connector	As per requirement	
12	Branded	Andrew/Times Microwave	

**Low Loss RF Cable (30/60 Meter) for Base Station**

Low Loss LDF Cable of following specifications: -

1	Length	30/60 Meters	
2	Impedance	50Ω ±1	
3	VSWR	<1.5	
4	Inner Conductor (Single Strand)	Copper Clad Aluminium (CCA)	0.14 inch (OD)
5	Outer Conductor	Corrugated Copper	0.48 inch (OD)
6	Dielectric	Foam PE (Polyethylene)	
7	Jacket	Black Colour PE	
8	Connector	As per requirement	

**GP Antenna for Base Stations**

**SPECIFICATION:**

- 1 Frequency Range: - 136 to 174 Mhz.
- 2 Impedance: - 50 Ohms
- 3 Minimum power: - 50 Watt or More
- 4 VSWR: - Less than 1.5:1
- 5 Wind Resistance: - 100 Km/hrs. or More
- 6 Connector: - As per requirement
- 7 Base material: - Aluminium/Brass
- 8 Gain: - 3 db or better
- 9 Branded Like Diamond/RFI/DB Spectra/Telewave/Andrew

### **GP Antenna for Repeater Station**

#### **SPECIFICATION:**

- 1- Frequency Range: - 136 to 174 Mhz.
- 2- Impedance: - 50 Ohms
- 3- Minimum power: - 50 Watt or More
- 4- VSWR: - Less than 1.5:1
- 5- Wind Resistance: - 100 Km/hrs. or More
- 6- Connector: - As per requirement
- 7- Base material: - Aluminium/Brass
- 8- Gain: - 6 db
- 9- Branded Like Diamond/RFI/DB Spectra/Telewave/Andrew

### **VEHICULAR ANTENNA FOR MOBILES**

#### **SPECIFICATION:**

- 1- Frequency Range: - 136 to 174 Mhz.
  - 2- Impedance: - 50 Ohms
  - 3- Minimum power: - 50 Watt or More
  - 4- VSWR: - Less than 1.5:1
  - 5- Wind Resistance: - 100 Km/hrs. or More
  - 6- Gain: - 3 db or better
  - 7- Branded Like Diamond/RFI/DB Spectra/Telewave/Andrew
- Vehicular Antenna with 3 mtr. cable and suitable Connector with mounting bracket

### **POWER SUPPLY UNIT (SMPS) (12V/10A) FOR BASE STATIONS**

#### **SPECIFICATIONS**

- Input:170 to 265 VAC ; 50 Hz
- Output: 12 V D.C.
- Output Current :10A
- Protection: Against Over Load & Short Circuit
- Line and Load Regulation:<1 %
- Ripple <1%
- Efficiency > 70% at full load

### **BLUETOOTH DEVICE**

- 1- Suitable with supplied Radio Sets
- 2- OEM Make will be preferred

### **WIRED HANDS FREE DEVICE**

- 1- Suitable with supplied Radio Sets
- 2- OEM Make will be preferred

### **ONLINE UPS 2 KVA**

Specification: -

<b>S. No.</b>	<b>Particulars</b>	<b>Technical Specification</b>
1	OEM	ISO 9001 Series Manufacturer
2	Requirement	Rectifier & Inverter both with Microprocessor Processing Digital Design True On-line UPS
3	Input Supply	Single Phase (Bidder has to supply the equipment) as per the power supply available
4	Output Supply	Single Phase
5	Input Power factor	≥0.9
6	Output Power factor	0.8
7	Battery Backup	Minimum 3200 VAH
8	Mains & Battery	Sealed, Lead acid, Maintenance Free 42 AH Battery, Mains & Battery Isolation
9	Battery Make	Exide or Amaron or Amco or Luminous
10	Other Requirements	Built in LCD display for displaying all requisite UPS & battery parameters for both input and output. Both manual & static bypass switch should be provided. Installation of equipment at site with minor electric work.

### **AIR CONDITIONER 1.5 TON**

- 1 Capacity - 1.5 Ton
- 2 Type- Split Invertor
- 3 Rating - 5 Star
- 4 Copper Condenser
- 5 Make - O General/Daikin/Hitachi

### **Desktop Computer with accessories**

<b>S. No.</b>	<b>Parameter</b>	<b>Specification</b>
1	Processor	10th Generation Intel® Core™ i5-10600T (6-Core, 12MB Cache, 2.4GHz or Higher)
2	Memory	16 GB DDR4 expandable up to 32 GB or Higher
3	Storage	512 GB SSD or higher
4	Optical Drive	Super Multi DVD Writer
5	Monitor	49.5 cm (19.5 inch) TFT LED Digital Color Monitor, TCO' 07 certified monitor
6	Keyboard	OEM USB Keyboard
7	Mouse	OEM USB Mouse
8	I/O Ports	Min. 8 USB ports (min 2 USB 3.0), Headphone (front), Microphone (front), 1 HDMI & 1 VGA/DP port
9	Network Features	10/100/1000 on board integrated network port or better & Wi-Fi
10	Operating System	Windows 10 home 64 bit or higher version preloaded with recovery system.

11	Antivirus	Preloaded Internet Security (Latest version) of McAfee/ Norton/ Symantec/ Kaspersky/ Quick heal/ Sophos with 3 Years Subscription.
12	Accessories	All necessary cables (Power & data cable) to be included.

### **MULTIFUNCTION PRINTER**

S. No.	Parameter	Specification
1	Printing Method	Monochrome Laser
2	Print Speed A4	25 PPM or Higher
3	Print Resolution	600 x 600dpi or higher
4	First Printout Time A4	8.5 secs or less
5	Auto Duplex Print for A4 & Legal	Yes
Copy Specifications		
6	Copy Speed A4	25 PPM or Higher
7	Copy Resolution	600 x 600dpi or more
8	Maximum Number of Copies	99 copies or more
Scan Specification		
9	Scan Type	Flatbed, ADF
10	Scan Resolution	600 x 600dpi or higher
11	Scan speed	Up to 15 PPM
Connectivity & Software		
12	Compatible Operating Systems	Windows 8.1 edition or higher
General Specifications		
13	Device Memory	256 MB or higher
14	Monthly Duty Cycle	7,500 pages or more
15	System interface	1 USB (compatible with USB 2.0), 1 network port
16	Network capabilities	Fast Ethernet
17	Accessories	All necessary cables (Power & data cable)
18	Optional	Wi-Fi enable

### **Portable Programming Kit**

1. Suitable Programming Cable (Base/Mobile, hand held, Repeater)
2. Portable Programming Device (Note Book): -
  - Chipset: 11th Generation Intel® Core™ i7-1165G7 Processor
  - Ram: 8GB, 1x8GB, DDR4, 3200MHz or better
  - Hard Disk: 1 TB or higher
  - Screen: 35.5 CM
  - Preloaded Windows 10 Home Single Language System
  - Antivirus (Quick heal total security/McAfee/Norton) for three years.
  - Required software for programming of proposed Radio Sets, Repeater, link etc.
  - Carrying case

**Site Preparation (Civil/electric work at Repeater /Control Stations /District Communication Office**

1. AC Line wiring at each site
2. UPS Line wiring at each site
3. Lightning arrestor as per specification mentioned in the bid document
4. Fire Extinguisher – 1 at each site
5. Earthing at each site

**Furniture Branded (Godrej/Urban Ladder/Durian) for District Deeg**

<b>S.no.</b>	<b>Name of Item</b>	<b>Qty.</b>
1	Chair	20
2.	Office Table	02
3.	Computer Table	05
4.	Wooden Almirah	05
5.	Officer Chair	02
6.	Rest Table	01
7.	Five-Seater Sofa	01
8.	Centre Table	01

**Renovation**

Renovation of District communication office & repeaters in consultation with district Incharges. Renovation work includes Flooring, paint, Aluminium/glass doors & windows, partitions, curtains etc.

## **SPECIFICATION OF 150 FEET SELF-SUPPORTING TOWER**

The following sections contain Generic Requirement for the said Tower for use in Rajasthan Police Telecommunication Network. The towers shall be four legged with a square base and shall be able to support a load of 250Kg.

Technical specifications for self-supporting communication towers are as under:

### 1.0 GENERAL:

1.0.1 **Bidder shall furnish along with technical bid, all relevant technical information to substantiate that the offered tower complies with the given specifications.**

1.0.2 The tower and accessories must be warranted to be free from defects in material and workmanship for lifetime on all manufactured items (applicable to steel structural elements).

1.0.3 The towers shall be designed and constructed /erected to be suitable for the described antenna loading, weather conditions, soil conditions and conform to the given certifications.

1.0.4 All tower elements shall be angular and hot dip galvanized after fabrication.

1.0.5 All tower accessories like antenna mounts, platforms, cable trays, safety climbing ladder etc. should also be hot dip galvanized.

### 1.0.6 **Nuts, Bolts & Washers:**

All fasteners, plain washer, Nuts, Bolts & Washers should be hot dip galvanized as per applicable relevant **IS** standards.

1.0.7 The tower shall be erected such that one leg is directed towards true north.

1.0.8 The foundation of the tower shall be designed based on the soil testing reports and foundation design shall also be approved by registered / Govt. approved structural engineer.

1.0.9 Tower shall be four legged, angular, square self-supporting.

1.0.10 The Tower must be supplied against CSIR-SERC/IIT approved Design and drawing. Design and Drawing must be submitted along with the tender.

### 1.1 **The following specifications are the requirements for self-supporting for 150 feet tower & accessories.**

The specifications cover the design, fabrication, supply and erection of self-supporting steel communication tower and accessories complete with foundation work, earthing devices, pipe of suitable size and length for mounting antenna, solid state Aviation Obstruction Lights with cabling, ladders for climbing, Cable Racks for supporting cables and platforms.

1.1.1 Tower members shall be of structural steel conforming to **IS 2062 Grade 'A'** as applicable with latest amendments. **(All relevant certification must be given at the time of installation)**

1.1.2 All steel used shall be **hot dip** galvanized, conforming to **IS 4759** specifications for tower members, fasteners and for washers with latest amendments. Spray galvanizing may be permitted wherever hot dip galvanization is not possible with prior approval of purchaser. **(All relevant certification must be given at the time of installation)**

- 1.1.3 Assembly of tower members and other structures on tower shall be fitted by means of nuts and bolts of Grade 5.6 or better and spring washer. Riveting and welding may be done if the design demands and it shall conform to relevant IS specifications with latest amendments. Minimum thickness of members should not be less than 6mm unless specified in design approval. **(All relevant certification must be given at the time of installation)**
- 1.1.4 The quality of steel used for nuts, bolts, washers etc. should conform to relevant IS specifications with latest amendments and mechanical properties as per relevant IS specifications with latest amendments. Dimensionally also, it shall conform to relevant IS specifications with latest amendments. The heads being forged out of solid, truly concentric with the shank and shall be perfectly straight. All bolts shall have hexagonal heads and nuts. The bolts shall be treated with standard threads to take the full depth of the nuts. All nuts shall fit hand tight to the bolts. No appreciable fillet shall exist at the point where shank of the bolt connects to the head. Washers shall be provided to all bolts and nuts. The tender shall include sufficient spare bolts and nuts to compensate for loss in the field during erection. The cost of bolts and nuts shall be included in the cost of tower. **(All relevant certification must be given at the time of installation)**
- 1.1.5 The basic dynamic wind pressure at different heights for different zones shall be taken from the IS 875 (Part 3) 1987 with latest amendments.
- 1.1.6 The basic wind velocity for the site is to be taken from the IS 875 (Part 3)1987 with latest amendments. **As Communication towers are categorized as important structures in IS: 875 (Part 3) 1987, Risk factor K1 is to be considered corresponding to 100 years of mean design life of tower.** (All relevant certification must be given along with technical bid)
- 1.1.7 Loading effect due to antenna and various accessories as indicated at elsewhere in the document will be taken into consideration.
- 1.1.8 Loading effect of seismic forces as per IS 1893 (with latest amendments) and cyclonic winds and conditions of frost etc. if any, may also be taken into consideration.
- 1.1.9 FOUNDATIONS
- a. Bidder is advised to inspect the tower site and acquaint himself with the local terrain & site conditions, soil conditions, nature of sub soil, water table and its seasonal variations etc. and make such local enquiries, as may be necessary for any data required by him, before quoting. No extra charges for levelling and retaining walls etc. shall be payable by the department in addition to the cost quoted in the tender. Foundation design shall also be approved by the Registered / govt. approved structural engineer.
  - b. The cement, sand and concrete used shall be of best grade and the concrete shall preferably be mixed in a mechanical mixer in the standard ratio 1:2:4. The foundation shall be watered and cured for at least 14 days and the erection of the tower shall be commenced only after the foundations are thoroughly cured.



#### 1.1.10 VERTICALITY, DEFLECTION & TWIST UNDER STILL AIR CONDITION:

- a. The tower shall be vertical after erection and no staining shall be permitted to achieve this. This erection tolerance of verticality shall be within 25 mm every 9100 mm. Deflection in any particular section beyond the above limit is not permissible.
- b. The angular twist shall not exceed +/- 0.5 degree from the normal plane of tower face.
- c. UNDER MAXIMUM WIND LOAD CONDITION: The average slope of the axis of the antenna support column shall not depart from the vertical by more than 1 degree under maximum wind load conditions. The successful Bidder will have to satisfy that verticality is maintained at not more than 1 degree at the maximum wind load conditions.
- d. The following additional technical parameters/ specifications are to be considered for design of tower:
  - (i) DEAD WEIGHT: Dead weight of the tower plus & load proposed in this tender plus provision of additional load of 100kg. in future, wind load and resistivity against earthquake etc.
  - (ii) WIND SPEED: Operational= 180Km/hr and Survival= 225Km/hr

Note: The bidders have to submit a notarized affidavit on stamp paper that they shall maintain the degrees of verticality, deflection & twist mentioned in above points in technical bid and after erection they have to submit a notarized affidavit on stamp paper that they have complied the same for their payment purpose.

#### 1.1.11 PROTECTION AGAINST LIGHTNING:

The tower shall be provided with a suitable designed complete system of lightening protection in accordance with the provision of relevant IS specifications with latest amendments including necessary earthing based on the specific resistivity of the soil & sub-soil and water level. **(All relevant certification must be given at the time of installation)**

#### 1.1.12 PAINTING:

The tower shall be given two or more coats of paint in additional to primer coats after erection. The tower shall be painted to have equal alternate bands of international orange and white colours with top and bottom bands painted in orange as per civil aviation regulations.

#### 1.1.13 EARTHING:

- a. All the tower legs shall be grounded properly, following the standard practice of earthing of such structures in level ground and mountainous regions.
- b. The tower earthing shall be done as per the relevant standards and standard industry practices. The earth resistance of the tower shall be less than 2 ohm.

#### 1.1.14 FACILITIES ON TOWER:

- a. PLATFORM (i) Provision of platform for access to antenna and cable at different level with suitable safety provisions. Platform flooring will consist of chequered plate conforming to latest IS as applicable with latest amendments, and shall be designed as to take stationary and moving load of 4 persons plus equipments weighing about 100 Kg. At each platform "Toe-plates" has a form of protection against accidental

dislodging of small tools, are to be provided. Platform must be outside of tower at 50 feet, 100 feet and one on the top of the tower and must be 3feet in width.

- (ii) An outer ladder of width not less than 300 mm starting from suitable level of tower from the ground and going up to the top with openings at all the platforms shall be provided. The ladder shall be hopped type for safety of the climbing personnel. The ladder shall be provided with fall prevention safety system for ensuring safety against free fall of climbing personnel. Rungs of the ladder shall be clear of any obstructions to the climber, equally spaced by a distance of not less than 250 mm.
- b. AVIATION LIGHTS & POWER CABLES Complete blinking aviation light with Twilight switch system along with cables will be provided with fitting and commissioning. Aviation warning lamps shall conform to ICAO regulation. **(All relevant certification must be given at the time of installation)**
- c. LIGHTNING ARRESTOR: This system will be provided confirming to relevant ISS/ Electric rules (test certificate be provided). Lightning arrestor at the top of the tower. Lighting rod made of copper, as per IS standards with a spike be provided on one end and threading on the other, shall be provided on the top of the tower. The lightning spike shall be connected to ring earth directly by 50X3 mm Copper strip with suitable lugs at both end and suitably tightened along the tower leg. **(All relevant certification must be given at the time of installation)**
- d. PULLEY SYSTEM: All arrangements including hand operated Welt pulley system of rotating fixed drum to lift 25-50 Kg. load, will be provided along with wire rope. This lifting system will be Wasted A-am ground. This complete system will be erected and commissioned by the bidder.

- Note:** - 1. Successful bidders have to report every step of installation to the committee, which will be constituted by this directorate for this purpose and directorate also.
- 2. After erection the bidders have to submit a notarized affidavit on stamp paper that they have complied the all IS Standards (details of each IS standard) in installation of the Tower as per the tender specifications at the time of bill submission.
  - 3. Bidders are advised to visit at P. S. Tunga/Kotkhawda Jaipur Commissionerate where towers of 150 feet have been installed for sample purpose.
  - 4. Bidders are to indicate the weight of the tower, excavation and foundation volumes and quote prices on complete tower basis including supply and erection.

## **SPECIFICATION OF 100 FEET SELF-SUPPORTING TOWER**

The following sections contain Generic Requirement for the said Tower for use in Rajasthan Police Telecommunication Network. The towers shall be four legged with a square base and shall be able to support a load of 250Kg.

Technical specifications for self-supporting communication towers are as under:

### 1.0 GENERAL:

1.0.1 **Bidder shall furnish along with technical bid, all relevant technical information to substantiate that the offered tower complies with the given specifications.**

1.0.2 The tower and accessories must be warranted to be free from defects in material and workmanship for lifetime on all manufactured items (applicable to steel structural elements).

1.0.3 The towers shall be designed and constructed /erected to be suitable for the described antenna loading, weather conditions, soil conditions and conform to the given certifications.

1.0.4 All tower elements shall be angular and hot dip galvanized after fabrication.

1.0.5 All tower accessories like antenna mounts, platforms, cable trays, safety climbing ladder etc. should also be hot dip galvanized.

### 1.0.6 **Nuts, Bolts & Washers:**

All fasteners, plain washer, Nuts, Bolts & Washers should be hot dip galvanized as per applicable relevant **IS** standards.

1.0.7 The tower shall be erected such that one leg is directed towards true north.

1.0.8 The foundation of the tower shall be designed based on the soil testing reports and foundation design shall also be approved by registered / Govt. approved structural engineer.

1.0.9 Tower shall be four legged, angular, square self-supporting.

1.0.10 The Tower must be supplied against CSIR-SERC/IIT approved Design and drawing. Design and Drawing must be submitted along with the tender.

### 1.1 **The following specifications are the requirements for self-supporting for 100 feet tower & accessories.**

The specifications cover the design, fabrication, supply and erection of self-supporting steel communication tower and accessories complete with foundation work, earthing devices, pipe of suitable size and length for mounting antenna, solid state Aviation Obstruction Lights with cabling, ladders for climbing, Cable Racks for supporting cables and platforms.

1.1.1 Tower members shall be of structural steel conforming to **IS 2062 Grade 'A'** as applicable with latest amendments. **(All relevant certification must be given at the time of installation)**

1.1.2 All steel used shall be **hot dip** galvanized, conforming to **IS 4759** specifications for tower members, fasteners and for washers with latest amendments. Spray galvanizing may be permitted wherever hot dip galvanization is not possible with prior approval of purchaser. **(All relevant certification must be given at the time of installation)**

- 1.1.3 Assembly of tower members and other structures on tower shall be fitted by means of nuts and bolts of Grade 5.6 or better and spring washer. Riveting and welding may be done if the design demands and it shall conform to relevant IS specifications with latest amendments. Minimum thickness of members should not be less than 6mm unless specified in design approval. **(All relevant certification must be given at the time of installation)**
- 1.1.4 The quality of steel used for nuts, bolts, washers etc. should conform to relevant IS specifications with latest amendments and mechanical properties as per relevant IS specifications with latest amendments. Dimensionally also, it shall conform to relevant IS specifications with latest amendments. The heads being forged out of solid, truly concentric with the shank and shall be perfectly straight. All bolts shall have hexagonal heads and nuts. The bolts shall be treated with standard threads to take the full depth of the nuts. All nuts shall fit hand tight to the bolts. No appreciable fillet shall exist at the point where shank of the bolt connects to the head. Washers shall be provided to all bolts and nuts. The tender shall include sufficient spare bolts and nuts to compensate for loss in the field during erection. The cost of bolts and nuts shall be included in the cost of tower. **(All relevant certification must be given at the time of installation)**
- 1.1.5 The basic dynamic wind pressure at different heights for different zones shall be taken from the IS 875 (Part 3) 1987 with latest amendments.
- 1.1.6 The basic wind velocity for the site is to be taken from the IS 875 (Part 3)1987 with latest amendments. **As Communication towers are categorized as important structures in IS: 875 (Part 3) 1987, Risk factor K1 is to be considered corresponding to 100 years of mean design life of tower.** (All relevant certification must be given along with technical bid)
- 1.1.7 Loading effect due to antenna and various accessories as indicated at elsewhere in the document will be taken into consideration.
- 1.1.8 Loading effect of seismic forces as per IS 1893 (with latest amendments) and cyclonic winds and conditions of frost etc. if any, may also be taken into consideration.
- 1.1.9 FOUNDATIONS
- a. Bidder is advised to inspect the tower site and acquaint himself with the local terrain & site conditions, soil conditions, nature of sub soil, water table and its seasonal variations etc. and make such local enquiries, as may be necessary for any data required by him, before quoting. No extra charges for leveling and retaining walls etc. shall be payable by the department in addition to the cost quoted in the tender. Foundation design shall also be approved by the Registered / govt. approved structural engineer.
  - b. The cement, sand and concrete used shall be of best grade and the concrete shall preferably be mixed in a mechanical mixer in the standard ratio 1:2:4. The foundation shall be watered and cured for at least 14 days and the erection of the tower shall be commenced only after the foundations are thoroughly cured.

#### 1.1.10 VERTICALITY, DEFLECTION & TWIST UNDER STILL AIR CONDITION:

- a. The tower shall be vertical after erection and no staining shall be permitted to achieve this. This erection tolerance of verticality shall be within 25 mm every 9100 mm. Deflection in any particular section beyond the above limit is not permissible.
- b. The angular twist shall not exceed +/- 0.5 degree from the normal plane of tower face.
- c. UNDER MAXIMUM WIND LOAD CONDITION: The average slope of the axis of the antenna support column shall not depart from the vertical by more than 1 degree under maximum wind load conditions. The successful Bidder will have to satisfy that verticality is maintained at not more than 1 degree at the maximum wind load conditions.
- d. The following additional technical parameters/ specifications are to be considered for design of tower:
  - (i) DEAD WEIGHT: Dead weight of the tower plus & load proposed in this tender plus provision of additional load of 100kg. in future, wind load and resistivity against earthquake etc.
  - (ii) WIND SPEED: Operational= 180Km/hr and Survival= 225Km/hr

Note: The bidders have to submit a notarized affidavit on stamp paper that they shall maintain the degrees of verticality, deflection & twist mentioned in above points in technical bid and after erection they have to submit a notarized affidavit on stamp paper that they have complied the same for their payment purpose.

#### 1.1.11 PROTECTION AGAINST LIGHTNING:

The tower shall be provided with a suitable designed complete system of lightening protection in accordance with the provision of relevant IS specifications with latest amendments including necessary earthing based on the specific resistivity of the soil & sub-soil and water level. **(All relevant certification must be given at the time of installation)**

#### 1.1.12 PAINTING:

The tower shall be given two or more coats of paint in additional to primer coats after erection. The tower shall be painted to have equal alternate bands of international orange and white colours with top and bottom bands painted in orange as per civil aviation regulations.

#### 1.1.13 EARTHING:

- a. All the tower legs shall be grounded properly, following the standard practice of earthing of such structures in level ground and mountainous regions.
- b. The tower earthing shall be done as per the relevant standards and standard industry practices. The earth resistance of the tower shall be less than 2 ohm.

#### 1.1.14 FACILITIES ON TOWER:

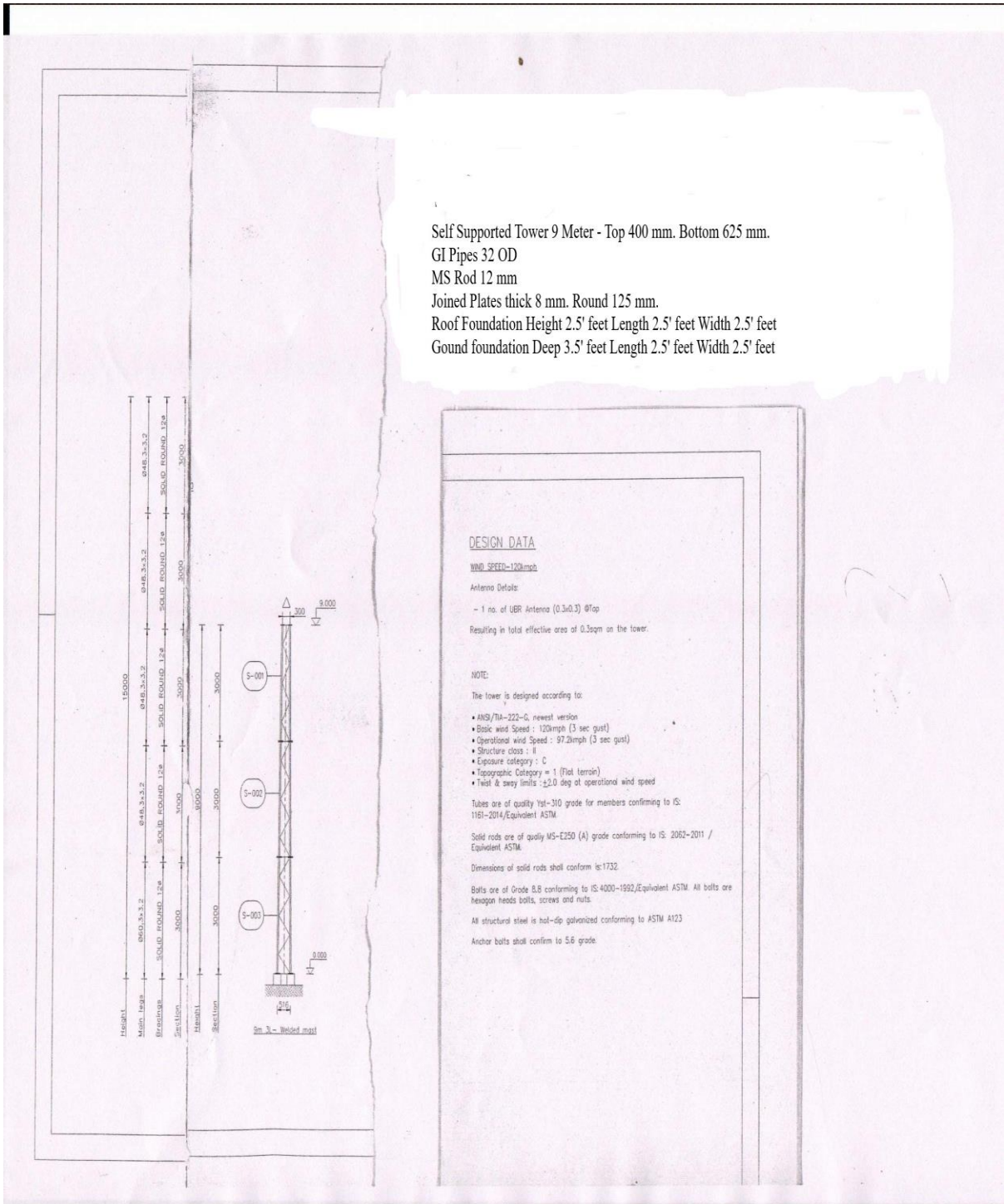
- a. PLATFORM (i) Provision of platform for access to antenna and cable at different level with suitable safety provisions. Platform flooring will consist of chequered plate conforming to latest IS as applicable with latest amendments, and shall be designed as to take stationary and moving load of 4 persons plus equipments weighing about 100 Kg. At each platform "Toe-plates" has a form of protection against accidental

dislodging of small tools, are to be provided. Platform must be outside of tower at 50 feet and one on the top of the tower and must be 3feet in width.

- (ii) An outer ladder of width not less than 300 mm starting from suitable level of tower from the ground and going up to the top with openings at all the platforms shall be provided. The ladder shall be hopped type for safety of the climbing personnel. The ladder shall be provided with fall prevention safety system for ensuring safety against free fall of climbing personnel. Rungs of the ladder shall be clear of any obstructions to the climber, equally spaced by a distance of not less than 250 mm.
- b. AVIATION LIGHTS & POWER CABLES Complete blinking aviation light with Twilight switch system along with cables will be provided with fitting and commissioning. Aviation warning lamps shall conform to ICAO regulation. **(All relevant certification must be given at the time of installation)**
- c. LIGHTNING ARRESTOR: This system will be provided conforming to relevant ISS/ Electric rules (test certificate be provided). Lightning arrestor at the top of the tower. Lighting rod made of copper, as per IS standards with a spike be provided on one end and threading on the other, shall be provided on the top of the tower. The lightning spike shall be connected to ring earth directly by 50X3 mm Copper strip with suitable lugs at both end and suitably tightened along the tower leg. **(All relevant certification must be given at the time of installation)**
- d. PULLEY SYSTEM: All arrangements including hand operated Welt pulley system of rotating fixed drum to lift 25-50 Kg. load, will be provided along with wire rope. This lifting system will be Wasted A-am ground. This complete system will be erected and commissioned by the bidder.

- Note:** -
1. Successful bidders have to report every step of installation to the committee, which will be constituted by this directorate for this purpose and directorate also.
  2. After erection the bidders have to submit a notarized affidavit on stamp paper that they have complied the all IS Standards (details of each IS standard) in installation of the Tower as per the tender specifications at the time of bill submission.
  3. Bidders are advised to visit at P. S. Sambhar, Jaipur rural/Repeater station, Tonk where towers of 100 feet have been installed for sample purpose.
  4. Bidders are to indicate the weight of the tower, excavation and foundation volumes and quote prices on complete tower basis including supply and erection.

## SPECIFICATION OF 9 Meter SELF-SUPPORTED TRIANGULAR MAST



Self Supported Tower 9 Meter - Top 400 mm. Bottom 625 mm.  
 GI Pipes 32 OD  
 MS Rod 12 mm  
 Joined Plates thick 8 mm. Round 125 mm.  
 Roof Foundation Height 2.5' feet Length 2.5' feet Width 2.5' feet  
 Gound foundation Deep 3.5' feet Length 2.5' feet Width 2.5' feet

Bidders are advised to visit at Repeater Mansa Mata/PS Fatehpur Kotwali Sikar where Mast of 40/50 feet have been installed for sample purpose.

**OFFICE OF POLICE TELECOMMUNICATION KOTA CITY DETAIL OF STATIC STATION**

S. no.	Name Of Static Station	Position	Building Hight	Tower/ Mast Hight	Status (Good/Bad/Re quirement for Replacement)	Longitude	Latitude	Remarks
1.	CITY CONTROL	Guys Supported	20 Feet	60 feet	Good	75.864752	25.2138158	Direct
2.	ADF	Self-supported	10 Feet	100 feet	Good	75.8662602	25.188	Direct
3.	TRAFFIC CONTROL	Self-supported	20 Feet	150 feet	Good	75.83467	25.1656551	Direct
4.	REPEATER	Self-supported	20 Feet	150 feet	Good	75.83467	25.1656551	Direct
5.	ABHAY COMMAND	On Roof	20 Feet	60 Feet	Good	75.864752	25.2138158	Direct
6.	COLLECTOR	On Roof	20 Feet	20 feet	Good	75.8564819	25.2020594	Direct
7.	ADM CILING	On Roof	20 Feet	20 feet	Good	75.8564819	25.2020594	Direct
8.	IGP Office	On Roof	20 Feet	20 feet	Good	75.835919	25.165568	Direct
9.	S.P City Office	On Roof	15 Feet	20 feet	Good	75.8662602	25.188	Direct
10.	S.P KOTA (R)	On Roof	15 Feet	20 feet	Good	75.8564819	25.2020594	Direct
11.	S.P CID ZONE	On Roof	15 Feet	20 feet	Good	75.8564819	25.2020594	Direct
12.	S.P Residance	On Roof	15 Feet	20 feet	Good	75.8662602	25.188	Direct
13.	Addl. S.P CITY(O)	On Roof	15 Feet	20 feet	Good	75.8662602	25.188	Direct
14.	Addl. S.P HQR (O)	On Roof	15 Feet	20 feet	Good	75.8662602	25.188	Direct
15.	Addl. S.P MAHILA CELL((O)	On Roof	15 Feet	20 feet	Good	75.8662602	25.188	Direct
16.	Addl. S.P KOTA (R)	On Roof	15 Feet	20 feet	Good	75.8564819	25.2020594	Direct
17.	DSB	On Roof	15 Feet	20 feet	Good	75.8662602	25.188	Direct
18.	IT OFFICE	On Roof	15 Feet	20 Feet	Good	75.8539858	25.1695154	Direct
19.	2 nd RAC	On Roof	15 Feet	20 Feet	Good	75.8264	25.1498	Direct
20.	CO 1 <sup>st</sup>	On Roof	15 Feet	20 Feet	Good	75.835919	25.165568	Direct
21.	CO 2 <sup>nd</sup>	On Roof	15 Feet	20 Feet	Good	75.8564819	25.2020594	Direct
22.	CO 3 <sup>rd</sup>	On Roof	15 Feet	20 Feet	Good	75.8424	25.1863	Direct
23.	CO 4 <sup>th</sup>	On Roof	15 Feet	20 Feet	Good	75.874834	25.176	Direct
24.	CO 5 <sup>th</sup>	On Roof	15 Feet	20 Feet	Good	75.857752	25.113162	Direct
25.	CO 6 <sup>th</sup>	On Roof	15 Feet	20 Feet	Good	75.83467	25.1656551	Direct
26.	DYSP SC/ST CELL	On Roof	15 Feet	20 Feet	Good	75.8662602	25.188	Direct
27.	DYSP MAHILA CELL	On Roof	15 Feet	20 Feet	Good	75.8662602	25.188	Direct
28.	DYSP ABHAY COMMAND CENTER	On Roof	15 Feet	20 Feet	Good	75.864752	25.2138158	Direct
29.	R I Office	On Roof	15 Feet	20 Feet	Good	75.8723	25.1842	Direct



30.	PS Dadari	On Roof	15 Feet	20 Feet	Good	75.827248	25.155169	Direct
31.	PS Gumanoura	On Roof	15 Feet	20 Feet	Good	75.845322	25.162998	Direct
32.	PS Kishorpura	On Roof	15 Feet	20 Feet	Good	75.78727	25.9124265	Direct
33.	PS Bhimganjmandi	On Roof	15 Feet	20 Feet	Good	75.87590	25.220078	Direct
34.	PS Kunhari	On Roof	15 Feet	20Feet	Good	75.83118	25.21525	Direct
35.	PS Nayapura	On Roof	15 Feet	60 Feet	Good	75.8562924	25.2044064	Direct
36.	PS Railway colony	On Roof	15 Feet	20 Feet	Good	75.92905	25.23239	Direct
37.	PS Kaithunipol	On Roof	15 Feet	20 Feet	Good	75.831461	25.175924	Direct
38.	PS Makabra	On Roof	15 Feet	20 Feet	Good	75.8365565	25.180867	Direct
39.	PS Kothwali	On Roof	15 Feet	20 Feet	Good	75.8424	25.1863	Direct
40.	PS Mahaveer nagar	On Roof	15 Feet	20 Feet	Good	75.837657	25.137239	Direct
41.	PS Udhog nagar	On Roof	15 Feet	20 Feet	Good	75.875537	25.131227	Direct
42.	PS Vigyan nagar	On Roof	15 Feet	20 Feet	Good	75.860360	25.154447	Direct
43.	PS Mahila thana	On Roof	15 Feet	40 Feet	Good	75.835793	25.175327	Direct
44.	PS Jawahar nagar	On Roof	15 Feet	20 Feet	Good	75.838500	25.155752	Direct
45.	PS Annatpura	On Roof	15 Feet	20 Feet	Good	75.857752	25.113162	Direct
46.	PS Borkhera	On Roof	15 Feet	20 Feet	Good	75.874834	25.176	Direct
47.	PS R K Puram	On Roof	15 Feet	20 Feet	Good	75.815899	25.130644	Direct
48.	PS Yatayat thana	On Roof	15 Feet	5 Feet	Good	75.83467	25.1656551	Direct
49.	PS Ranpur	On Roof	15 Feet	32 Feet	Good	75.86211	25.083119	Direct
50.	OP Chhawani	On Roof	15 Feet	20 Feet	Good	75.8589805	25.1725894	Direct
51.	OP Surajpol	On Roof	15 Feet	20 Feet	Good	75.861752	25.2138156	Direct
52.	OP Badgaon	On Roof	15 Feet	32 feet	Good	75.7880184	25.8397985	Direct
53.	OP Nayapura Bus Stand	On Roof	15 Feet	20 Feet	Good	75.8566038	25.2012073	Direct
54.	OP Ghantaghar	On Roof	15 Feet	20 Feet	Good	75.8382116	25.181635	Direct
55.	OP Ladpura	On Roof	15 Feet	20 Feet	Good	75.843945	25.1888413	Direct
56.	OP Nayadarwaja	On Roof	15 Feet	20 Feet	Good	75.8407183	25.1796105	Direct
57.	OP Patanpole	On Roof	15 Feet	20 Feet	Good	75.8348137	25.1782495	Direct

58.	OP jagpura	On Roof	15 Feet	32 Feet	Good	75.8683826	25.0557868	Direct
59.	OP Kishor Pura	On Roof	15 Feet	20 Feet	Good	75.8279745 9	25.1690161 9	Direct
60.	OP Collectorate	On Roof	15 Feet		Good	75.8564819	25.2020594	Direct
61.	OP Indra Gandhi Nagar	On Roof	15 Feet	20 Feet	Good	75.8845297	25.1423434	Direct
62.	OP Tippan	On Roof	15 Feet	20 Feet	Good	75.8398685	25.1778764	Direct
63.	OP Bajrang Nagar	On Roof	15 Feet	20 Feet	Good	75.8629042	25.1805298	Direct
64.	OP Kotri	On Roof	15 Feet	10 feet	Good	75.8495782	25.1766113	Direct
65.	OP Borabas	On Roof	15 Feet	32 Feet	Good	75.694986	25.0219049	Direct
66.	OP Tipta	On Roof	15 Feet	20 Feet	Good	75.8330783	25.1757931	Direct
67.	OP Indra Vihar	On Roof	15 Feet	20 Feet	Good	75.8454065	25.1431522	Direct
68.	OP Rangwari	On Roof	15 Feet	20 Feet	Good	75.8451480	25.1250146	Direct
69.	OP MBS	On Roof	15 Feet	20 Feet	Good	75.8647527	25.2138156	Direct
70.	OP Bhamshah Mandi	On Roof	15 Feet	20 Feet	Good	75.8780014	25.1202997	Direct
71.	OP Talwandi	On Roof	15 Feet	20 Feet	Good	75.8406988	25.1467143	Direct
72.	OP Prem Nagar	On Roof	15 Feet	20 Feet	Good	75.875181	25.1380591	Direct
73.	OP New medical collage	On Roof	15 Feet	20 Feet	Good	75.8310018	25.11973	Direct
74.	OP Keshav pura	On Roof	15 Feet	20 Feet	Good	75.835238	25.1436159	Direct
75.	OP New bus stand	On Roof	15 Feet	20 Feet	Good	75.8641	25.1626	Direct

**Total No. of Static Stations- 75**

**Total No. of Mobile Stations- 108**

**DMR TIER-III DISTRICT BHARATPUR (CITY/RURAL)**

S. NO.	NAME'S OF STATIC STATION	BUILDING HEIGHT	TOWER/MAST HEIGHT	LONGITUDE	LATITUDE	Remark
1	IGP RANGE OFFICE BHARATPUR	24 FT	10 FT	77°30'35"E	27°12'32"N	
2	SP OFFICE BHARATPUR	25 FT	10 FT	75°46'55"E	26°57'39"N	
3	SP RESIDENCE BHARATPUR	15 FT	10 FT	75°46'55"E	26°57'39"N	
4	ADDL SP HQR BHARATPUR	25 FT	08 FT	75°46'55"E	26°57'39"N	
5	ADDL SP CID CB ZONE BHARATPUR	20FT	05 FT	77°30'12"E	27°14'40"N	
6	ADDL SP WEIR	15 FT	10 FT	77°10'10"E	27°01'01"N	
7	ADDL SP CID SB ZONE BHARATPUR	25 FT	5 FT	77°31'30"E	27°14'02"N	
8	CO BAYANA	10 FT	05 FT	77°17'24"E	26°54'25"N	
9	CONTROL ROOM BHARATPUR	22 FT	<b>100 FT TOWER</b>	77°33'39"E	27°12'44"N	
10	POLICE LINE BHARATPUR	10 FT	05 FT	77°33'39"E	27°12'44"N	
11	PS KOTWALI BHARATPUR	20 FT	05 FT	77°29'16"E	27°13'00"N	
12	PS UDHYOGNAGAR BHARATPUR	20 FT	15 FT	77°30'12"E	27°14'40"N	
13	PS ATALBANDH BHARATPUR	20 FT	10 FT	77°28'40"E	27°12'42"N	
14	PS MATURAGATE BHARATPUR	20 FT	05 FT	77°30'10"E	27°12'52"N	
15	PS CHIKSANA	20 FT	<b>32 FT MAST</b>	77°45'95"E	27°20'18"N	
16	PS MAHILA THANA	12 FT	10 FT	75°46'55"E	26°57'39"N	
17	PS GRP BHARATPUR	12FT	10 FT	77°29'13"E	27°24'09"N	
18	PS NADBAI	12 FT	<b>100 FT TOWER</b>	77°12'02"E	27°12'55"N	
19	PS SEWER	12 FT	15 FT	77°27'11"E	27°11'43"N	
20	PS BHUSAWAR	20 FT	<b>100 FT TOWER</b>	77°03'29"E	27°02'13"N	
21	PS HALENA	20 FT	<b>60 FT</b>	77°09'28"E	27°04'44"N	
22	PS WEIR	20 FT	20 FT	77°10'10"E	27°01'01"N	
23	PS BAYANA	10 FT	<b>100 FT TOWER</b>	77°17'24"E	27°54'25"N	
24	PS GARIBAJNA	10 FT	<b>60 FT</b>	77°25'41"E	26°48'49"N	
25	PS ROOPWAS	20 FT	<b>32 FT MAST</b>	77°35'45"E	26°59'41"N	
26	PS UCHCHAIN	20 FT	<b>125 FT TOWER</b>	77°24'45"E	27°06'06"N	
27	PS RUDAWAL	10 FT	20 FT	77°25'33"E	26°57'52"N	
28	I/C TRAFIC	20 FT	10 FT	77°30'35"E	27°12'32"N	
29	PS LAKHANPUR	20 FT	<b>32 FT MAST</b>	77°27'09"E	27°05'07"N	
30	OP RBM HOSPITAL	20 FT	05 FT	77°31'30"E	27°14'02"N	
31	OP KUMHER GATE	10 FT	10 FT	77°29'00"E	27°13'07"N	
32	OP RAIL BHARATPUR	10 FT	10 FT	77°29'29"E	27°14'03"N	
33	OP ATALBANDH	10 FT	05 FT	77°29'30"E	27°12'36"N	
34	POLICE HELP DESK HEERADAS	07 FT	05 FT	77°29'32"E	27°12'38"N	
35	OP MATHURAGATE	10 FT	10 FT	77°30'03"E	27°13'02"N	
36	OP CHAUBURJA	10 FT	10 FT	77°29'46"E	27°13'04"N	
37	OP SARAS	10 FT	10 FT	75°46'55"E	26°57'39"N	
38	OP PIPLA	10 FT	20 FT	77°45'98"E	27°20'20"N	
39	OP UNCHANAGLA	10 FT	15 FT	77°34'51"E	27°09'15"N	
40	OP HAMARA PETROL PUMP	10 FT	10 FT	77°45'95"E	27°20'18"N	
41	OP DEHRA MOD	10 FT	10 FT	77°16'20"E	27°01'01"N	
42	OP BACHHAMDI	10 FT	15 FT	77°27'09"E	27°05'07"N	
43	OP TOWEN BAYANA	10 FT	05 FT	77°17'42"E	26°55'00"N	
44	OP BANTH BARAITHA	10 FT	10 FT	77°25'35"E	26°57'55"N	
45	OP KHERLI MOD	10 FT	10 FT	77°02'25"E	27°05'17"N	
46	OP TOWEN WEIR	10 FT	10 FT	77°10'10"E	27°01'01"N	
47	OP JHEEL KA BARA	10 FT	10 FT	77°17'42"E	26°55'00"N	

48	OP GHATOLI	10 FT	10 FT	77°39'44"E	27°58'11"N	
49	OP GAHNOLI MOD	10 FT	10 FT	77°30'47"E	27°03'21"N	
50	OP KHANWA	10 FT	10 FT	77°39'42"E	26°58'09"N	
51	OP KALSARA	10 FT	<b>32 FT MAST</b>	77°05'06"E	26°52'48"N	
52	OP KHERIYA MOD	10 FT	10 FT	77°25'34"E	26°57'54"N	

Total no. of Static Station – 52

Total no. of Mobile Station - 160

**DMR TIER-II DISTRICT DEEG**

S. NO.	NAME'S OF STATIC STATION	BUILDING HEIGHT	TOWER/MAST HEIGHT	LONGITUDE	LATITUDE	Remark
1	SP DEEG	10 FT	10 FT	77°18'23"E	27°27'54"N	
2	ADDL. SP DEEG	10 FT	05 FT	77°18'25"E	27°27'56"N	
3	CONTROL ROOM DEEG	25 FT	100 FT (PS SADAR DEEG)	77°18'25"E	27°27'56"N	
4	PS DEEG KOTWALI	10 FT	20 FT	77°19'34"E	27°23'43"N	
5	PS DEEG SADAR	20 FT	100 FT TOWER	77°18'25"E	27°27'56"N	
6	PS KHOH	20 FT	20 FT	77°29'93"E	27°51'96"N	
7	PS KUMHER	12 FT	32 FT MAST	77°22'44"E	27°18'47"N	
8	PS NAGAR	10 FT	60 FT	77°05'40"E	27°25'21"N	
9	PS SIKRI	20 FT	32 FT MAST	77°05'05"E	27°33'48"N	
10	PS KAMAN	20 FT	100 FT TOWER	77°15'51"E	27°39'55"N	
11	PS JURHARA	20 FT	60 FT	77°12'42"E	27°46'43"N	
12	PS PAHARI	10 FT	60 FT	77°05'21"E	27°42'29"N	
13	PS GOPALGARH	20 FT	60 FT	77°03'45"E	27°38'59"N	
14	PS KAITHWARA	20 FT	15 FT	77°04'55"E	27°33'53"N	
15	PS JANUTHAR	10 FT	10 FT	77°05'38"E	27°25'18"N	
16	OP BAHAJ	10 FT	10 FT	77°19'35"E	27°23'43"N	
17	OP SINSINI	12 FT	10 FT	77°29'54"E	27°36'49"N	
18	OP KONRER	12 FT	10 FT	77°18'26"E	27°27'57"N	
19	OP PUNCHHARI	10 FT	05 FT	77°18'27"E	27°57'58"N	
20	OP TODA	10 FT	10 FT	77°29'90"E	27°51'95"N	
21	OP BEDAM	10 FT	05 FT	77°21'32"E	27°45'93"N	
22	OP PASTA MOD	10 FT	10 FT	77°49'01"E	27°21'56"N	
23	OP DHAMARI MOD	10 FT	10 FT	77°49'01"E	27°21'56"N	
24	OP GUNSARA	10 FT	10 FT	77°18'25"E	27°27'56"N	
25	OP RARAH	10 FT	15 FT	77°33'23"E	27°19'15"N	
26	OP GULPARA	10 FT	05 FT	77°05'07"E	27°33'50"N	
27	OP SIKRI PHATAK	10 FT	05 FT	77°44'44"E	27°24'89"N	
28	OP TOWN KAMAN	10 FT	10 FT	77°20'11"E	27°41'32"N	
29	OP DHILAWATI	10 FT	10 FT	77°20'11"E	27°41'32"N	
30	OP GHATA	10 FT	05 FT	77°53'61"E	27°01'91"N	
31	OP SONOKHAR MOD	10 FT	05 FT	77°15'57"E	27°39'62"N	
32	OP NONERA	10 FT	10 FT	78°31'02"E	26°43'87"N	
33	OP KATHOL	10 FT	10 FT	77°49'01"E	27°21'56"N	
34	OP GHATMIKA	10 FT	05 FT	77°04'57"E	27°45'53"N	
35	OP AMROOKA	10 FT	05 FT	77°15'86"E	27°65'61"N	
36	OP JALUKI	10 FT	20 FT	76°57'17"E	27°27'29"N	

Total no. of Static Station – 36

Total no. of Mobile Station - 93

## CHAPTER-9

**Bill of Materials (BoM)****9.1 BOM (Bill of Material) for DMR TIER – III at Bharatpur District:**

Sl. No.	Requirement	Qty.
<b>Master site Equipment</b>		
1	Central mobile switching office/network controller equipment for open standard DMR TIER - III Trunked Radio system (1+1) working & hot standby comprising of necessary hardware & software with licenses.	01
2	Network Management System comprises of One Network Management Server (NMS) with hot standby and One Network Management Terminal (NMT), other hardware & software with licenses.	01
3	Text Message Server with 500 User Licenses	01
4	03 carrier (01 control channel & 04 RF Channel), Digital Open Standard DMR TIER - III TDMA Radio Trunking (400 Mhz.)	01
5	Antenna system, Tower top Amplifier, Coupler Equipment and Combining equipment with accessories for 03 carriers as per technical specifications	01
6	Digital Voice Recorder for All channels.	01
7	05 KVA UPS with Hot standby for Master site with 04 hours backup	01
8	7.5 KVA Diesel Generator for Master site	01
9	05 star inverter type split AC of 02 Ton capacity with redundancy	01
<b>Control room equipment</b>		
1	AVLS server with 100 user Licenses	01
2	Dispatch Consoles - Secured Console (AES Algorithm), consisting of Console Interface with LCD 23 inch or better Monitor - 1, Voice Processing Module – 1 (for patching DMR TIER - III Audio), foot switch, desk mic, headset, speaker etc.	01
3	5 KVA UPS with Hot standby with 04 hours backup	01
4	Microwave radio link (1+1 hot standby) in Licensed band	02
5	05 star inverter type split AC of 02 Ton capacity with redundancy	01
<b>Repeater/Base Station Equipment</b>		
1	03 carrier (01 control channel & 04 RF channel), Digital Open Standard DMR TIER - III TDMA Radio Trunking (400 Mhz.) with 03 carrier Antenna system for (400 MHz) for other than master site.	02
2	Microwave radio link (1+1 hot standby) in Licensed band	02
3	05 star inverter type split AC of 02 Ton capacity with redundancy	02
4	Site Controllers with redundancy at each site	02
5	Site Routers with redundancy at each site	02
6	Antenna system, Tower top Amplifier, Coupler Equipment and Combining equipment with accessories for 03 carriers as per technical specifications	02
7	7.5 KVA Diesel Generator for 02 sites	02
8	5 KVA UPS with 4 hours backup for 02 sites with hot standby	02

9	Rodent Repellent	02
10	Surge and Lightening protection with necessary earthing	02
<b>Vehicle Mounted Radio</b>		
1	25-Watt (400 MHz Band) DMR TIER - III Digital Mobile radio with AES 256 encryption with standard accessories including GPS, DTMF Microphone with Key Pad and operating manual	160
2	400 MHz branded 3 dB gain antenna with 3m RG58 cable and connector (RFI/DB spectra/Comtelco/Telewave/Andrew) including mounting clamp	200
<b>Static Radio</b>		
1	25-Watt (400 MHz Band) DMR TIER - III Digital Mobile Radio, with AES 256 encryption with standard accessories including DTMF microphone with Key Pad and operating manual	90
2	400 MHz branded 6dB Antenna (RFI/DB Spectra/Comtelco/Telewave/Andrew/ Diamond) 30 mtrs. LDF (super flexible) standard Cable with standard and suitable connectors	100
3	12 volts/15 amps SMPS power supply cum battery charger	90
<b>Portable Radio (Walkie Talkie) with full key pad</b>		
1	3-Watt or better (400 MHz Band) DMR TIER - III Handheld Radio, with AES 256 encryption with full keypad and display, IP 67 compliant, GPS with standard accessories (Helical antenna, High capacity/li-ion BIS approved battery, capacity 2000 mAH or higher with belt clip, Single unit Desktop Rapid Charger)	200
2	High capacity/li-ion BIS approved battery, capacity 2000 mAH or higher with belt clip (Spare battery)	50
3	Helical antenna	50
4	Single unit Desktop Rapid Charger	50
5	Multiunit rapid charger to charge 6 batteries at a time	04
<b>Programming kits and service manual etc.</b>		
1	Programming kits (Desktop computer) for Mobile/Base station set (programming interface cable, radio test jigs, cables & connectors)	02
2	Portable Programming kit (Notebook/Laptop) for Hand held Radios and Repeater (programming interface cable, radio test jigs, cables & connectors)	02
3	Technical and service manual for entire system (Dossier) project handbook and soft copy	02
4	150 feet self-supported tower at Bayana, Bharatpur	01
5	9 Mtr. self-supported triangular mast	18
6	LED TV 43" full HD for GPS Location	02
7	Multi-Function Printer	01
<b>Testing Equipment &amp; Tools</b>		
1	Installation & Commissioning including site preparation (Electric work, earthing, ceiling/flooring/Doors and windows & required civil work and furniture at each site.	01
2	Training for DMR TIER - III for operation and maintenance as per tender specification	01
3	Any other hardware (Equipment, Module, subsystem cable, connectors, Power supply etc.) software or services those are not covered by this schedule of requirement & are essential for implementation & full functioning of the system. <b>Vendors are requested to attach detailed list of such deliverables with make, model, quantity &amp; specification.</b>	01

4	The bidder will provide Internet lease line connection at feasible site of required capacity in consultation with the department.	01
5	Integration with Abhay Command & Control centre, District Bharatpur	01

## 9.2 BOM (Bill of Material) for DMR TIER – III at Kota City:

Sl. No.	Requirement	Qty.
<b>Master site Equipment</b>		
1	Central mobile switching office/network controller equipment for open standard DMR TIER - III Trunked Radio system (1+1) working & hot standby comprising of necessary hardware & software with licenses.	01
2	Network Management System comprises of One Network Management Server (NMS) with hot standby and One Network Management Terminal (NMT), other hardware & software with licenses.	01
3	Text Message Server with 500 User Licenses	01
4	03 carrier (01 control channel & 04 RF Channel), Digital Open Standard DMR TIER - III TDMA Radio Trunking (400 Mhz.)	01
5	Antenna system, Tower top Amplifier, Coupler Equipment and Combining equipment with accessories for 03 carriers as per technical specifications	01
6	Digital Voice Recorder for All channels.	01
7	05 KVA UPS with Hot standby for Master site with 04 hours backup	01
8	7.5 KVA Diesel Generator for Master site	01
9	05 star inverter type split AC of 02 Ton capacity with redundancy	01
<b>Control room equipment</b>		
1	AVLS server with 100 user Licenses	01
2	Dispatch Consoles - Secured Console (AES Algorithm), consisting of Console Interface with LCD 23 inch or better Monitor - 1, Voice Processing Module – 1 (for patching DMR TIER - III Audio), foot switch, desk mic, headset, speaker etc.	01
3	5 KVA UPS with Hot standby with 04 hours backup	01
4	Microwave radio link (1+1 hot standby) in Licensed band	02
5	05 star inverter type split AC of 02 Ton capacity with redundancy	01
<b>Repeater/Base Station Equipment</b>		
1	03 carrier (01 control channel & 04 RF channel), Digital Open Standard DMR TIER - III TDMA Radio Trunking (400 Mhz.) with 03 carrier Antenna system for (400 MHz) for other than master site.	02
2	Microwave radio link (1+1 hot standby) in Licensed band	02
3	05 star inverter type split AC of 02 Ton capacity with redundancy	02
4	Site Controllers with redundancy at each site	02
5	Site Routers with redundancy at each site	02
6	Antenna system, Tower top Amplifier, Coupler Equipment and Combining equipment with accessories for 03 carriers as per technical specifications	02
7	7.5 KVA Diesel Generator for 02 sites	02
8	5 KVA UPS with 4 hours backup for 02 sites with hot standby	02



9	Rodent Repellent	02
10	Surge and Lightening protection with necessary earthing	02
<b>Vehicle Mounted Radio</b>		
1	25-Watt (400 MHz Band) DMR TIER - III Digital Mobile radio with AES 256 encryption with standard accessories including GPS, DTMF Microphone with Key Pad and operating manual	160
2	400 MHz branded 3 dB gain antenna with 3m RG58 cable and connector (RFI/DB spectra/Comtelco/Telewave/Andrew) including mounting clamp	200
<b>Static Radio</b>		
1	25-Watt (400 MHz Band) DMR TIER - III Digital Mobile Radio, with AES 256 encryption with standard accessories including DTMF microphone with Key Pad and operating manual	100
2	400 MHz branded 6dB Antenna (RFI/DB Spectra/Comtelco/Telewave/Andrew/Diamond) 30 mtrs. LDF (super flexible) standard Cable with standard and suitable connectors	125
3	12 volts/15 amps SMPS power supply cum battery charger	100
<b>Portable Radio (Walkie Talkie) with full key pad</b>		
1	3-Watt or better (400 MHz Band) DMR TIER - III Handheld Radio, with AES 256 encryption with full keypad and display, IP 67 compliant, GPS with standard accessories (Helical antenna, High capacity/li-ion BIS approved battery, capacity 2000 mAH or higher with belt clip, Single unit Desktop Rapid Charger)	250
2	High capacity/li-ion BIS approved battery, capacity 2000 mAH or higher with belt clip (Spare battery)	50
3	Helical antenna	50
4	Single unit Desktop Rapid Charger	50
5	Multiunit rapid charger to charge 6 batteries at a time	04
<b>Programming kits and service manual etc.</b>		
1	Programming kits (Desktop computer) for Mobile/Base station set (programming interface cable, radio test jigs, cables & connectors)	02
2	Portable Programming kit (Notebook/Laptop) for Hand held Radios and Repeater (programming interface cable, radio test jigs, cables & connectors)	02
3	Technical and service manual for entire system (Dossier) project handbook and soft copy	02
4	150 feet self-supported tower at Kota City	01
5	9 Mtr. self-supported triangular mast	21
6	LED TV 43" full HD for GPS Location	02
7	Multi-Function Printer	01
<b>Testing Equipment &amp; Tools</b>		
1	Installation & Commissioning including site preparation (Electric work, earthing, ceiling/flooring/Doors and windows & required civil work and furniture at each site.	01
2	Training for DMR TIER - III for operation and maintenance as per tender specification	01
3	Any other hardware (Equipment, Module, subsystem cable, connectors, Power supply etc.) software or services those are not covered by this schedule of requirement & are essential for implementation & full functioning of the system. <b>Vendors are requested to attach detailed list of such deliverables with make, model, quantity &amp; specification.</b>	01

4	The bidder will provide Internet lease line connection at feasible site of required capacity in consultation with the department.	01
5	Integration with Abhay Command & Control centre, District Kota city	01

**Note : Rajasthan Police will provide the DTG/WOL for DMR TIER - III trunk system to successful bidder, the delivery schedule will start from the day of handing over DTG/WOL.**

*Any fittings or items which may not be specially mentioned in the BOM but which are necessary to be provided by the Supplier without any extra charge for completion of the work under this tender.*

**9.3 Optional Requirement:**

Sl. No.	Requirement	Qty
1	Bluetooth Head Set OEM/Sennheiser/Bose	01
2	Hands free (Wired Earplug)	01
3	Range Extender (Required device with accessories for coverage) for optimizing the coverage. Bidder to specify the options	01
4	Suitable Radio Communication Test Setup having all technical features of Base Station, Mobile, Static, handheld sets, and accessories etc. for DMR TIER - III Trunked Radio System with auto test and alignment facility.	01
5	Through Line Power meter, Field strength indicator, Megger or any other item essential for field testing.	01
6	Year wise AMC for seven years after warranty period.	01
7	Magnetic base vehicular antenna	01
8	Unified threat management (UTM) System for network security of the project	01

**Note: For commercial purpose optional items will not be considered, but it is mandatory to quote for optional items.**

#### 9.4 BOM (Bill of Material) for DMR TIER – II at District Deeg

S. no.	Name of Items	Qty.
1	VHF DMR Mobile/Static 20 Watt Set with accessories	185
2	VHF DMR Hand Held 02 Watt Set with accessories	115
3	VHF Digital Automatic Repeater based on DMR with accessories	3
4	60 Mtr. ½" LDF Low Loss Cable for Repeater station	2
5	30 Mtr. LDF Low Loss Cable for Base station	80
6	60 Mtr. LDF Low Loss Cable for Base station	5
7	GP Antenna 3 db or better gain for Base station	80
8	GP Antenna 6 db gain for Repeater	2
9	Vehicular Antenna 3 db or better gain for Mobiles	210
10	SMPS for Static stations	80
11	Bluetooth Device (OEM Make will be preferred)	10
12	Wired Hand free for Radio Sets	10
13	On Line UPS 2KVA	2
14	Air Conditioner 1.5 Ton 5 Star Inverter (Split)	5
15	Desktop Computer with accessories for GPS Location of Radio Sets	5
16	LED TV 55" full HD for GPS location	1
17	LED TV 43" full HD for GPS location	1
18	Multi-Function printer	1
19	Portable Programming Kit	2
20	Chemical Earthing	1
21	Installation & Commissioning and site Preparation (Civil/Electric Work at repeater/Control Stations/District Communication office)	1
22	Multi-Unit Charger (6 or more units)	5
23	150 feet Self Supported tower at PS Kaman	1
24	9 Mtr. self-supported Triangular mast	12
25	Additional Battery of Proposed Hand-held Set (OEM Make)	50
26	Additional Battery Charger of Proposed Hand-held Set (OEM Make)	50
27	Additional Helical Antenna of Proposed Hand-held Set (OEM Make)	50
28	Furniture	1
29	Renovation	1
30	Integration with Abhay Command Control Centre	1
31	Technical/Service Manual (Hard & Soft copy) (02 Nos. each for portable, base & repeater)	6
32	Training for DMR TIER - II for operation and maintenance as per tender specification	1

## Terms and Conditions

### 10.1 Payment Terms :

1. 30% of quoted price will be released after delivery of all hardware and other equipment (those items which do not required installation) required.
2. 40% of quoted price will be released after installation, commissioning and successful completion of user acceptance Test of full quantity of equipment.
3. 30% of quoted price will be released to the firm after successful operation and training (as per chapter 5.1) and go live declaration report by the technical committee.
4. Regarding integration with ACCC, API shall be provided by department. The firm will quote charges for integration in BoQ. If department fails to provide API to the successful bidder, the quoted amount for integration purpose by the bidder shall be deducted from the final payment.
5. If department provides API for integration during 1 year from Go live, the firm shall be bound to complete the integration task within 03 months at the rates quoted in the BoQ for the purpose and if the firm fails to complete the task, the performance security shall be forfeited.
6. No advance payment shall be made to successful bidder.

### 10.2 Deliverable &Termination of Contract:

1. Delivery: The Supplier shall supply the Hardware/software and other accessories at office of Additional Superintendent of Police, Telecommunications Jaipur City. Transportation charges will be borne by the bidder.
2. Delivery of material shall be made to the purchaser within 06 weeks from the issue of purchase order/work order with valid license by the purchaser. In case of any extension is sought by the bidder for delivery of material, he must submit his request in writing giving detailed reasons for delay. It is up to the purchaser to accept or reject the request. The Tender Inviting Authority will be the final authority to take the decision.
3. The Delivery of Hardware is not deemed to have been completed unless the entire project is accepted by the technical committee constituted by the purchaser.
4. The Supplier shall provide on-site Guarantee/Warranty for all goods/equipment supplied under the Contract period of 03 (Three) years and 05 years for self-supported Towers/Masts from the date of final acceptance of the System.
5. All the complaints lodged by the department must be attended within 4 hours and problems should be rectified as early as possible including replacement/repair of defective equipment otherwise penalty will be imposed as per SLA at Section VIII.
6. If the performance of any individual equipment or System fails to meet the contract specifications then the same shall be replaced by the Supplier free of cost during the term of the warranty/guarantee period.
7. The supplier shall provide necessary Software updates with free of cost during the warranty/guarantee period and also during the period of AMC.

8. During the term of warranty/guarantee the service/repair calls will have to be attended by the Supplier within 4hours from the time of such calls and rectify the problem as early as possible including replacement/repair of defective equipment otherwise penalty will be imposed as per SLA. The defective item/equipment of system and other Hardware should be repaired on the same day at Purchaser's location. In case of major defects requiring the defective card/item/equipment to be taken to the Supplier's workshop, it should be returned within 30 days duly repaired and an immediate substitute card/item/equipment will be provided by the Supplier for the smooth operation of the System. The to and fro transportation of the card/item/equipment will be the responsibility of Supplier.
9. Apart from the service/repair calls, the service engineer asked by the department will remain at the disposal for trouble shooting as per timings to be fixed by the purchaser. Beside the Supplier will visit the site once every fortnight to assess the service ability of the System and once in every month to carry out the Preventive Maintenance and diagnostics of the system during the Warranty Period by deploying software/hardware engineers.
10. Delays in attending the calls and or repairing the defective card/item/equipment software beyond time limit specified in this Clause, without providing the substitute, will attract penalties as per the SLA defined in the tender.
11. Delivery of the material should be made by the Bidder in accordance with the time schedule specified by the Purchaser. Delay by the Supplier in the performance of its Delivery or Service obligations shall render the Bidder is liable to imposition of Liquidated Damages in accordance with tender clause and thereafter, up on reaching the maximum deduction set out therein, to termination for default in accordance with Clause below accompanied by for feature of Security Deposit.
12. If the bidder fails to supply the material within the stipulated period, the Purchaser reserves the right to impose penalty and has right to forfeit the entire earnest money and also blacklist the company. Except in case the bidder is given extension in writing by the Procuring entity as defined in the tender document.
13. The bidder shall maintain minimum stock of spare parts required (As per form 13) at Bharatpur/Kota office for smooth running of the system during warranty and AMC period.
14. The bidder shall be responsible for providing the required software upgradation free of cost for all items from time to time for smooth running of the system.
15. After successful commissioning and installation of the system, the bidder will transparently share all the software, passwords and other required information with the department for smooth running of the system.

### **10.3 Material Breach:**

1. In the event that either Party believes that the other Party is in Material Breach of its obligations under this Agreement, such aggrieved Party shall notify the other party by giving one-months' notice for curing the Material Breach. In case the Material Breach continues, after the notice period, the Rajasthan Police Telecommunications Organization, as the case may be, will have the option to terminate the Agreement. Any notice served pursuant to this Clause shall give reasonable details of the Material Breach.
2. In the event that Implementation agency undergoes such a change of control, Rajasthan Police Telecommunications Organization may, as an alternative to termination, require full Performance Guarantee for the obligations of Implementation agency by a guarantor

acceptable to Rajasthan Police Telecommunications Organization or its nominated agencies. If such a guarantee is not furnished within 30 days of Rajasthan Police Telecommunications Organizations demand, the Rajasthan Police Telecommunications Organization may exercise its right to terminate this Agreement in accordance with this Clause by giving 15 days further written notice to the Implementation agency.

3. The termination provisions set out in this Clause shall apply mutatis to the SLA.
4. In case of premature termination of the contract due to the non-performance/violation of RFP/SLA conditions, Rajasthan Police Telecommunications Organization shall have rights to forfeit the Performance security guarantee of the implementation agency. Associated penalties will be imposed as per SLA and no further payment will be made in such circumstances. This termination will lead to the blacklisting of the firm and information in this regard would be circulated to State & Central Department of Information Technologies (DoITs) and other Departments of Government of Rajasthan. All the hardware, software and other associated items supplied by implementation agency; prior to the termination of the contract will be ceased by Rajasthan Police Telecommunications Organization and no claim of implementation agency will be entertained

#### **10.4 Intellectual Right of Property :**

All intellectual property rights for the work performed under this RFP as far as data is concerned shall i.e., with Rajasthan Police. This clause is applicable to all data in any form or format procured, processed, scanned or produced under this RFP by the successful bidder. The successful bidder shall not use such data for any other purpose during and after the term of contract. In no cases, any document provided by the department is taken out of the space provided to the successful bidder for scanning.

#### **10.5 Risk purchase clause :**

In case the successful bidder fails to execute the project as stipulated in the delivery schedule; Rajasthan Police reserves the right to procure the similar services from alternate sources at the risk, cost and responsibility of the successful bidder.

#### **10.6 Property and risk :**

1. The property and risk in the goods shall pass to the Competent Authority when they are delivered in accordance with the conditions of the agreement. Such passing of property and risk shall be without prejudice to any right of rejection.
2. All goods and work must pass the acceptance test and Competent Authority shall be titled to reject all or any work or property or good, which do not conform completely in every respect with the specifications.
3. If by the nature of the goods or property, any defect therein or any failure to conform as aforesaid does not or would not become apparent (despite the carrying out the examination and or required test) until after use, Competent Authority may reject the same even after a reasonable period of use.
4. Any property or work rejected must at the request of Competent Authority be replaced or re-performed as the case may be, by the BIDDER at his expense. Alternatively, Competent Authority may elect to cancel the contract both in respect of the goods and /or the work in question and of the whole of the undelivered balance (if any) of the goods and/or the remainder of the work (if any) covered under this contract. All rejected goods will be returned to BIDDER at his expenses.

### **10.7 Performance obligation :**

While providing services as per Scope of Work, the successful bidder shall ensure that there is no infringement of any patent or design rights or violate any intellectual property or other right of any person or entity and shall comply with all applicable Laws, Statute, regulations and Governmental requirements and he/she shall be solely and fully responsible for consequence/any actions due to any such in arrangement.

### **10.8 Bidders personnel :**

The Bidder shall employ and provide such qualified and experienced personnel as are required to perform the services under the agreement. The Bidder shall open maintenance and liaison office at Bharatpur/Kota city. The Service/Maintenance engineer shall be available 24\*7 on telephone call at office of Addl.S.P./Dy.S.P. (Telecommunication) Bharatpur/Kota City.

### **10.9 Assignment& Subcontracting:**

1. Bidder shall not assign or transfer this contract or part thereof to any other person without written consent of the Competent Authority.
2. Bidder shall not without the written consent of Competent Authority subcontract this contract or part thereof.
3. For the purpose of the liabilities under this tender, the Bidder (in case of consortium, the lead member) will be considered as a solely liable to all the components of the tender and scope of the work.

### **10.10 Confidentiality :**

The Bidder and their personnel shall not, either during the implementation or after completion of the project, disclose any proprietary or confidential information relating to the services, agreement or the Rajasthan Police official data or information without the prior consent of the Competent Authority after completion of the contract period. If at any stage it is found that the bidder is using the data provided by the client any time during the contract execution or after completion of the contract for any other purposes, stringent legal action will be initiated as per applicable law of land and the contract will be Terminated without assigning any reasons.

### **10.11 Liquidated Damage :**

In Case of extension in the delivery period with liquidated damages the recovery shall be made on the basis of following percentages of value of Stores which the bidder has failed to supply: -

- |   |      |
|---|------|
| (1) (a) delay up to one fourth period of the prescribed delivery period           | 2.5% |
| (b) delay exceeding on fourth but not exceeding half of the prescribed period.    | 5%   |
| (c) delay exceeding half but not exceeding three fourth of the prescribed period. | 7.5% |
| (d) delay exceeding three fourth of the prescribed period.                        | 10%  |
- (2) Fraction of a day in reckoning period of delay in supplies shall be eliminated if it is less than half a day.
  - (3) The maximum amount of liquidated damages shall be 10%
  - (4) If the supplier requires an extension of time in completion of contractual supply on account of occurrence of any hindrance, he shall apply in writing to the authority, which has placed the supply order, for the same immediately on occurrence of the hindrance but not after the stipulated date of completion of supply.
  - (5) Delivery period may be extended with or without liquidated damages if the delay in the supply of goods is on account of hindrances beyond the control of the tenderer.

CHAPTER-11  
COMPLIANCE BY THE BIDDER

(This form must be enclosed with the Pre-Qualification Bid)

S. No	Requirements to be checked by the bidders before submission of the tender.	Compliance (To be indicated by the bidder with "YES" after compliance of the requirements)
1	Bidders should mention quantity for which they have quoted. This should be mentioned in the covering/forwarding letter head of the technical bid.	
2	Whether bidders are deposited for required Bid Security Deposit.	
3	Bidders should confirm that their Equipment/Products conform to the governing specifications of the quoted stores as per Tender Enquiry.	
4	Bidders should mention their monthly manufacturing/ supplying capacity.	
5	Bidders should mention in the Tender Enquiry that they accept our delivery terms i.e., they agree to supply stores at consignees' locations at freight, risk and cost of the Bidders.	
6	Bidders should mention that their offer is valid up to <b>1 year</b> from the bid submission deadline.	
7	Bidders should mention their delivery Period clearly.	
8	Bidders should mention that they agree to the Tolerance Clause of the Tender Enquiry.	
9	Bidders should give their past performance in the specified format give in the Tender documents.	
10	Bidders should mention that they agree to the Arbitration clause of the Tender Enquiry.	
11	Bidders should mention whether he is a manufacturer of the store(s) quoted or it is the manufacturer's authorized agent. In case of agent, it should submit valid authority letter(s) of their principal(s) for the stores they have quoted.	
12	Bidders are confirming whether they have attached required Lab test report.	
13	Bidders should mention that Business dealing with their firms has not been banned by any Govt/private agencies.	
14	Bidders should ensure that witness has signed at appropriate places of the Tender documents and full name and address of the witness have been mentioned clearly.	
15	Bidder should ensure to sign each page of the Tender documents with name, designation, seal and address of the signatory.	
16	If the Bidders want to mention any specific condition, it should be mentioned on the covering/forwarding letter only which will be placed on the first page of the technical bid. Such condition mentioned in any other document shall not be given any consideration.	



17	Bidders should mention their address for Communication with Telephone and Fax Number and e-mail ID etc.	
18(a)	Manufactures Certificate/Authorized Dealer Certificate if Applicable.	
(b)	Company/Firm Registration Certificate.	
(c)	Proof Showing date of Manufacturing of Tender Stores.	
(d)	Proof Showing Authorized Dealership with Date(S) Validity ETC.,	
(e)	<b>Income Tax Returns for The Last 3 financial years</b>	
(f)	GST Clearance Certificate up to March 2023.	
(g)	NSIC/SSI/MSME Certificate, If Applicable.	
(h)	Bid Security fee through e-challan/DD/Banker's cheque/BG	
(i)	Turnover Details as mentioned in Tender Document	
(j)	Certificates/Orders. REG. Previous Performance.	
(k)	Purchase order/work order of items Quoted Supplied Elsewhere together with Satisfactory Certificate.	
(l)	Duly signed Technical Compliance Report.	
(m)	Under Taking Signed by OEM Clearly Stating That the Models Quoted or Their Equivalents with Any Changed Model No. With Same Technical Specifications are not in any Intent List of Cancellation and they are not Left Over Stock of Discontinued Models.	
(n)	Models Quoted Should be Latest Manufacturing i.e., Produced After <b>01.01.2023</b> Only.	

### Questionnaire 1

*Please Mark ✓ in appropriate Box and fill the answer correctly. Bidders leaving the option unmarked and questionnaire unanswered shall be rejected.*

1	Name and address of Manufacturer/Authorized Dealer		
2	<ul style="list-style-type: none"> <li>a. Proof of the original manufacturer</li> <li>b. Proof of Authorized Dealer</li> <li>c. Manufacturing capacity in volume and in Rs. lakhs per annum</li> <li>d. Turnover of last Three years with proof</li> <li>e. Purchase order copy and satisfaction report</li> </ul>		
3	<ul style="list-style-type: none"> <li>a. Whether registered with SSI/NSIC (Copy of certificate)</li> <li>b. If yes, Monetary limit ( Enclose photocopy of Regn. certificate)</li> <li>c. Validity date</li> </ul>	Yes	No
4	Terms of delivery: Free delivery at consignee's address	Yes	No
5	<ul style="list-style-type: none"> <li>a. Delivery period in months from date of placement of order</li> <li>b. Quantity offered</li> </ul>		
6	<ul style="list-style-type: none"> <li>a. Whether store fully conforms to tender schedule specifications in all respect</li> <li>b. If answer of 6(A) is No, indicate the details of deviation in separate sheet</li> </ul>		
7	Have you deposited required bid security	Yes	No
8	Do you accept separate tolerance clause	Yes	No
9	<ul style="list-style-type: none"> <li>a. Do you accept security deposit and performance security deposit clause</li> <li>b. Did you enclose the above?</li> </ul>	Yes	No

Signature of the Bidder

Name in block letters

Capacity in which tender signed

Full address with Phone /Mobile /Fax No./Mail ID

## QUESTIONNAIRE - 2

Bidders should furnish specific answers to all the questions given below. Bidders may please note that if the answer so furnished are not clear and /or are evasive, the tender will be liable to be ignored.

1.	Tender No. _____		
2.	Brand of store offered.	:	
3.	Name and address of manufacturer	:	
4.	Station of manufacture	:	
5.	Please confirm that you have offered packing as per tender enquiry requirements if not indicate deviations.	:	
6.	What is your permanent Income Tax A/C No.	:	
7.	Status. a) Indicate whether you are NSIC/ SSI/ MSME	:	
	b) If you are a small-scale unit registered with NSIC/ SSI/ MSME under Single Point Registration scheme, whether there is any monetary limit.	:	
	c) In case you are registered with NSIC/ SSI/ MSME under Single Point Registration Scheme for the item quoted confirm whether you have attached a photocopy of the registration certificate indicating the items for which you are registered.	:	
8.	a) If you are not registered either with NSIC/ SSI/ MSME please state whether you are registered with Directorate of Industries of State Government concerned.	:	
	b) If so, confirm whether you have attached a copy of the certificate issued by Director of Industry	:	
9.	Please indicate name & full address of your banker <b>Name &amp; Address of bank</b> <b>Accounts No. [Core banking]</b> <b>IFSC Code</b> <b>Whether bank branch is NEFT/RTGS enabled or not</b>	:	
10.	Business name and constitution of the firm Is the firm registered under:	:	
11.	Whether the tendering firm is/are: -		
	1. Manufacturer	:	
	2. Manufacturer's authorized Dealers.	:	
<b>Note</b>	<i>If bidder is authorized dealers -</i> Please enclose with tender the copy of manufacturer's authorization on manufacturer's letter head.		

12.	If stores offered are manufactured in India, please state whether all raw materials components etc. used in their manufacture are also produced in India. If not give details of materials components etc, that are imported and their breakup of the indigenous and imported components together with their value and proportion it bears to the total value of the store.	:	
13.	State whether raw materials are held in stock sufficient for the manufacture of the stores	:	
14.	Please indicate the stock in hand at present time: - 1. Held by you against this enquiry.	:	
	2. Held by M/s. _____ over which you have secured an option.		
15.	For partnership firms state whether they are registered or not registered under Indian Partnership Act, 1932. Should the answer to this question by a partnership firm be in the affirmative, please state further: -	:	
	1. Whether by the partnership agreement, authority to refer disputes concerning the business of the partnership to arbitration has been conferred on the partner who has signed the tender.	:	
	2. If the answer to [1] is in the negative, whether there is any general power of attorney executed by all the partners of the firm authorizing the partner who has signed the tender to refer disputes concerning business of the partnership to arbitration?	:	
	3. If the answer to either [1] or [2] is in the affirmative furnish a copy of either the partnership agreement or the general power of attorney as the case may be	:	
<b>Note</b>	<p>1. Please attach to the tender a copy of either document on which reliance is placed for authority of partners of the partner signing the tender to refer disputes to arbitration. The copy should be attested by a Notary Public or its execution should be admitted by Affidavit on a properly stamped paper by all the partners.</p> <p>2. Whether authority to refer disputes to arbitration has not been given to the partner signing the tender the Bidders must be signed by every partner of the firm.</p>		
16.	Here state specifically, 1. Whether the price tendered by you is to the best of your knowledge and belief, not more than the price usually charged by you for stores of same nature/class or description to any private purchaser either foreign of as well as Govt. purchaser. It not states the reasons thereof. If any, also indicate the margin of difference.	:	
	2. In respect of indigenous items for which there is a controlled price fixed by law, the price quoted shall not be higher than the controlled price and if the price quoted exceeds the controlled price the reasons thereof should be stated.	:	
17.	1. Are you holding valid Industrial Licence[s] Registration Certificate under the Industrial Development and Regulation Act, 1981? If so, please give particulars of Industrial income Registration Certificate.	:	
	2. Exempted from the licensing provisions of the Act, for the manufacture of item quoted against this tender. If so, please quote relevant orders and explain your position.	:	

	3. Whether you possess the requisite license for manufacture of the stores and/or for the procurement of raw materials belonging to any controlled category required for the manufacture of the store? In the absence of any reply it would be assumed that no license is required for the purpose of raw materials and/or that you possess the required license.	:	
18.	State whether business dealings with you have been banned by Min/Dept. of Supply/Min. of Home Affairs?	:	
19.	Please confirm that you have read all the instructions carefully and have complied with accordingly:	:	

**Signature of Witness**

**Signature of Bidder.**

\_\_\_\_\_

\_\_\_\_\_

[Full Name and address of witness in Block letters]

[Full Name and address of the persons signing in Block letters]  
 Whether signing as Proprietor / Partner / Constituted Attorney / duly authorized by the Company.

**CHECK LIST FOR BIDDERS**

**Name of the Project:** Design, Supply, Testing, Installation, Commissioning, and Maintenance of DMR Tier III system at Kota city & District Bharatpur and DMR Tier II system at District Deeg, Rajasthan with complete accessories from Manufacturer/Whole Sale Dealer/Authorized Representative of a Manufacturer with complete end to end solution.

**Name of the Firm:** .....

**CHECK LIST**

S.No.	Eligibility Criteria	Indication Mark	Remarks
1	Proof of Manufacturer/Authorized Distributor/Authorized Dealer Certificate.	Yes/No	
2	Company/Firm Registration Certificate.	Yes/No	
3	Proof showing Manufacturing of Tender Stores.	Yes/No	
4	Proof showing Authorized Dealer ship with Date (S), Validity etc.,	Yes/No	
5	Income Tax Returns for the Last 3 financial years	Yes/No	
6	GST Clearance Certificate up to March 2023.	Yes/No	
7	Processing Fee Acknowledgment Receipt if, paid through On-Line.	Yes/No	
8	N.S.I.C./MSME/S.S.I. Certificate, if applicable.	Yes/No	
9	Bid security paid	Yes/No	
10	<b>Turnover Details with Proof: -</b>		
A	Overall Turnover of <b>Rs. 20.0 Cr.</b> of the item in any of last Three years supported with certified copies of the Chartered Accountant.	Yes/No	
12	Tender documents duly completed and signed but without indicating the rates quoted.	Yes/No	
13	Certificates / Orders regarding previous Performance.	Yes/No	
14	Proposed Major Trunking DMR TIER - III Equipment (Base station/Base sets/Handheld sets) should have deployed and functional mode in at least one State/Central Police Forces in India and attach relevant Purchase Orders/Work Orders value as per table B of Chapter 3 with satisfactory Certificate.	Yes/No	
15	Duly signed Technical Compliance report, if applicable.	Yes/No	
16	Delivery Terms / Period quoted.	Yes/No	

17	Under taking signed by OEM clearly stating that the Models quoted or their equivalents with any changed Model No. with same technical specifications are not in any intent list of cancellation and they are not left over stock of discontinued Models.	Yes/No	
18	Quoted models are latest manufacturing i.e., produced after <b>01.01.2023</b> only.	Yes/No	
19	The quoted Radios should have not been rejected by any State/Central Police Forces basing on the Performance.	Yes/No	
20	OEM authorization certificate of bidder for quoted model	Yes/No	
21	GST registration number	Yes/No	
22	Solvency Certificate	Yes/No	
23	Signature of the Bidder	Yes/No	
24	Name in Block Letters	Yes/No	
25	Full Address with Phone No., Mobile No., FAX No. and e-Mail ID etc.	Yes/No	

**CHAPTER-12**  
**Annexures (Pre and Technical qualification Bid formats)**  
**FORM 1 - Bid Proposal Form**  
**(This form must be enclosed with the Pre-Qualification Bid)**

Bidder's proposal reference number	
Name of the Firm	
Year of establishment	
Bidders Name and Address	
Registered Office Address	
Contact person	
Designation	
Phone no	
Fax No	
email id	

To  
The Director  
Police Telecommunications  
Rajasthan, Jaipur

Subject: - Design, Supply, Testing, Installation, Commissioning, and Maintenance of DMR Tier III system at Kota city & District Bharatpur and DMR Tier II system at District Deeg, Rajasthan with complete accessories from Global Manufacturer/Whole Sale Dealer/Authorized Representative of a Manufacturer with complete end to end solution.

Sir,

We, the undersigned having read and examined in detail the specifications and all proposal documents in respect of "Design, Supply, Testing, Installation, Commissioning and Maintenance of DMR Tier III system at Kota city & District Bharatpur and DMR Tier II system at District Deeg as mentioned in RFP for Rajasthan Police" and do here by proposed to make the supplies and services mentioned in the tender document.

**Price and validity:** all the prices mentioned in our proposal are in accordance with the terms as specified in the proposal documents. We do hereby confirm that our proposal includes all taxes, duties, charges for destination etc. We agreed to abide by this bid for a period of 01 year from the date fixed for bid submission and it shall remain binding upon us and will be accepted at any time before the expiration of the period. This bid together with your written acceptance thereof and your notification of award shall constitute a binding contract between us.

**Deviations:** we declare that all the services shall be performed strictly in accordance with technical specification and other conditions of the tender documents except the deviations as mentioned in the technical compliance statement (Form- 10) and deviations from tender document conditions. Further, we agree the additional conditions if any, found in the proposal documents, shall not be given effect to.



**Time schedule:** we further declare that; we have the capacity and will start and complete various tasks as per time schedule as per tender document.

**Proposal Pricing:** We further declare that the prices stated in our proposal or in accordance with your terms and conditions in the proposal document.

**Financial viability:** We hereby declare adequate financial soundness our balance sheet and sufficient financial liquidity to undertake the mentioned scope of work in the RFP, as per the time lines and service levels mentioned during the contract period.

**Qualifying data:** We confirm having submitted qualifying data as required by you in your tender document. In case you require any further information/ documentary proof in this regard before evaluation of our proposal, we agree to furnish the same.

**Agreement Performance Security:** We hereby declare that, in case the contract is awarded to us, we shall submit performance security deposit as per terms and conditions of the tender document and agreement of contract.

We hereby declare that our proposal is made in good faith, without collusion or fraud and the information contained in the proposal is true and correct to the best of our knowledge and belief and nothing is concealed. We also agree that terms under this bid have been drafted in good faith and do undertake to resort to the spirit of completion of tasks under this bid as the faithful adviser of the purchaser.

We have noted the contents of agreement and bank guarantee draft and agree to abide by terms and conditions in the same. The proposal submitted by us is properly sealed and prepared so as to prevent any subsequent alternation and replacement.

We understand that you are not bound to accept the lowest or any proposal you may receive. The undersigned is competent and duly authorized by the Bidder Company/entity to sign this document. We further agree to adhere to ethical standard set by you in this document and all such other instructions on the issue by the government of India and Government of Rajasthan.

Thanking you,

Yours faithfully

(Signature)

Name	:	_____
Date	:	_____
Designation and Authority	:	_____
Place	:	_____
Seal	:	_____
Business address	:	_____

FORM 2 - OEM/Manufacturers Authorisation Certificate

(This form must be attached with the "Pre-Qualification Bid")

(On the letter head of OEM carrying address, contact numbers with sign and seal of authorised signatory)

1. It is certified that we have read this tender document and are fully acquainted with all technical and financial requirements. M/s \_\_\_\_\_ are our authorised distributors/ resellers/agents and they have been authorised to quote and sell ..... (Name of equipment or part or hardware or software with full details) and ..... (Accessories) Make/ Model No. \_\_\_\_\_ is manufactured/ developed by us to Rajasthan Police. We will provide to them all necessary support for providing effective after sale services as per the terms and conditions of the RFP.
2. That in the event of bidder is awarded this tender, we will provide adequate quantity of quoted make, model of hardware /quoted version of software and associated services within the given delivery period of this tender.
3. It is cleared that the product proposed will not reach end of life for at least 10 years from the date of commissioning and we will provide 3 years comprehensive warranty.
4. That we undertake to supply the spares, wireless sets, batteries and all the items required to smoothly operate the system for next 10 years. This undertaking will be carried out even if our arrangement with present vendor gets terminated for any reason whatsoever.
5. We will also provide necessary support to the lead bidder to establish service centre at Jaipur city, Rajasthan, if contract is awarded to the bidder.
6. That this assurance is being given after assessing financial capability of the bidder and our contractual arrangements with the bidder.

Authorised Signatory

Signature :

Name :

Designation :

Address and  
Contact Number :

Seal :

(Company letterhead) [Date]

**FORM 3 - Letter of Authority**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

<Bidder Representative's Name>, < Designation>, is hereby authorized to sign relevant documents on behalf of the Company in dealing with RFP of reference <RFP No. and Date>. He is also authorized to attend meetings and submit Technical and Commercial information as may be required by you in the course of processing above said RFP.

Thanking you,

Authorized Signatory (Name)

Name &Signature of Authorized Person

Company's Seal

Phone:            Fax:

(Company letterhead) [Date]

**FORM 4 - Information of bidder**

About the firm including but not limited to:

S. No.	Particulars
1	Project Team
2	Project undertaken by the Bidder
3	Projects where the proposed solution is implemented (attach sheets for individual projects)
4	Turnover - Last Three Years

**FORM 5 - Annual Financial turn over details**

Of Sole Bidder/ Each member of consortium for last Three years (on the letter head of the bidder)

S. No	Year	Total Turn over (Rs. in lakhs - in words and figures)	Actual turn over (Rs in lakhs - in words and figures) for items tendered)
1			
2			
3			
4			
5			

Note:

- Attach Audited Balance sheets for the above period.
- Attach copies of Income tax returns.
- Attach copies of Sales tax /Service tax returns/ GST.

Signature of the Chartered Accountant of the bidder

Full Name & Seal of the Chartered Accountant

Address

Contact No.

Registration No./Membership number with ICAI.

**FORM 6 - Format of Bid security (In Case of Bank Guarantee)**

Whereas ..... (Hereinafter called the "Bidder") has submitted their offer dated.....for the supply of (hereinafter called the "Bid") against the Buyer's Request for proposal No.....

Know all men by those present that we.....of ..... having our registered office at ..... are bound unto..... (herein after called the "Buyer) in the sum of for which payment will and truly be made to the said Buyer, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this..... day of \_\_\_\_\_.

The conditions of obligations are -

- (1) If the bidder withdraws or amends, impairs or derogates from the bid in any respect within the period of validity of this tender.
- (2) If the bidder having been notified of the acceptance of his tender by the buyer during the period of its validity.
  - a) Fails to furnish the Performance Security for the due performance of the contract.
  - b) Fails or refuses to accept/execute the contract.

We undertake to pay the Buyer up to the above amount upon receipt of its first written demand, without the Buyer having to substantiate its demand, provided that in its demand the Buyer will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

.....

(Signature of the authorized officer of the Bank)

Name and designation of the officer

Seal, name & address of the Bank and address of the Branch

**FORM 7 - Performance Security Form**

(To be issued by a bank scheduled in India having at least one branch in Jaipur)

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Tender Ref.

Whereas \_\_\_\_\_ (Name of vendor) hereinafter called "the Vendor" has undertaken, in pursuance of Contract No \_\_\_\_\_ Dated \_\_\_\_\_ (Date), to supply \_\_\_\_\_ called " the Contract".

and whereas it has been stipulated by you in the said Contract that the Vendor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the contract.

Whereas we have agreed to give the Vendor a Guarantee;

Therefore we hereby affirm that we are Guarantor and responsible to you, on behalf of the Vendor, up to a total of Rs. \_\_\_\_\_ and we undertake to pay you, upon your first written demand declaring the Vendor to be in default under the Contract and without cavil or argument, any sum or sums within the limit of Rs \_\_\_\_\_ (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until sixty days beyond the warranty period of three years.

Place:  
Date:

Signature and seal of Guarantors

## **FORM 8 - Consortium/Memorandum of Understanding between Lead Bidder and Partner firms**

- A. This Consortium Memorandum of Understanding is entered into and effective as of the <sup>th</sup> day of The [Client Name] (herein referred to as "Employer") has issued an e-tender having No.:  
**XXXXXXXXXXXXXXXXXXXX** for [Project Name with description] (herein referred to as "Project").
- B. The parties shall, as a consortium, jointly prepare and submit the tender for the Project, to the Employer (herein referred to as the "Tender") and perform the contract in the event of award of the Tender to the Parties, on terms and conditions herein under appearing.  
Now, therefore, the parties hereby agree to the following terms and conditions of the Memorandum of Understanding:  
XXXXXX 2022 by and between:
- a) **[Lead Bidder Name]** having there registered office at **[Address]** (Herein after referred to as respectively "**Lead Bidder**") and,
  - b) **[Secondary Bidder Name]** having there registered office at **[Address]** (Herein after referred to as respectively "**Secondary Bidder**").
- The expressions "Lead Bidder" and "Secondary Bidder" shall, wherever the context admits, mean and include their respective successor(s) –in-interest and assigns and shall collectively be referred to as the "Parties" and individually as the "Party".

### **PREAMBLE:**

#### **Clause 1: Purpose of the Memorandum of Understanding**

The purpose of this Memorandum of Understanding is to establish the principles governing the relationship of the Parties with each other, the Employer, and third Parties with respect to the Project during Bid preparation and submission, Contract negotiation and Contract Implementation.

#### **Clause 2: Lead Bidder and Secondary Bidder**

2.1 [Lead Bidder Name] will be the Lead Bidder for the co-ordination of the preparation and submission of the Bid to the Employer. It is agreed that [Lead Bidder Name] shall be fully empowered to represent the consortium.

2.2 [Secondary Bidder Name] will be the Secondary Bidder for the co-ordination of the preparation and submission of the Bid to the Employer.

#### **Clause: 3 Scope of Work**

The Parties shall generally share the Scope of Work to be carried out by each Party. All documents of submission shall be mutually agreed, signed and stamped.

#### **Clause: 4 Exclusivity**

During the validity of this Memorandum of Understanding, each of the Parties shall not enter into any similar Agreement/ Memorandum of Understanding of any nature in respect of the Project/ Works and/ or discuss matters concerned under this Memorandum of Understanding, either directly or indirectly or through its subsidiary/ associate or otherwise with any other party.

#### **Clause: 5 Secrecy**

Each Party shall be obliged to keep in strict confidence and to bind all of its employees to keep in strict confidence all the commercial and technical information received directly and indirectly from Employer and the other Party under this Memorandum of Understanding or in the performance of the Project and shall not at any time disclose such information to any third party and shall not use such information for any purpose other than for the performance of this Memorandum of Understanding and/or the Project without prior written consent of the other Party.



**Clause: 6 Amendments to Memorandum Of Understanding**

This Memorandum of Understanding may be amended, modified or supplemented only when approved in writing by the duly authorized representatives of each of the Parties.

**Clause 7: Assignment**

Neither Party shall assign, sub-let or transfer an interest under this Memorandum of Understanding, without the prior written consent of the other Party.

**Clause 8: No Agency**

8.1 This Memorandum of Understanding relates only to the single Consortium contemplated in it.

8.2 Nothing contained in herein is intended to create a partnership, agency, fiduciary relationship or any other separate legal or corporate entity among parties.

8.3 No party has the right to represent or bin the other Party without the other Party's prior written consent.

**Clause 9: Duration of The Memorandum of Understanding**

This Memorandum of Understanding shall become null and void,

- a) If the Employer abandons or cancels the Project;
- b) If either Party is declared as insolvent by a Court of Competent jurisdiction;
- c) By mutual consent;
- d) If the Employer awards the Tender to third party.

**Clause 10: Language**

All notices, communication and statements shall be made in English/Hindi language.

**Clause 11: Dispute Resolution**

Except as otherwise provided in this Memorandum of Understanding any dispute or difference arising between the Parties in respect of connection with or touching the meaning, construction, interpretation and the rights and obligations of the parties under this Memorandum of Understanding shall be first amicably resolved by the authorized representatives of the Parties failing which such disputes/ differences shall be exclusively and finally settled by arbitration and Conciliation Act, 1996 and/ or any statutory amendments thereof, by an Arbitral Tribunal consisting of three arbitrators, with each Party appointing its nominee arbitrator and both the arbitrators appointing the third and presiding arbitrator. The language of the arbitrator proceedings shall be English.

**Clause 12: Jurisdiction**

This Memorandum of Understanding shall be construed and governed by the law of the Government of India and within the jurisdiction of High Court of Rajasthan. In witness whereof the Parties here to have signed this Memorandum of Understanding on the day, month and year first above written.

For, **[Lead Bidder Name]** By:

Name:

Title:

For, **[Secondary Bidder Name]** By:

Name:

Title:

**FORM 9 - Self-Declaration**

(Company Letter head Submit separate declaration for consortium member, if any) [Date]

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

In response to the RFP No. \_\_\_\_\_ dated for quoting against the RFP as a  
Director of M/s \_\_\_\_\_, I / We hereby declare that our  
Company / Firm is:

1. Not under a Declaration of Ineligibility for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices or blacklisted by any of the State Government/Central Government/ Government undertaking agencies or PSU.
2. Not under the Breach of general or specific instructions for bidding, general and special conditions of contract with Government of Rajasthan State (any of its department/Agency), or any of its other Client organization during the past 3 years.

Yours faithfully,

Authorized Signatory  
Name  
Designation  
Company name

**FORM 10 - Detailed Technical Compliance statement**

(This form must be enclosed with the **Technical Bid**)

Detailed compliance statement is to be provided by all Bidders against the Specification given in the RFP. Failure to provide compliance will lead bid being summarily rejected.

Specifications include warranty, maintenance and service conditions, Technical Specifications specified in the RFP.

S. No.	Specification (Each line of item in RFP)	Details of item offered by the Bidder			
		Make	Model No./ Part No.	Specification	Deviation if any

Note: Attach Manufacturer's Brochures/Pamphlets

Place :

Date :

Signature:

Name:

Designation :

For and on behalf of :

**FORM 11 - Performance statement (for 08 years)**

(On the letter head of Lead Bidder/OEM)

S. No.	Financial Year	Name & address, Ph. number of purchaser to whom similar service/ supplies were made	Description of work/ Supply order	Purchase order/work order No. and date issued by the purchaser	Value of contract/ Purchase order/work order	Period of execution		Performance certificate from customer (Page No.)
						Start	End	

As of this date, the information furnished in all parts of this form is accurate and true to the best of my knowledge. I have no objection in getting this information verified by the Director, Police Telecommunications, Rajasthan, Jaipur in any covert or open manner, as the latter may deem fit.

Place :

Date :

Signature:

Name:

Designation :

For and on behalf of :

(Company letterhead) [Date]

**FORM 12 - Technical Personnel Statement**  
(This form must be enclosed with **Technical Bid**)

Detailed information of proposed service centre with in Rajasthan State and personnel deployed or to be deployed by the bidder.

S. No.	Name	Designation	Qualification	Contact No.	Full address of local service centre (if any)

Place :

Date :

Signature:

Name:

Designation :

For and on behalf of :

(Company letterhead) [Date]

**FORM 13 - List of Spare Parts required for Maintenance of Trunking System**  
(This form must be enclosed with the **Financial Bid**)

S. No.	Spare parts description	Unit Price (Rs.)

**Note:** These prices are only for future reference and will not count in this project/BOM.

Place :

Date :

Signature:

Name:

Designation :

For and on behalf of :

**FORM 14 - Solvency Certificate from a Nationalised/Scheduled Bank**

(This form is submitted by the successful Bidder only)

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Bank Solvency for DMR TIER-III Radio Trunking Project of Rajasthan Police.

This is to certify that to the best of our knowledge and information M/s/Sri ..... having marginally noted address, a customer of our bank are/is respectable and can be treated as good for DMR TIER-III Radio Trunking and DMR TIER – II Project of Rajasthan Police up to a limit of Rs. 20,00,00,000/- (Rupees Twenty Crores Only) in favour of Administrative Officer, Office of the Director Police Telecommunications, Rajasthan, Jaipur. This certificate is issued without any guarantee or responsibility on the Bank or any of the Officers.

(Signature)

Manager/Authorised Signatory

Full Name

Designation

Bank & Branch Address

Note: In case of partnership firm, certificate to include names of all partners as recorded with the bank.

(Company letterhead) [Date]

**FORM 15 - Undertaking on abiding by all the RFP terms and conditions.**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

We the undersigned hereby declare that we had thoroughly read the RFP document for selection of bidder for Design, Supply, Testing, Installation, Commissioning and Maintenance of DMR Tier III system at Kota city & District Bharatpur and DMR Tier II system at District Deeg with complete accessories. We M/s<company name>hereby undertake that we unconditionally abide by all the terms and conditions laid out in the RFP and all the requirements of the RFP are acceptable to us without any deviations.

Thanking you,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:



(Company letterhead) [Date]

**FORM 16 - Undertaking of blacklist**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

In response to the RFP, as an authorized signatory of <company name> I/we hereby declare that our company/firm has not been blacklisted by Central Government, State Governments or Government Corporations of India as on the date of bid submission.

Thanking you,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 17 - Undertaking on patent rights**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Patent Rights

Sir,

1. I/We as Bidder do hereby undertake that none of the deliverables being provided by us is infringing any patent or intellectual and industrial property rights as per the applicable laws of relevant jurisdictions having requisite competence.
2. I/We also confirm that there shall be no infringement of any patent or intellectual and industrial property rights as per the applicable laws of relevant jurisdictions having requisite competence, in respect of the equipment, systems or any part thereof to be supplied by us. We shall indemnify Rajasthan Police Telecommunications Organisation against all cost/claims/legal claims/liabilities arising from third party claim in this regard at any time on account of the infringement or unauthorized use of patent or intellectual and industrial property rights of any such parties, whether such claims arise in respect of manufacture or use. without prejudice to the aforesaid indemnity, the Bidder shall be responsible for the completion of the supplies including spares and uninterrupted use of the equipment and/or system or any part thereof to Rajasthan Police Telecommunications Organisation and persons authorized by Rajasthan Police Telecommunications Organisation, irrespective of the fact of claims of infringement of any or all the rights mentioned above.
3. If it is found that it does infringe on patent rights, intellectual/industrial property rights, I/We absolve Rajasthan Police Telecommunications Organisation of any legal action.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 18 - Undertaking on Conflict of Interest**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Conflict-of-Interest

Sir,

I/We as Bidder do hereby undertake that there is absence of, actual or potential conflict of interest on the part of the Bidder or any prospective subcontractor due to prior, current, or proposed contracts, engagements, or affiliations with Rajasthan Police Telecommunications Organisation. I/We also confirm that there are no potential elements (time frame for service delivery, resource, financial or other) that would adversely impact the ability of the bidder to complete the requirements as stated in the RFP. We undertake and agree to indemnify and hold Rajasthan Police Telecommunications Organisation harmless against all claims, losses, damages, costs, expenses, proceeding fees of legal advisors (on a reimbursement basis) and fees of other professionals incurred (in the case of legal fees & fees of professionals, reasonably) by Rajasthan Police Telecommunications Organisation and/or its representatives, if any such conflict arises later.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 19 - Undertaking on pricing of items of Technical Response**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Pricing of Items of Technical Response

Sir,

I/We do hereby undertake that Commercial Proposal submitted by us is inclusive of all the items stated in the technical proposal and is inclusive of all the clarifications provided/may be provided by us on the technical proposal during the evaluation of the technical offer. We understand and agree that our Commercial Proposal is firm and final and that any clarifications sought by you and provided by us would not have any impact on the Commercial Proposal submitted by us.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 20 - Undertaking on provision of Support for Hardware & Software**

To,

Director,

Police Telecommunications Rajasthan,

Jaipur.

Sub: Undertaking on Provision of Hardware & Software

Sir,

1. I/We as Bidder do hereby undertake the provision for Annual Technical Support / Warranty support (Services as defined in the RFP) for all the components (Hardware & Software) of BOM in Tender during the duration of the contract period.
2. We also undertake to provide the support needed for any 3rd party products proposed as part of Application Software during the duration of the contract period.
3. I/ We as Bidder also confirming that we are solely responsible for providing the comprehensive support for the software, its components and sub components to be provided under this project.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 21 - Undertaking on Service Level Agreement Compliance**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Service Level Agreement Compliance  
Sir,

1. I/We as Bidder do hereby undertake that we shall monitor, maintain, and comply with the service levels stated in the RFP/ Corrigendum to provide quality service to Rajasthan Police Telecommunications Organisation.
2. However, if the proposed number of resources is found to be not sufficient in meeting the tender and/or the Service Level requirements given by Rajasthan Police Telecommunications Organisation, then we will augment the team without any additional cost to Rajasthan Police Telecommunications Organisation.
3. We also undertake that NMS provided will measure and provide necessary reports for meeting SLA compliance.

Yours faithfully,

Signature of Authorized Person  
Name  
Company Seal  
Phone:                      Fax:

(Company letterhead) [Date]

**FORM 22 - Undertaking on Deliverables**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Deliverables

Sir,

1. I/We as Bidder do hereby undertake the adherence of required Certification or above standards to the processes, deliverables/artifacts to be submitted to Rajasthan Police Telecommunications Organisation proposed as part of the BOM.
2. We also recognize and undertake that the Deliverables/artifacts shall be presented and explained to Rajasthan Police Telecommunications Organisation and other key stakeholders identified by Rajasthan Police Telecommunications Organisation, and also take the responsibility to provided clarifications as required by Rajasthan Police Telecommunications Organisation.
3. We also understand that the acceptance, approval, and sign-off of the deliverables by Rajasthan Police Telecommunications Organisation will be done on the advice of Core Group and/or the Technical Team and/or the nominated representative of Rajasthan Police Telecommunications Organisation. We understand that while all efforts shall be made to accept and convey the acceptance of each deliverable in accordance with the project schedule, no deliverable will be considered as accepted until a specific written communication to that effect is made by Rajasthan Police Telecommunications Organisation.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 23 - Undertaking on Training the Users**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Training the Users

Sir,

I/We hereby undertake to train users (to be identified by Rajasthan Police Telecommunications Organisation) as per Rajasthan Police Telecommunications Organisations requirements stated in the Chapter V of RFP. We further undertake that:

1. We shall carry out a comprehensive training needs analysis and accordingly design the training program.
2. Our training program would include, at the minimum, classroom training followed by supervised work sessions OR as suggested by Rajasthan Police Telecommunications Organisation or its nominated agency.
3. We shall prepare all necessary training materials and deliver the training.
4. We shall provide the refresher training to the Rajasthan Police Telecommunications Organisation personnel after every three months for the better performance.
5. We will undertake the training of the identified personnel until it would reach to the satisfactory level of the competent authority and also personnel would be able to efficiently work on the new system without any help of the implementation agency.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:



(Company letterhead) [Date]

**FORM 24 - Undertaking on Continuous improvement**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Continuous Improvement

Sir,

I/We understand that Continuous improvement of Trunking system is highly critical for Rajasthan Police Telecommunications Organisation and that the Bidder is expected to be the prime driver of continuous improvement during the running of the Trunking system (Hardware & Software).

I/We also understand that the disrobements proposed as part of this Continuous Improvement initiative will not be the usual run-of-the-mill enhancements, but will be significant changes that result in a quantum leap in meeting user needs and improving the out comes in policing.

I/We further understand that whether a proposed change forms part of Continuous Improvement or is a minor change that will have to be incorporated into the Trunking system will be determined by Rajasthan Police Telecommunications Organisation.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 25 - Undertaking on Provision of Work Environment at the site**

To,

Director,

Police Telecommunications Rajasthan,

Jaipur.

Sub: Undertaking on Provision of Work Environment at the site (Bharatpur/Kota city)

Sir,

I/We as Bidder do hereby understand that the premise for the onsite implementation team would be provided by Rajasthan Police Telecommunications and any other requirements / arrangements such as desktops, printers and software etc. will be Bidder's responsibility.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 26 - Undertaking on changes to the Contract Clauses**

To,  
Director,  
Police Telecommunications Rajasthan,  
Jaipur.

Sub: Undertaking on Changes to Contract Clauses

Sir,

1. I/We as Bidder do hereby acknowledge that we understand that the request for changes to contract clauses and any other terms & conditions in the RFP, submitted in our proposal are just suggestions for change.
2. We understand that it is neither guaranteed that these requests for changes will be accepted in the final contract nor this process will be construed as any commitment from Rajasthan Police Telecommunications Organisation to consider those suggestions.
3. In case, suggestions quoted in our technical solution is not accepted by Rajasthan Police Telecommunications Organisation therefore we are committed to work as per the requirements stated in the RFP.

Yours faithfully,

Signature of Authorized Person

Name

Company Seal

Phone:

Fax:

(Company letterhead) [Date]

**FORM 27 - Profile for previous Project Experience**

Relevant Project experience	
General Information	
Name of the project	
State/Central Police forces for which the project was executed	
Name and contact details of the State/Central Police forces	
Project Details	
Scope of services	
Service levels being offered/Quality of service (QoS)	
Technologies used	
Outcomes of the project	
Other Details	
Total cost of the project	
Total cost of the services provided by the bidder	
Duration of the project (no. of months, start date, completion date, current status)	
Other Relevant Information	
Mandatory Supporting Documents: a) Letter from the State/Central Police forces to indicate the successful completion of the projects	
Project Capability Demonstration	
Please provide complete details regarding the scope of the project to indicate the relevance to the requested technical evaluation criterion.	

**CHAPTER-13**

**Financial/Commercial Bid Format**

- a) The Price Bids of only those Bidders will be opened whose Technical Bids would clear the Technical Evaluation.
- b) The Bidders shall submit their Commercial Bid strictly as per the below prescribed format. The Lowest Bid will be decided upon the lowest price quoted by the particular bidder as per the Price Format.
- c) To be specified by the bidder as per technology offered by the bidder separately and this must be enclosed with the financial bid.

Sl. No	Description of Items.	Basic Price	GST	Landed Price	Qty	Total Amount
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

**Optional Items:**

<b>S. No.</b>	<b>Requirement</b>	<b>Unit Cost</b>	<b>GST</b>	<b>Total Cost</b>
1	Bluetooth Head Set OEM/Sennheiser/Bose			
2	Hands free (Wired Earplug)			
3	Range Extender (Required device with accessories for coverage) for optimizing the coverage. Bidder to specify the options			
4	Suitable Radio Communication Test Setup having all technical features of Base Station, Mobile, Static, handheld sets and accessories etc. for DMR TIER -III Trunked Radio System with auto test and alignment facility.			
5	Through Line Power meter, Field strength indicator, Megger or any other item essential for field testing.			
6	Magnetic base vehicular antenna			
7	Unified threat management (UTM) System for network security of the project			
8	Year wise AMC for seven years after warranty period.			
i	Comprehensive AMC 1 <sup>st</sup> year			
ii	Comprehensive AMC 2 <sup>nd</sup> year			
iii	Comprehensive AMC 3 <sup>rd</sup> year			
iv	Comprehensive AMC 4 <sup>th</sup> year			
v	Comprehensive AMC 5 <sup>th</sup> year			
vi	Comprehensive AMC 6 <sup>th</sup> year			
vii	Comprehensive AMC 7 <sup>th</sup> year			
viii	Non-Comprehensive AMC 1 <sup>st</sup> year			
ix	Non-Comprehensive AMC 2 <sup>nd</sup> year			
x	Non-Comprehensive AMC 3 <sup>rd</sup> year			
xi	Non-Comprehensive AMC 4 <sup>th</sup> year			
xii	Non-Comprehensive AMC 5 <sup>th</sup> year			
xiii	Non-Comprehensive AMC 6 <sup>th</sup> year			
xiv	Non-Comprehensive AMC 7 <sup>th</sup> year			

## **Annexure A:**

### **Grievance Redressal during Procurement Process**

- The designation and address of the First Appellate Authority is Director General of Police Rajasthan, Police Headquarters, Jaipur.
- The designation and address of the Second Appellate Authority is Additional Chief Secretary/ Principal Secretary (Home Department), Govt. of Rajasthan, Secretariat, Jaipur.

#### **(1) Filing an appeal**

If any Bidder or prospective bidder is aggrieved that any decision, action or omission of the Procuring Entity is in contravention to the provisions of the Act or the Rules or the Guidelines issued thereunder, he may file an appeal to First Appellate Authority as specified in the Bidding Document within a period of ten days from the date of such decision or action/ omission, as the case may be, clearly giving the specific ground or grounds on which, he feels aggrieved:

Provided that after the declaration of a Bidder as successful the appeal may be filed only by a Bidder who has participated in procurement proceedings. Provided further that in case a Procuring Entity evaluates the Technical Bids before the opening of the Financial Bids, an appeal related to the matter of Financial Bids may be filed only by a Bidder whose Technical Bid is found to be acceptable.

#### **(2) The officer to whom an appeal is filed under para (1) shall deal with the appeal as expeditiously as possible and shall endeavour to dispose it of within thirty days from the date of the appeal.**

#### **(3) If the officer designated under para (1) fails to dispose of the appeal filed within the period specified in para (2), or if the Bidder or prospective bidder or the Procuring Entity is aggrieved by the order passed by the First Appellate Authority, the Bidder or prospective bidder or the Procuring Entity, as the case may be, may file a second appeal to Second Appellate Authority specified in the Bidding Document in this behalf within fifteen days from the expiry of the period specified in para (2) or of the date of receipt of the order passed by the First Appellate Authority, as the case may be.**

#### **(4) Appeal not to lie in certain cases**

No appeal shall lie against any decision of the Procuring Entity relating to the following matters, namely: -

- (a) Determination of need of procurement.
- (b) Provisions limiting participation of Bidders in the Bid process.
- (c) The decision of whether or not to enter into negotiations.
- (d) Cancellation of a procurement process.
- (e) Applicability of the provisions of confidentiality.

#### **(5) Form of Appeal**

- (a) An appeal under para (1) or (3) above shall be in the annexed Form along with as many copies as there are respondents in the appeal.
- (b) Every appeal shall be accompanied by an order appealed against, if any, affidavit verifying the facts stated in the appeal and proof of payment of fee.
- (c) Every appeal may be presented to First Appellate Authority or Second appellate Authority, as the case may be, in person or through registered post or authorised representative.

(6) Fee for filing appeal

(a) Fee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non-refundable.

(b) The fee shall be paid in the form of bank demand draft or banker's cheque of a Scheduled Bank in India payable in the favour of Appellate Authority concerned.

(7) Procedure for disposal of appeal

(a) The First Appellate Authority or Second Appellate Authority, as the case may be, upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.

(b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be, shall -

(i) hear all the parties to appeal present before him: and

(ii) peruse or inspect documents, relevant records or copies thereof relating to the matter.

(c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.

(d) The order passed under sub-clause (c) above shall also be placed on the State Public Procurement Portal.



Memorandum of Appeal under the Rajasthan Transparency in Public Procurement Act, 2012

Appeal No.....of.....

Before the .....(First/ Second Appellate Authority)

1.Particulars of appellant:

(i) Name of the appellant:

(ii) Official address, if any:

(iii) Residential address:

2. Name and address of the respondent (s):

(i)

(ii)

(iii)

3. Number and date of the order appealed against and name and designation of the officer/ authority who passed the order (enclose copy), or a statement of a decision, action or omission of the Procuring Entity in contravention to the provisions of the Act by which the appellant is aggrieved:

4. If the Appellant proposes to be represented by a representative, the name and postal address of the representative:

5. Number of affidavits and documents enclosed with the appeal:

6. Grounds of appeal:

.....  
.....  
.....  
.....  
.....  
.....(Supported by an affidavit)

7. Prayer:

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

Place .....

Date .....

Appellant's Signature

**Additional Conditions of Contract**

## 1. Correction of arithmetical errors

Provided that a Financial Bid is substantially responsive, the Procuring Entity will correct arithmetical errors during evaluation of Financial Bids on the following basis:

- i. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected.
- ii. if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- iii. if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above

If the Bidder that submitted the lowest evaluated Bid does not accept the correction of error, its Bid shall be disqualified and its Bid Security shall be forfeited or its Bid Securing Declaration shall be executed.

## 2. Procuring Entity's Right to Vary Quantities

- (i) If the Procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the Bidder shall not be entitled for any claim or compensation except otherwise provided in the Conditions of Contract.
- (ii) In case of procurement of Goods or services, additional quantity may be procured by placing a repeat order on the rates and conditions of the original order. However, the additional quantity shall not be more than 50% of the value of Goods of the original contract and shall be within one month from the date of expiry of last supply. If the Supplier fails to do so, the Procuring Entity shall be free to arrange for the balance supply by limited Bidding or otherwise and the extra cost incurred shall be recovered from the Supplier.

## 3. Dividing quantities among more than one Bidder at the time of award (In case of procurement of Goods)

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, when it is considered that the quantity of the subject matter of procurement to be procured is very large and it may not be in the capacity of the Bidder, whose Bid is accepted, to deliver the entire quantity or when it is considered that the subject matter of procurement to be procured is of critical and vital nature, in such cases, the quantity may be divided between the Bidder, whose Bid is accepted and the second lowest Bidder or even more Bidders in that order, in a fair, transparent and equitable manner at the rates of the Bidder, whose Bid is accepted.

### **Malicious Code Certificate:**

1. A. (a) This is to certify that the Hardware and the Software Being offered, as part of the contract, does not contain Embedded Malicious code that would activate procedures to: -
    - i. Inhibit the desired and designed function of the equipment.
    - ii. Cause physical damage to the user or equipment during the exploitation.
    - iii. Tap information resident or transient in the equipment/network.
  - (b) The firm will be considered to be in breach of the procurement contract, in case physical damage, loss of information or infringements related to copyright and Intellectual Property Right (IPRs) are caused due to activation of any such malicious code in embedded software.
  - B. As and when asked for, the firm shall share the complete Hardware (including disclosure of sourcing of critical components)/Software/Firmware details of the radio communication equipment with the procurement agencies/testing agencies.
  - C. The firm shall cooperate with the testing agency, as designated by the procurement agencies, to provide any further details/assistance, as and when sought by them.
  - D. If the Radio equipment supplied by the firm fails test by Testing Agency, the Bank Guarantee of the firm shall be invoked and suitable legal action shall be initiated against the firm.
  - E. The firm will be blacklisted if it breaches any of the above-mentioned clauses.
- (2) At any stage, in case of any security concerns with the Radio Equipment, the procurement agencies may contact the Testing Agency with complete details and direct the firm to provide details sought by the Testing agency and cooperate with them.

**PRE- BID QUERIES FORMAT**

(to be filled by bidder)

Name of the Company/Firm:

\_\_\_\_\_

\_\_\_\_\_ Bidding Document Fee Receipt No. \_\_\_\_\_

Dated \_\_\_\_\_ for Rs. \_\_\_\_\_/-

**Name of Person(s) Representing the Company/Firm:**

Name of Person	Designation	Email ID (s)	Tel. Nos. and Fax Nos.

**Company/Firm Contacts:**

Contact Person (s)	Address for Correspondence	Email ID (s)	Tel. Nos. and Fax Nos.

**Query/Clarification Sought:**

S. No.	NIB Page No.	NIB Rule No.	Rule Details	Query/Suggestion/ Clarification

Not: - Queries must be strictly submitted only in the prescribed format (.XLS) by email.

Queries not submitted in the prescribed format will not be considered/responded at all by the procuring entity. Also, **kindly attach the coloured scanned copy of the receipt towards the submission of the bidding/tender document fee.**