

POLICE HEADQUARTERS

Phone/Fax No: 0194-2443031/ 2443032
0191-2459029/2459255(Jammu)



{ PROVISION SECTION }

J&K JAMMU.

(Sgr)Website: www.jkpolice.gov.in
Email: phqjk@jkpolice.gov.in

Gist of e-tender notice No 05 of 2019

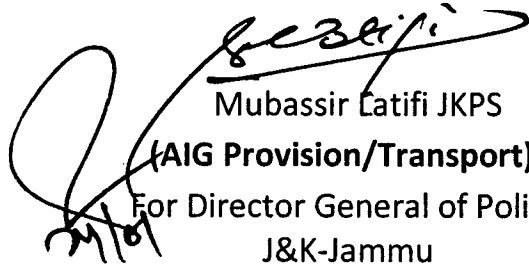
Dated: - January, 24th 2019

For and on behalf of the Governor of Jammu and Kashmir State, short terms e-tenders are hereby invited from registered OEM's or their authorized dealers to quote against this e-tender for Supply, installation & Commissioning of Intra/inter District Network project Using DMR(A turnkey communication solution) as mentioned in Annexure "A" of this tender notice. The download of the NIT shall start on 24/01/2019 from 1600 hours. Tenders shall be submitted online on J&K State e-Procurement Portal www.jktenders.gov.in upto 06.02.2019 before 1800 hours.

The tenders (technical bids only) will be opened online on 08.02.2019 at 1100 hours at Police Headquarters J&K Gulshan Ground Jammu. In case of unforeseen circumstances, the date of opening for technical bids will be next working day.

A pre bid conference shall be held at PHQ J&K Gulshan Ground Jammu on 29 .01.2019 at 1600 hours , the intending firms can participate in this conference to clarify any issue related to instant tender enquiry or planning of the department to implement this project. In view of paucity of time neither any extension will be given in the last date for submission of bids nor any query shall be entertainable after pre bid conference i.e. 29 .01.2019.

Detailed tender documents (SBD) with terms and conditions are available on J&K State e-procurement Portal www.jktenders.gov.in. The intending tenderers may visit this portal site for detailed information.


Mubassir Latifi JKPS
(AIG Provision/Transport)
For Director General of Police,
J&K-Jammu

No: - Prov-II /WPR- 26/2016-17/ 6311-25

Dated

25 .01.2019

Copy to the:-

1. Principal Secretary to Govt. Home Department J&K Jammu
2. All ADsGPJ&K
3. All IsGPJ&K

....for favour of information.

4. DIG CKR Srinagar/DIG Jammu-Kathua& Samba Range Jammu.
5. Director Police Telecom J&K Jammu for information.
6. Director Industries Jammu/Srinagar for information.

7. Chief Accounts officer PHQ J&K Jammu for information
8. Manager Government Press Srinagar / Jammu for publication of the e.tender in Govt Gazette.
9. SSP J&K CID Cell, 11 Harish Chander Mathur Lane Kasturba Gandhi Marg New Delhi-110001 alongwith copy of the e.tender for information intending firms.
10. AIG Communication PHQ J&K Jammu for information with the request to arrange publication of Gist of the e.tender in 02 State dailies and one National daily or as per Govt. directions about publications of the tenders through information department.
11. In-Charge IT Centre PHQ/In-Charge e-tendering PHQ for placing the e-tender on the website of J&K Police and J&K Govt. Portal.
12. File for records.



Mubassir Latifi JKPS

(AIG Provision/Transport)
For Director General of Police,
J&K-Jammu



POLICE HEADQUARTERS (Provision Section) **JAMMU & KASHMIR, JAMMU.**

Phone/Fax No: 0194-2443031/ 2443032
0191-2459029/2459255(Jammu)

(Sgr)Website: www.jkpolice.gov.in
mail: phqjk@jkpolice.gov.in

e-tender notice No 05 of 2019
Dated: - 24 . 01. 2019

SBD

1.	<p>For and on behalf of the Governor J&K State, e-tenders are hereby invited from registered OEM's or their authorized dealers to quote against this e-tender for Supply, installation & Commissioning of Intra/inter District Network project Using DMR(A turnkey communication solution) as mentioned in Annexure "A" of this tender notice. The tender notice consisting of qualifying information, eligibility criteria, specifications, bill of quantities (BOQ), set of terms and conditions of the contract and other details can be seen/ downloaded from J&K State e-procurement portal www.jktenders.gov.in from 24 .01.2019 at 1600 hours to 06.02.2019 upto 1800 hours.</p> <p>A pre bid conference shall be held at PHQ J&K Gulshan Ground Jammu on 29.01.2019 at 1600 hours , intending firms can participate in this conference to clarify any issue related to instant tender enquiry.</p> <p>Note: Only those firms should respond the tender enquiry which is capable to execute the supplies, within shortest possible time to be specified in purchase order. However, for installation of RF link reasonable time frame shall be specified in the supply order.</p>						
2.	<table><tr><td>Time/date and place for online opening of technical bid only</td><td><u>On 08 .02.2019 at 1100 hours</u> at J&K Police Headquarters, J&K Jammu.</td></tr><tr><td>Validity of tender offer</td><td>Upto 31.03.2020</td></tr></table>	Time/date and place for online opening of technical bid only	<u>On 08 .02.2019 at 1100 hours</u> at J&K Police Headquarters, J&K Jammu.	Validity of tender offer	Upto 31.03.2020		
Time/date and place for online opening of technical bid only	<u>On 08 .02.2019 at 1100 hours</u> at J&K Police Headquarters, J&K Jammu.						
Validity of tender offer	Upto 31.03.2020						
3.	<p>All tender documents attached with this invitation to tender including the specifications are SACROSANCT for considering any offer as complete offer. It is important that scanned copies of each page of the tender document duly completed, page numbered and signed are uploaded with your offer in a sequential manner and not haphazardly.</p>						

4.	<p>The tender fee has been fixed Rs 100/- only for SSI units of J&K State and all other vendors have to pay Rs. 2000/- in the shape of scanned copy of Treasury Challan deposited into State Govt. Treasury under object head 0055-Police&the same is non refundable. Treasury Challan should compulsorily mentioned (i) Name of Firm (ii) Tender No (iii) Date of opening of tender. Outside state firms where J&K Govt. Treasury is not available are allowed to furnish DD in favour of CAO PHQ J&K Jammu. However, the Govt/ Semi Govt. concerns of the J&K State claiming exemption of tender fee shall append authenticated orders, certificates etc.issued by competent authority in support of their claim. However, granting exemption from furnishing of Tender fee shall be at the sole discretion of DGP J&K Police or any officer authorized on his behalf. Tenders without stipulated tender fee shall be rejected.</p>
5.	<p><u>Earnest Money Deposit (EMD):-</u> Tender must be accompanied by a scanned copy of the Earnest Money for Rs 5000.00 in respect of SSI Unit holder of J&K and for other Rs 5,00,000/- (five lakh) or approximately 2 % cost of the quoted items duly pledged to AIG (Prov/Tpt) PHQ J&K without which tender will not be considered. The amount shall deposited in the shape of Call Deposit Receipt Valid at call/FDR/Bank Guarantee of any Nationalized Bank valid till 31.03.2020. However, all the participating bidders would upload scanned copy of the requisite EMD with the tender documents. The Earnest Money will be released to unsuccessful tenderer within one month of the final acceptance of the tender whereas in case of successful tender original EMD shall be obtained before awarding the contract & it will be treated as part of security deposit. No interest shall be payable by purchaser on the EMD deposited by the tenderer. The original CDR/FDR/TDR/BG shall be sent by post by the successful bidder to the AIG Provision & Transport c/o DGP J&K before award of contract in pursuance to Govt. order issued under No OM No A/24(2017)/651 dated 7.6.2018.</p> <p>The Address is as under :-</p> <p>PHQ J&K Peer Bagh Srinagar (from May to October)</p> <p>PHQ J&K Gulshan Ground Jammu (from November to April)</p> <p>J&K Govt. rules with regard to furnishing of EMD in respect of local Registered SSI units of J&K State shall be applicable in letter and spirit. Tenders without</p>

	EMD shall be rejected.	
6.	i) Approximate completion time	Supply of material within 30 days from the date of issue of supply order and for installation of RF Link and erection of Towers etc. reasonable time frame will be specified in the work order.
	ii) Inspection authority / place of survey	Survey of the supplied material shall be conducted by the survey board constituted by PHQ J&K .After delivery of such material in the stores. Since, this is an integrated solution comprising of different components /RF Link , as such, another survey of the project shall be conducted by the survey board after complete installation/ commissioning of the project.
	I ii) Payment terms	70 % Payment on account of cost of material supplied by the firm shall be released by the department after delivery of material and Survey by the board. 30 % after installation/commissioning of the project.
7.	Rates quoted by the firms should be on firm price basis ie including all taxes/duties/charges if any.	
8.	i. If approved supplier backs out or fails to execute the supply order after placement of order within stipulated delivery period ,the department will be at liberty to get the supplies executed from L-2 firm and differential amount between L-1 & L-2 rates will be recovered from the security deposit furnished by the approved supplier and remaining amount will be recovered from L-1 firm besides invoking other penalties which shall include black-listing of the firm etc.	
9.	Firms shall clearly indicate different taxes, duties, charges which they propose to charge as per the format of Bill of quantity (BOQ) available with the e-tender.	
10.	Conditional tender will not be accepted /entertained. It will be summarily rejected.	

11.	Department reserves the right to change the quantity of sites as mentioned in the tender.																		
12.	Department reserves the right to get the executing capacity of all the firms re-verified/checked irrespective of the registration status or any other document / information.																		
13.	Department reserves the right to cancel/reject or scrap the tender, with no consequential liability																		
14.	<p>TWO BID SYSTEM:- All bidders are required to submit their offers in two covers online as under:- (A) FIRST COVER (Technical Bid) is to be uploaded Online and scanned copies in PDF format should contain the following documents:-</p> <table border="1"> <tr> <td>i.</td><td>Tender documents (viz technical compliance, registration/existence certificates of the firms / SSI Units & performance etc.) duly page numbered completed and signed BUT WITHOUT INDICATING THE RATES QUOTED.</td></tr> <tr> <td>ii.</td><td>All pages of the technical bid/pre-qualification documents must be clearly page marked at the bottom centre of each page before scanning the same and uploaded to e-tendering portal.</td></tr> <tr> <td>iii.</td><td>Duplicate documents /pages shall not be uploaded by the bidders</td></tr> <tr> <td>iv.</td><td>Documents to be scanned ,converted to PDF format and subsequently uploaded to the portal must be scanned at 200 DPI(Dots per inch) resolution/scale.</td></tr> <tr> <td>v.</td><td>Tender fee and EMD documents must be scanned and placed in separate PDF files.</td></tr> <tr> <td>vi.</td><td>Bidders are advised not to upload any irrelevant /un-necessary documents on tender portal.</td></tr> <tr> <td>vii.</td><td>Scan copy of the NIT, all pages duly signed & stamped by the tenderer, in token of having understood and accepted the specifications, terms & conditions of the NIT.</td></tr> <tr> <td>viii.</td><td>Self attested copies of latest Income tax return.</td></tr> <tr> <td>ix.</td><td>Chartered Accountant duly vetted financial statements comprising of P 2 LA/C balance sheet for the last 02 years latest GST return.</td></tr> </table>	i.	Tender documents (viz technical compliance, registration/existence certificates of the firms / SSI Units & performance etc.) duly page numbered completed and signed BUT WITHOUT INDICATING THE RATES QUOTED.	ii.	All pages of the technical bid/pre-qualification documents must be clearly page marked at the bottom centre of each page before scanning the same and uploaded to e-tendering portal.	iii.	Duplicate documents /pages shall not be uploaded by the bidders	iv.	Documents to be scanned ,converted to PDF format and subsequently uploaded to the portal must be scanned at 200 DPI(Dots per inch) resolution/scale.	v.	Tender fee and EMD documents must be scanned and placed in separate PDF files.	vi.	Bidders are advised not to upload any irrelevant /un-necessary documents on tender portal.	vii.	Scan copy of the NIT, all pages duly signed & stamped by the tenderer, in token of having understood and accepted the specifications, terms & conditions of the NIT.	viii.	Self attested copies of latest Income tax return.	ix.	Chartered Accountant duly vetted financial statements comprising of P 2 LA/C balance sheet for the last 02 years latest GST return.
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viii.	Self attested copies of latest Income tax return.																		
ix.	Chartered Accountant duly vetted financial statements comprising of P 2 LA/C balance sheet for the last 02 years latest GST return.																		

	x.	Performance statement /turn over for last two years as APPENDIX-III of this NIT.
	xi.	Acceptance of delivery/warranty & maintenance etc.
	xii.	Acceptance regarding execution of supplies within the stipulated time frame.
	xiii.	PAN no/GST/TIN No. Self-attested photocopies thereof be appended.
	xiv.	Check list for tenders as per APPENDIX-IV of this NIT.
	xv.	Any other relevant document which the firms wishes to submit
	xvi.	<p>Samples of the items wherever asked in Annexure 'A' should reach in Police Central Store Jammu upto cut off time of opening of technical bid. No sample shall be accepted after cut off time of 1100 hours of date of opening of technical bid ie 08.02.2019. Incharge Police Central Store Jammu will furnish list of samples deposited by the participating firms in Police Central Store within stipulated time frame indicating name of the firm & item for which sample has been deposited .</p> <p>In case the firm intend to re-evaluate the samples already deposited in Police Central Store Jammu in response to any earlier tender, the sample of such firm already lying in Police Central Store shall be acceptable for re-evaluation in response to this tender enquiry.</p>
15.	(B) SECOND COVER (Commercial/Price Bid) should contain the following:-	
	i.	<p>Rate quoted by the firm should be on firm price basis as per Bill of Quantities (BOQ) of the e-tender to be downloaded from the website and Rates should be carefully quoted offline and then uploaded</p> <p>(Rate quoted shall be final.</p> <p>The Zero basic cost quoted for any item in BOQ will be treated as Nil Quoted</p>
	ii.	Rates quoted shall be final till the validity of the contract i.e. upto 31.03.2020 with provision of further extension if finally approved by competent authority.
16.	On due date of opening of tenders i.e. 08.02.2019 at 1100 hours, technical bids	

	only shall be opened and technical evaluation process of the technical bids /samples shall start. Those who qualify the technical bid on a/c documents uploaded by them shall be informed online with regard to opening of financial bids of the technically qualified firms.
17.	Security Deposit: - The approved tenderer will have to furnish security deposit @ 5% of the total value in the shape of CDR/FDR valid for one year issued by a Nationalized/Scheduled Banks pledged to AIG Provision & Transport PHQ J&K Jammu/Srinagar, at the time of signing of Deed of Agreement to ensure satisfactory performance of the contract, warranty period/agreed contract. The charges on stamps etc. (cost of documents in totality) shall be borne by the supplier while executing the agreement. (No interest shall be paid by the department on the Security deposit). J&K Govt rules for Security Deposit in respect of local SSI Units shall be applicable
18.	Guarantee/Warranty:-Except as otherwise provided in the invitation to the tender, the approved supplier hereby declares that supplied items shall be in all respects strictly as per RFP/requirement of the department. The approved supplier hereby guarantees the warranty of the supplied system ie On site Complete Comprehensive Warranty for RF link, Dispatcher, Radio Server and Repeaters for 05 years ,Radios for 02 years and radio accessories for 18 months and AMC for RF link, Dispatcher, Radio Server and Repeaters only for a period 03 years after expiry of warranty period .
19.	Liquidity Damages:- Successful tenderer shall have to complete the execution of supply, installation/commissioning of Lab within stipulated period as would be mentioned in the supply order. J&K Police reserves the right to impose liquidity damages of 1.5 % for delay upto 3 months, 2 % for delay upto 06 months & 5% upto 6 months to 01 year of the cost of un-supplied material if the supplies are not executed or installation is not completed within stipulated time frame.
20.	As soon as the acceptance of the tender is communicated to the successful tenderers online, the contract shall be binding on him. The earnest money of the tenderer who backs out or withdraw his tender or fails to abide by it after acceptance thereof is communicated/posted to him shall be forfeited besides other penal remedies that may be available to the Govt. of the J&K under the law for the time being in force in the State of J&K.
21.	The successful tenderer shall have to enter into an agreement on prescribed proforma (immediately after the issue of supply order) with the Department for due performance of the contract which shall be invariably furnished before the supply is made.

22.	The tenderer are required to furnish an authenticated copy of latest GST return. The PHQ shall be at liberty to put to scrutiny, verification etc. the GST clearance so furnished by the successful tenderer.
23.	The authorities reserve absolute powers to reject or accept any tender or part thereof without assigning any reason and without any legal obligations. Any clause incorporated in the tender (not conforming to the NIT in any manner) shall make such an offer liable for rejection. Therefore, all the terms and conditions of the tender Notice including technical specifications should be carefully studied by the prospective bidders for the sake of complete and comprehensive bid submission. Failure to comply with any of the conditions stipulated in the e-tender or instructions or the offer with insufficient particulars/documents shall lead to out-right rejection of the tender offer.
24.	If after the registration/placement of orders/execution of the agreement and formally depositing the security money, in case the tenderer backs out or fails to execute the work, the security deposited will be forfeited besides imposing any other penal provisions as the department may decide to invoke.
25.	The formal deed incorporating the terms of the contract will be executed by the successful tenderer immediately after receipt of supply order. Failure to execute such bond/deed shall not however prevent the contract from being enforced against the tenderer. Any loss sustained by the Govt. as a result of re-tendering the contract shall be recovered from the defaulter, besides other penal provisions as the department may decide.
26.	If at any stage of the tender process two or more bidders are found in collusion between /among themselves with the intent to reduce competition, set price, share technical expertise ,share business information /decision ,control/share production and or distribution of products and raise prices ,all such tenders shall be out rightly rejected.
27.	Either OEM himself or his authorized dealer/dealers can participate in the tendering process for any particular item/items .However, both OEM and his authorized dealer cannot participate for same item/ items in the tendering process.
28.	If at any stage of tender process any bidder/s is/are found influencing any Government Servant associated with or handling the tender process and supplies thereof, bid of such tenderer/s shall be rejected besides invoking penal action under rules.
29.	All legal proceedings arising out of any dispute between the parties shall have to be settled in the Courts situated in Srinagar and Jammu and not elsewhere

30.	The supplier shall not sublet the contract or any part thereof to any other agency
31.	The Department reserves the right to add or suitably modify the terms and conditions (without prior notification) as per exigencies and hence above shall not be construed as all inclusive.
32.	Bidders submitting their bids on-line shall only be accepted and manual bids shall be rejected and no document other than mentioned in the NIT shall be accepted manually.
33.	PHQ may call any bidder at any stage of the tendering process for seeking any clarification.
34.	The bidder should furnish an undertaking APPENDIX-II of this NIT stating that he /she is not connected in any manner with any other bidder in this tender with respect to manufacturing ,distribution, supply, in sharing business information/documents price of the item etc. for the items quoted in this bid and has not been blacklisted by any Central /State Governments . If this is found to be incorrect, his/her tender would be liable to be rejected without any further notice.
35.	The detailed NIT, SBD and BOQ are available on J&K State e-Procurement portal.
36.	The rates approved by this Hqrs in terms of this tender notice shall not be used as rate contract by other Government department.
37.	The approved supplier has to ensure the reasonability of rates quoted by the firm. If at any stage it is found that firm has charged lesser rates of the same item/ items from any other private State/Central Govt. organizations, as have been charged from J&K Police suitable action under rules shall be taken against approved supplier and excess amount charged from J&K Police shall be recovered.


 Mubassir Latifi
 (AIG Provision/Transport)
 For Director General of Police,
 J&K-Jammu

APPENDIX-I

MANUFACTURER'S AUTHORIZATION LETTER/CERTIFICATE;

To,

The Director General of Police
J&K, Jammu/Srinagar.

Subject:- _____

Sir,

1. Please refer to your e-tender enquiry (NIT) No 05 of 2019 dated 24.01.2019 We _____ who are proven and reputable Manufacturers of _____ (name and description of the goods offered in the tender) having factories at _____ hereby authorize M/s _____ (name and address of the agent) to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred tender enquiry documents for the above said goods manufactured by us.
2. We also hereby extend our full warranty, CMS, support as per the conditions of contract, read with modifications, if any, in the special conditions of contract for the goods and services offered for supply by the above firm against this tender enquiry document.

Yours faithfully,

Signature with date, name and designation

For and on behalf of M/s _____

(Name and address of the Manufacturers)

Note:-

1. This letter should be on the letter head of the manufacturing firm and should be signed by the person who is competent having the power of attorney.
2. Scan copy of the original letter must be attached with tender documents.

SIGNATURE OF THE TENDERER.

APPENDIX-II

Reference e.NIT No 05 of 2019 dated- 24.01.2019.

To,

The Director General of Police
J&K, Jammu/Srinagar.

Sir,

1. I _____ hereby state that I am not connected in any manner with any other bidder in this tender in sharing business information/documents and price quoted in this bid.
2. I further state that if this is found to be correct, the police department is at liberty to reject my tender.
3. I further certify that my concern has neither blacklisted nor banned by any central or state organizations to participate in tendering process.

Yours faithfully,

Signature with date, name and designation

For and on behalf of M/s _____

(Name and address of the tenderer)

Note:-

- a. This undertaking should be on the letter head of the tenderer firm and should be signed by the authorized person.
- b. Scan copy of the original letter must be attached with tender documents.

APPENDIX-III

Performance statement for last two years

Name of the firm	
Description of work executed	
Quantity on order	
Value	
Original execution period	
Whether executed in stipulated time frame or other wise	
Extension sought for final execution	
Reasons for delay in execution (if any)	
Past performance in % age upto 1 / 2 crores	
Past performance in % age above 2 crores	

Signature of Tenderer

APPENDIX-IV

General instructions/CHECK LIST FOR TENDERERS;

Before submission of tender documents, the tenderers should check whether they have complied with the following requirements or otherwise:-

<u>S.No</u>	<u>Requirement to be checked before submission of the tender</u>	<u>Complied</u> <u>(Please indicate YES or</u> <u>NO after complying</u> <u>with the requirement.</u>
1.	The tenderers for their own ease shall fill in relevant details of NIT offline & upload the same after ensuring accuracy	
2.	Whether tender fee scan copy is enclosed, with the technical bid?	
3.	Whether Earnest Money Deposit (EMD) scan copy is enclosed with the technical bid?	
4.	If an SSI Unit of J&K State, the same is indicated in the tender and scan copy of the valid registration/functional certificate is enclosed or not?	
5.	Whether scanned copies of complete tender documents are up-loaded in the technical bid duly signed having official seal on all pages or not. However, the quoted items may also be ticked so that quoted items can be easily checked?	
6.	Whether tender documents are submitted in two bid system i.e. Technical and Financial Bids separately as per tender enquiry or not?	
7.	Whether offer validity as required in tender enquiry is accepted and indicated in your tender document or not?	
8.	Whether terms of execution required in tender enquiry is accepted and indicated in your tender document or not?	
9.	Whether payment terms as required in the tender enquiry is accepted and indicated in your tender document or not?	
10.	Whether performance statement for last 2 years as required in tender enquiry in the format is enclosed or not. If not, reason thereof is given?	

11.	Whether indicated in the tender document, if your firm's business dealings is banned by any Govt/Private agency or recommended for blacklisting or not?	
12.	The complete commercial quote should be in Indian Rupees only. Currency of price should be clearly mentioned (wherever applicable).	
13.	Tenderers are required to indicate Basic Rate, +GST in the relevant columns of the BOQ.	
14.	Tenderer will attach justification of price quoted which should include the recently executed contracts with Govt/Semi Govt Organizations etc.	
15.	No column should be left blank. Wherever amount is not quoted, the column should be clearly marked as 'Nil'.	
16.	Whether authorization certificate of the OEM (in case of authorized dealer of the OEM) has been uploaded or not?	
17.	Valid registration certificate of approved dealer with central/state sales tax department for the items quoted	
18.	Whether latest GST return has been uploaded	
19.	SSI unit -registration certificate (local SSI units of J&K State only)	
20.	Whether copy of latest Income tax returns has been uploaded.	
21.	Govt. supply orders for same if any available have been uploaded or not	
22.	Whether OEM registration/existence certificate has been uploaded or not?	
23.	Whether other documents as asked in the SBD have been uploaded	

ANNEXURE 'A' OF E-TENDER NO 05 OF 2019 DATED:-24 .01.2019

INTRA - INTER DISTRICT NETWORKS USING DMR **(FOR FUTURE COMMUNICATION REQUIREMENT)** **SYSTEM OVER VIEW**

In Intra District Communication Network, Static Stations will be used to communicate locally within the District on voice and DATA with location tracking. In Inter District Network, IP based DMR Repeaters will be installed at strategic locations to give maximum coverage and multiple repeater sites will be connected through IP on 20 Mbps RF Radio Link for voice and data transfer. An independent, secure 50 Mbps RF Radio Link will be established between PHQ, PCR Jammu to PHQ, and PCR Srinagar for voice and DATA.

The proposed Digital Mobile Radio (DMR) Networks should enable these key benefits:-

- **High Security:** Prevents unauthorized user from accessing the system, in addition the network manager disable feature makes it easy for user to remotely deactivate a lost or stolen radio.
- **Enhanced encryption:** Encryption for voice and data for enhanced security
- **Higher Capacity :** Delivers better capacity than of an analog conventional system using TDMA two slot technology
- **Integrated GPS :** Locate mobile teams using integrated GPS
- **Voice Logging:** Voice and events would be recorded and preserved.
- **Audio:** Loud and Intelligent Digital Audio feature that automatically adjusts the radio Volume according the environments noise Level.
- **Caller ID, Selective Calling, Group Calling and other DMR features.**
- **Transmit voice interrupt:** Enables a user to interrupt another radio conversation to deliver critical communication exactly when and where immediately required for supervisory control.
- **Remote monitoring.** Remote target radio's PTT is switched on.
- **Fast Access for those who need it most:** user interrupt feature enables the key officials or personnel to interrupt existing communication during emergency situations.
- **Save on infrastructure :** Two slot DMR technology require less number of repeaters and more spectrum efficiency
- **In-built Bluetooth:** For hands free operation
- **Emergency Button:** Orange/Red button on the top of the radio should be programmable to send an alert to a control Room or dispatcher during an emergency situation.

- **Text Messaging:** Pre-defined and editable messages from keypad.

BIDDERS PRE-QUALIFICATIONS	
The project is a turnkey based complete solution with onsite comprehensive warranty for RF link, Dispatcher, Radio Server and Repeaters for a period of 05 years ,radios for 02 years and radio accessories 18 months followed by 03 years Comprehensive on onsite AMC of RF link, Dispatcher, Radio Server and Repeaters. The Comprehensive onsite warranty will start from the date of successful installation and commissioning of complete project.	
a)	Bidders must be OEM or authorized distributor of OEM with valid Dealer Possession License from WPC.
b)	The successful bidder has to follow the process of obtaining the necessary licenses, if required, from WPC & DOT in association with the department. However, necessary spectrum charge as applicable shall be paid by the department.
c)	OEM for the offered system should have own registered office with services centre in India and to deploy experienced services engineer in J&K at capital cities Jammu & Srinagar to ensure prompt service and support after sales.
d)	Offered Digital Radios and Digital Repeaters should be listed in DMR Association.
e)	OEM should provide an undertaking/affidavit for essential spares required for the system after sales of the offered product for a period of 10 years at least.
f)	Successful bidder will be responsible for installation of equipment and fabrication of digital Networks and will demonstrate key features.
g)	The Bidder should offer Portable, Mobile, Static digital radios & Repeater sets etc. of single OEM. Offered Radios shall be of same protocol, type of emission and signaling scheme and be mutually interoperable with existing DMR VHF Radios of J&K Police and other DMR manufactured by different firms so that full functional network can be established by using these radios.
h)	Necessary technical training regarding Operational, Repairing and Maintenance of the equipment. The training shall be given for 15 technical persons at Jammu and Srinagar Cities and also provide original technical services manual for proper maintenance and repair of equipment after Comprehensive on onsite AMC
i)	While every effort has been made to provide comprehensive and accurate background information and requirements and specifications, Bidders must form their own conclusions about the System Integration support required.
j)	Flexibility: The Digital Radio Network system must have flexibility for future up-gradation as the said system is expected to serve the communication requirement of Jammu & Kashmir Police for next 10 years at least
k)	Firm must produce certificate of any Govt. Accredited Lab or National Accreditation Board for Testing and Calibration Laboratories (NABL) approved Laboratory or International Laboratory Accreditation Corporation (ILAC) approved Laboratory. List of <i>Certificates</i> be attached in proper order clearly highlighting the parameter / parameters for which it belong.
l)	Technically & financially qualified bidder should give proof of concept of the project by demonstrating all offered system features especially wide area coverage in comparison with existing Analog Radio networks.
m)	The intending firms may be called for demonstration of their offered items at the time of technical evaluation on no cost no commitment basis to ascertain parameters, features etc. of their offered products solutions .

Item No. 01 Technical Specifications of Dispatcher Console/ Radio Server

S.No	Technical Specifications of Dispatcher Console/ Radio Server
01	<p>System Configuration:- CPU i5 or above, RAM 4GB, HDD 500GB or above, embedded or external sound card, Speaker , Mike, Head phone with Mike, TFT Screen 18.5" or more, multimedia key board, licensed Windows 8.1/10 Professional, Antivirus (complete) with all application software's for the system.</p> <p>Radio - Server :- The Dispatcher /server can be co-located or at different locations (depends on user requirement) via IP. Single server should be able to handle multiple different radio networks simultaneously and have provision to connect at least 6 Control Stations per Radio Server.</p> <p>Dispatcher features :- Must handle all type of calls (Private, Group and All call), Remote Monitoring, Emergency Calls, Voice Recording for all channels in MP3 format in connected network, Radio Check, Radio Kill and Un-kill, Call Alert, Subscriber Identification. Black list for Automatic Blocking of unauthorized radios in the Digital Radio network Facility for voice and event logging at both Dispatcher Consoles and Radio servers</p> <p>GPS Tracking/ AVL:- Real-time subscriber location monitoring. Should support different types of maps like Online Google Maps, Open street map and offline raster maps, Shape file integration. Track animation for specified period of time, Geo-fencing, Automatic location request, Location request by event, Manual location request Integration with Google Earth and Google Maps (export locations to KML)</p> <p>Database back-up and restore:- At least for one month</p> <p>Search by :- Incoming/Outgoing, Source/Destination/Talk group/Channel/Time, Voice Call Annotation</p> <p>Rules & Alerts:- Rules and Alerts for events, GPS Rules etc</p> <p>Event Logging:- Subscriber Activity Report, Report Wizard</p> <p>Text Messaging Service:- Must be available</p>

Item No. 01 –A Technical Specifications of 8 Port Web Managed Switch 8

S.No	Technical Specifications of 8 Port Web Managed Switch	
01	No. of Ports	8 Ports
	Flow Control	IEEE 802.3x
	Jumbo Frames:	1536 Bytes
	QoS Support	Supports 802.1p QoS
	Switching Fabric	1.6 Gbps
	Standards	IEEE 802.3 10BASE-T Ethernet (twisted-pair copper) IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)
	Protocol	CSMA/CD
	Data Transfer Rates	Fast Ethernet: 100 Mbps (full duplex)
	Media Interface Exchange	Auto MDI/MDIX adjustment for all ports
	MAC Address Table	1K
	Packet Filtering/Forwarding Rates	Ethernet: 14,880 pps per port Fast Ethernet: 148,800 pps per port
	RAM Buffer	768 KBytes per device
	DC Input	External 5 V/1 A Level

Item No. 02 Technical Specifications of Digital VHF Repeater Set (SAMPLE REQUIRED to deposit in Police Central Store Jammu)		
S.No	General	Parameters
1.	i.Frequency Range	136-174 MHz (Full Band)
	ii.No. of Channels	16 or more (Certificates Required)*
	iii.Channel Spacing	12.5 KHz or better (Certificates Required)*
	iv.Frequency Stability	±1.5 PPM or better (Certificates Required)*
	v.Protocol & Technology	Digital TDMA 2 slot technology (Certificates Required)*
	vi.Types of Emission(Modulation)	Analog: 11K0F3E Digital: 4FSK or equivalent technique complying to open standard/non-proprietary Digital Protocol as defined by an international standards body like ETSI/FCC etc. (Certificates Required)*
	vii.Weight	Less than 15 kg
	viii.Power Source	i. DC 13.8 Volt ±15% ii. AC 230 volt ±15% , 50 Hz iii. There should be provision to shift automatically on DC supply during mains failure & when mains supply restored it should be shifted on mains from DC supply.
	ix.Protection	(i) Reverse Polarity Protection (ii) Protection against high VSWR
2.	Transmitter	
	i.R.F Power Output	45 Watt or more Programmable/Selectable) (Certificates Required)*
	ii.FM Hum/Noise	-40 dB or better (Certificates Required)*
	iii.Modulation Limiting	±2.5 KHz @ 12.5KHz (Certificates Required)*
	iv.Adjacent Chanel Power	-60 dB or better
3	v.Audio Distortion	Less than 3% (Certificates Required)*
	Receiver	
	i. sensitivity	i) Analog: 0.30 µV for 12dB SINAD or better ii) Digital: 0.30 µV at 5% BER or better (Certificates Required)*
	ii. Selectivity(Adjacent Channel)	60 dB or better (Certificates Required)*
	iii.Inter Modulation	70 dB or better (Certificates Required)*
	iv.Audio Response	+1,-3dB (Certificates Required)*
4	v.Rated Audio Distortion	Less than 3% (Certificates Required)*
	Environmental Specifications	
	i)Operating temperature	- 30° C to +60 ° C
	ii)Storage temperature	-40° C to +70 ° C
5	iii)Humidity	Maximum 95% @ + 40° C Non condensing
	Networking	Should be capable to support IP Site connects
6	Interface	Ethernet port RJ-45 to provide a) Wide area IP connectivity for voice and DATA. b) Remote monitoring and status check.
7	Accessories	
	i.Battery Cable & Mounting fixtures	Should be supplied with Repeater
	ii.Antenna	3dB / 6dB gain Omni Directional antenna with 45 meter loss less RF cable for base station as per requirement.
	iii.Programming Kit	17. No. programming software and hardware required with the consignment.
	iv.Literature	i) Users 'manual with each repeater set should be provided free of cost in soft as well as hard copy. ii) 05 No.'s of technical repairing manual with complete block diagram, circuit layout etc should be provided in soft as well as hard copy.
8	Field trial	The actual performance of the repeater set will be assessed. Field trial of the equipment will be conducted by a technical committee in presence of Vendor/ Firm representative to ascertain the user satisfaction before the proposal is accepted. Repeater equipment with all accessories should be provided by the participated firms on no cost No commitment basis.
9	Self-supporting Triangular Mast/Towers	The self supporting Triangular Masts/Towers, height as per requirement, with concrete bases, lightening protection design for the repeater Sites which shall be able to withstand up to 180 Kms/Hour wind speed.

Item No. 02-B**Technical Specifications of 12 Port Web Managed Switch**

S.No	Technical Specifications of 12 Port Web Managed Switch	
01	No. of Ports	12 Ports
	Flow Control	IEEE 802.3x
	Jumbo Frames:	1536 Bytes
	QoS Support	Supports 802.1p QoS
	Switching Fabric	1.6 Gbps
	Standards	IEEE 802.3 10BASE-T Ethernet (twisted-pair copper) IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)
	Protocol	CSMA/CD
	Data Transfer Rates	Fast Ethernet: 100 Mbps (full duplex)
	Media Interface Exchange	Auto MDI/MDIX adjustment for all ports
	MAC Address Table	1K
	Packet Filtering/Forwarding Rates	Ethernet: 14,880 pps per port Fast Ethernet: 148,800 pps per port
	RAM Buffer	768 Kbytes per device
	DC Input	External 5 V/1 A Level

Item No. 03 Technical Specifications of Static Digital VHF Transceiver Set (Sample required to be deposited in Police central Store Jammu)

1	General	
	i.Frequency Range	136-174 MHz (Full Band)
	ii.No. of Channels	255 or higher
	iii.Channel Spacing	12.5 KHz or better
	iv.Frequency Stability	± 1.5 PPM or better (Certificates Required)*
	v.Protocol & Technology	Digital TDMA 2 slot Technology (Certificates Required)*
	vi.Types of Emission(Modulation)	Analog: 11K0F3E Digital: 4FSK or equivalent technique complying to open standard/non-proprietary Digital Protocol as defined by an international standards body like ETSI/FCC etc. (Certificates Required)*
	vii.Type of Operation	Simplex, Press to talk
	viii.Weight	Less than 2000 grams
	ix.Power Source	13.8 Volt DC $\pm 15\%$
2	Transmitter	
	i.R.F Power Output	25 Watt Programmable /Selectable)
	ii.FM Hum/Noise	-40 dB or better
	iii.Modulation Limiting	± 2.5 KHz @ 12.5KHz
	iv.Adjacent Chanel Power	-60dB or better
	v.Audio Distortion	Less than 3%
3	Receiver	
	i.sensitivity	(i)Analog: 0.30 μ V for 12dB SINAD or better ii) Digital: 0.30 μ V at 5% BER or better
	ii.Selectivity(Adjacent Channel)	60 dB or better
	iii.Inter Modulation	70 dB or better
	iv.Audio Output	3W or more
	v.Audio Response	+1,-3dB
4.	vi.Rated Audio Distortion	Less than 3%
	Environmental specification	
	i.Operating temperature	- 30° C to +60 ° C
	ii.Storage temperature	-40° C to +70 ° C
	iii.Humidity	Maximum 95% @ + 40° C Non condensing
	iv.Environmental Standard i.e. Low & High Temperature, Low pressure, Temperature, Shock Solar Radiation, Rain, Salt Fog, Vibration, Dust & Shock	As per MIL 810 C,D,E,F.(Bidder must produce certificate of any Government accredited Lab. or NABL or ILAC approved Lab for desired or better MIL Standard). (Certificates Required)*
5	v.Dust & Water Intrusion	IP 54 or better (Certificates Required)*
	Accessories	
	i.Microphone	DTMF Microphone should be supplied with Radio
	ii.Battery Cable & Mounting fixtures	Should be supplied with Radio
	iii.Antenna	i.3dB/6dB gain Omni Directional antenna with 30 meter RF cable for base station should be provided with each radio set .
	iv.Programming Kit	10. No. programming software and hardware required with the consignment.

	v.Literature	<p>i) Users 'manual with each radio sets should be provided free of cost in soft as well as hard copy.</p> <p>ii) 05 No's of technical repairing manual with complete block diagram, circuit layout etc should be provided in soft as well as hard copy.</p>
6.	Configuration	
	i) Caller ID display	Should be available
	ii) Busy channel lock out	Should be available
	iii) Scan with priority	Should be available
	iv) Transmitter Time Out Timer (TOT)	The time should be programmed to best suit the application.
	v) LCD Display	Should be available
	vi. Mode of calls	Selective call, Group call, Inter and Intra group call facility
	vii. Remote Radio Kill/Stun/Revive facility	Should be available
	viii. Mode of operation	Radio should operate in analog mode and digital mode. (Compatible with existing all types of VHF analog radio sets viz.: Motorola, ICom, Kenwood, Vertex etc.)
	ix. Emergency Button	Allows a user to obtain help in critical situation.
	x. SMS Texting	Should be capable of sending predefined messages and short messages from the keypad as optional
	xi. Programming	Front panel programming with password protection, or PC programming
	xii. Support GPS	Inbuilt GPS System with accuracy of less than 10 meters
	xiii. Networking	Should be IP based for automatic roaming etc
	xiv. GIS	Radio should have application protocol interface along with software applications to provide locations and messaging on PC/Console.
7.	Field trial	The actual performance of the Radio set will be assessed. Field trial of the equipment will be conducted by a technical committee in presence of Vendor/ Firm representative to ascertain the user satisfaction before the proposal is accepted. Radio equipment with all accessories should be provided by the participated firms on no cost No commitment basis.
8.	Communication Security:-	The radio set should have provision of standard facility for installation of encryption device. Till SAG approved encryption is made available the vendor will provide commercial grade 256 Bit AES encryption. The commercial grade encryption will be deleted by the vendor at no extra cost at the time of fitment of SAG approved encryption. The OEM of the Radio should give an undertaking that they will give details of interface for developing encryption in INDIA when ever required. The developing agency in INDIA will give NDA(Non disclosure agreement) to OEM. The radio model offered should interoperate with existing Radios held by J&K Police (Certificates Required)*
9.	Inbuilt Bluetooth	Inbuilt Bluetooth for hands free operation FOR VOICE ONLY

Item no. 04 Technical Specifications of Mobile Digital VHF Transceiver Set
(Samples are required to deposited in the Central Store Jammu upto cut off time of opening of technical bids)

S 1	General	
	i.Frequency Range	136-174 MHz (Full Band)
	ii.No. of Channels	255 or higher
	iii.Channel Spacing	12.5 KHz or better
	iv.Frequency Stability	±1.5 PPM or better (Certificates Required)*
	v.Protocol & Technology	Digital TDMA 2 slot Technology (Certificates Required)*
	vi.Types of Emission(Modulation)	Analog: 11K0F3E Digital: 4FSK or equivalent technique complying to open standard/non-proprietary Digital Protocol as defined by an international standards body like ETSI/FCC etc. (Certificates Required)*
	vii.Type of Operation	Simplex, Press to talk
	viii.Weight	Less than 2000 grams
	ix.Power Source	13.8 Volt DC ±15%
2	x.Protection	(i)Reverse Polarity Protection (ii) Protection against high VSWR
	Transmitter	
	i.R.F Power Output	25 Watt Programmable /Selectable)
	ii.FM Hum/Noise	-40 dB or better
	iii.Modulation Limiting	± 2.5 KHz @ 12.5KHz
	iv.Adjacent Chanel Power	-60dB or better
3	v.Audio Distortion	Less than 3%
	Receiver	
	i.sensitivity	(i)Analog: 0.30 µV for 12dB SINAD or better ii) Digital: 0.30 µV at 5% BER or better
	ii.Selectivity(Adjacent Channel)	60 dB or better
	iii.Inter Modulation	70 dB or better
	iv.Audio Output	3W or more
4.	v.Audio Response	+1,-3dB
	vi.Rated Audio Distortion	Less than 3%
	Environmental specification	
	i.Operating temperature	- 30° C to +60 ° C
	ii.Storage temperature	-40° C to +70 ° C
	iii.Humidity	Maximum 95% @ + 40° C Non condensing
	iv.Environmental Standard i.e. Low & High Temperature, Low pressure, Temperature, Shock Solar Radiation, Rain, Salt Fog, Vibration, Dust & Shock	As per MIL 810 C,D,E,F.(Bidder must produce certificate of any Government accredited Lab. or NABL or ILAC approved Lab for desired or better MIL Standard). (Certificates Required)*
	v.Dust & Water Intrusion	IP 54 or better (Certificates Required)*
	Accessories	
	i.Microphone	DTMF Microphone should be supplied with Radio
5	ii.Battery Cable & Mounting fixtures	Should be supplied with Radio
	iii.Antenna	0dB/3dB gain whip antenna with 3 meters co-axial cable with connector , magnetic base / mounting brocket for vehicle use should be provide with each radio set.

	iv.Programming Kit	10. No. programming software and hardware required with the consignment.
	v.Literature	i) Users 'manual with each radio sets should be provided free of cost in soft as well as hard copy. ii) 05 No's of technical repairing manual with complete block diagram, circuit layout etc should be provided in soft as well as hard copy.
6.	Configuration	
	i)Caller ID display	Should be available
	ii)Busy channel lock out	Should be available
	iii)Scan with priority	Should be available
	iv)Transmitter Time Out Timer (TOT)	The time should be programmed to best suit the application.
	v)LCD Display	Should be available
	vi.Mode of calls	Selective call, Group call, Inter and Intra group call facility
	vii.Remote Radio Kill/Stun/Revive facility	Should be available
	viii.Mode of operation	Radio should operate in analog mode and digital mode.(Compatible with existing all types of VHF analog radio sets viz:: Motorola, ICom ,Kenwood, Vertex etc.)
	ix.Emergency Button	Allows a user to obtain help in critical situation.
	x.SMS Texting	Should be capable of sending predefined messages and short messages from the keypad
	xi.Programming	Front panel programming with password protection ,or PC programming
	xii.Support GPS	Inbuilt GPS System with accuracy of less than 10 meters
	xiii.Networking	Should be IP based for automatic roaming etc
	xiv.GIS	Radio should have application protocol interface along with software applications to provide locations and messaging on PC/Console.
7.	Field trial	The actual performance of the Radio set will be assessed. Field trial of the equipment will be conducted by a technical committee in presence of Vendor/ Firm representative to ascertain the user satisfaction before the proposal is accepted. Radio equipment with all accessories should be provided by the participated firms on no cost No commitment basis.
8.	Communication Security:-	The radio set should have provision of standard facility for installation of encryption device. Till SAG approved encryption is made available the vendor will provide commercial grade 256 Bit AES encryption. The commercial grade encryption will be deleted by the vendor at no extra cost at the time of fitment of SAG approved encryption. The OEM of the Radio should give an under taking that they will give details of interface for developing encryption in INDIA when ever required. The developing agency in INDIA will give NDA(Non disclosure agreement) to OEM. The radio model offered should interoperate with existing Radios held by J&K Police (Certificates Required)*
9.	Inbuilt Bluetooth	Inbuilt Bluetooth for hands free operation FOR VOICE ONLY

Item no. 05 Technical Specifications of Hand held Digital VHF Transreceiver Set
(Samples are required to deposited in the Central Store Jammu upto cut off time of opening
of technical bids)

S.No.	General	
1	i) Frequency Range	136– 174 MHz (Full Band)
	ii)No. of channel	255 or higher
	iii)Channel spacing	12.5 KHz or better
	iv)Frequency Stability	± 1.5 PPM or better (Certificates Required)*
	v)Protocol & Technology	Digital TDMA 2 slot Technology (Certificates Required)*
	vi)Type of Emission(Modulation)	Analog: 11K0F3E Digital: 4FSK or equivalent technique complying to open standard/non-proprietary Digital Protocol as defined by an international standards body like ETSI/FCC etc. (Certificates Required)*
	vii) Type of operation	Simplex press to talk
	viii)Type of Antenna	Rugged flexible Helical Antenna
	ix.Weight	Less than 450 grams with battery
	x)Power source	Lithium-ion or Lithium polymer battery pack of 2000 mAh or more with belt clip (Bidder shall mention DC voltage and chemistry).
	xi) Protection	i. Reverse polarity protection ii. Protection against high VSWR
2.	Transmitter	(Certificates Required)*
	i)RF Power output	1 / 5 watt (programmable/ selectable)
	ii)FM Hum /Noise	-40 dB or better
	iii)Modulation Limiting	± 2.5 KHz @ 12.5 KHz.
	iv) Adjacent Channel power	-60 db or better
	v) Audio Distortion	Less than 3%
3	Receiver	(Certificates Required)*
	i)Sensitivity	i)Analog:- 0.30μv for 12 dB SINAD or better. ii)Digital :- 0.30μv at 5% BER or better
	ii)Selectivity Adjacent channel	60 dB or better
	iii)Inter modulation	60 dB or better
	iv)Audio output	500 mW
	v) Audio response	+ 1, -3 dB
	vi)Rated Audio Distortion	Less than 3%
4.	Environmental specification	
	i)Operating temperature	Operating temperature
	ii)Storage temperature	Storage temperature
	lii)Humidity	Maximum 95% @ + 40° C Non condensing
	iv) Environmental standard i.e) low & high Temperature, Low pressure, Temperature Shock , Solar Radiation ,Rain , Salt fog , Vibration, Dust & shock.	(Certificates Required)*
	v) Dust & water Intrusion	IP 57 or better (Certificates Required)*
5	Accessories	
	i)Battery Charger	Single unit smart charger (capable to charge Lithium-Ion, , Lithium- Polymer batteries.
	ii)Inbuilt Bluetooth	Inbuilt Bluetooth for hands free operation FOR VOICE ONLY
	iii) Programming kit	All necessary programming software and hardware required for programming of the set
	iv) Literature	i) Users 'manual with each radio sets should be provided free of cost in soft as well as hard copy.

		ii) Technical repairing manual with complete block diagram, circuit layout etc should be provided as per user's requirement in soft as well as hard copy.
	v) Battery Pack	One extra Lithium-Ion or Lithium- Polymer battery pack with each radio set.
	vi) Inbuilt Bluetooth	Inbuilt Bluetooth for hands free operation FOR VOICE ONLY
6	Configuration	
	i) Caller ID display	Should be available
	ii) Facility for Locking the Channel or Key Pad Locking	Should be available
	iii) Scan with Priority	Should be available
	iv) Transmitter Time Out Timer (TOT)	The time should be programmed to best suit the application
	v) LCD Display	Should be available
	vi) Mode of calls	Selective, group call, inter and intra group call facility
	vii) Remote Radio Kill/Stun/Revive facility	Should be available
	viii) Mode of Operation	Radio should operate in Analog mode and Digital mode. (Compatible with existing all type of VHF analog radio sets viz. Motorola, ICOM, Kenwood, vertex etc.)
	ix) Emergency Button	Allows a user to obtain help in critical situations.
	x) SMS Texting	Should be capable of sending predefined messages and short messages from the keypad
	xi) Programming	Front Panel Programming with password protection, PC Programming.
	xii) DTMF Front Panel keypad with back lit	Should be available
	xiii) Battery Strength bar	Should be available
	xiv) Support GPS	Inbuilt GPS System with accuracy of less than 10 meters
	xv) GIS	Radio should have application protocol interface along with software application to provide locations and messaging on PC/console
	xvi) Networking	Should be IP based for automatic roaming etc
7	Field Trial	The actual performance of the Radio set will be assessed. Field trial of the equipment will be conducted by a technical committee in presence of Vendor/ Firm representative to ascertain the user satisfaction before the proposal is accepted. Radio equipment with all accessories should be provided by the participated firms on no cost No commitment basis.
8	Communication Security:-	The radio set should have provision of standard facility for installation of encryption device. Till SAG approved encryption is made available the vendor will provide commercial grade 256 Bit AES encryption. The commercial grade encryption will be deleted by the vendor at no extra cost at the time of fitment of SAG approved encryption. The OEM of the Radio should give an under taking that they will give details of interface for developing encryption in INDIA when ever required. The developing agency in INDIA will give NDA (Non disclosure agreement) to OEM. The radio model offered should interoperate with existing Radios held by J&K Police (Certificates Required)*

ITEM NO. 06 TECHNICAL SPECIFICATIONS OF RF IP LINK

S.No.	THE FIRM SHALL PROVIDE COMPLETE SOLUTION TO CONNECT BELOW MENTIONED 12 LOCATIONS ON RF Link.
1	R.F IP Link from Srinagar (PCR & PHQ) to Jammu(PCR & PHQ) with minimum through put of 50 Mbps
2	<p>R.F IP Link for Branches: On minimum through put of 20 Mbps for IP Wireless based applications for Digital Repeaters & DATA transfer.</p> <ul style="list-style-type: none"> i. RPTR Shankaracharya, ii. RPTR Lethpora, iii. RPTR Jawahar Tunnel, iv. RPTR Beoli Bn Hqrs Doda, v. RPTR Patnitop, vi. RPTR Sanjichhat Katra, vii. RPTR DHQ T/Com Jammu, viii. RPTR PTTI Vijaypur <p>Note:-</p> <ol style="list-style-type: none"> 0. RF Link must support DMR.Repeaters and other IP based applications. 1. The intending firm may survey at their own for establishing dependable RF Link before participating in tendering process. They will preferably choose present police establishments for installation of self supporting towers, height as per requirement, with concrete bases, lighting protection design, power backup including Solar backup and should withstand wind speed up to 180 Kms/Hour. 2. Mains power supply/Generator Sets will be provided by the department. 3. After identification of specific location by the successful bidder for installation of tower at Jawahar Tunnel, the Department will approach concerned authorities, if required (PHQ J&K is requested for construction suitable accommodation for equipment and staff at Jawahar Tunnel Top and Natha Top) 4. RF Link may be extended to District Hqrs and Battalion Hqrs of J&K in future and the Network must support future extension.

**Item No. 06 (i) Technical Specifications of RF IP RADIO 200 Mbps
(for 50Mbps Link) with self supporting mast /Tower height as per
requirement (ONE PAIR SAMPLE REQUIRED)**

S.No.	Minimum Technical Specifications RF IP RADIO 200Mbps for 50Mbps Link) with self supporting mast /Tower with lighting protection design & height as per requirement.(Important Note: Equipment should have support for integration with DMR Dispatch System)	
1	Frequency Band	Radio Should Support 2.4/5.8 GHz Un-licensed band
2	Encryption	AES-128,FIPS197
3	Capacity	200 Mbps net aggregate or better
4	Modulation	2x2 MIMO-OFDM, BPSK,QPSK,16QAM, 64QAM
5	TX Out put	21 dBm or better
6	Rx Sensitivity	-88dBm @ 13Mbps, -86dBm @ 26Mbps or better
7	RF Channels	7 overlapping channels in frequency band 2.4/5.8 GHz or better.
8	Channel Bandwidth	Should support user configurable 5/10/20 MHz . The Radios should also support 40Mhz channel bandwidth to address high capacity backhaul requirements in PTP Radio Links
9	Wireless Error correction	Should support FEC 1/2, 2/3, 3/4, 5/6
10	ODU enclosure	IP67
11	Ethernet ports	Should support minimum 02 port
12	Diversity	Polarization and Spatial Diversity supported
13	Topology	Point to point
14	Throughput	(i) For 200 Mbps or better(same ODU must be software scalable up to 300 Mbps)
15	Security	Mac level authentication / Link Lock
	Operational	
1	Operating Modes	Ethernet (POE)
2	V LAN Support	Required
3	Asymmetrical TDD	Should Support Asymmetric Bandwidth
4	Link Distance	50 Kms or more
5	Spectrum Analyzer (in built)	Link-oriented Spectrum Analyzer: should show the results of both sites
6	Duplex Technology	TDD
7	Redundancy	should have provision for 1+1 configuration in all respect with automatic switch over of transmitter and receiver for radio link redundancy in less than 50 milliseconds in case of any failure.
	Network Management and Security	
1	Network Support	Ethernet, support should be available
2	Antenna Alignment tools	Buzzer / Visual LED's (SNR)
3	Management utilities	SNMP Based/Local and remote loop back testing
4	Management interface	Ethernet
5	Net work management system	Should support SNMP
6	Upgrade capabilities	Should have facility to upgrade the software over the Air. Should support software backup and Restore through EMS
	Physical Environmental and compliance parameters	

1	Network Connection	Ethernet (POE)
2	External Antenna Connection	N Type Connector with weather proof casing
3	POE Adopter	IDU to provide power over Cat 6 cable to ODU
4	Power consumption	Less than 35 Watts (IDU + ODU)
5	LED Indicators	Power and line
6	Temperature (ODU)	-25 to + 60°C or above
7	Enclosure	All weather casing for ODU
8	Environmental Compliance	MIL 810C D E F/IEC 60068-2
9	Shock and Vibration	MIL 810C D E F/EN 300 019-2-4 IEC 60068-2 class 4M5
10	Radio Regulation - ETSI	EN 300 328; EN 301 893; EN 302 502, EN 302326-2
11	Radio Regulation - WPC	WPC Type Approval GSR-38
12	Power Source	230 Volts AC 50 Hz /POE
13	Service Centre	OEM for the offered item should have own registered office with services centre in India and to deploy experienced services engineer in J&K at capital cities Jammu & Srinagar to ensure prompt service and support after sales.
Antenna - Dual Polarized 2X2 MIMO dish antenna		
1	Frequency (MHz)	2.4/5.8 GHz
2	Gain (dBi)	2 x 26±0.5
3	VSWR (Max)	1.5 : 1
4	H Plane BW (°)	9±0.5
5	E Plane BW (°)	9±0.5
6	Polarization	Linear V & H
7	Port to Port Isolation (dB)	> 30
8	Impedance (Ω)	>50
9	Front to Back Ratio (dB)	>30
10	Cross Poln. (dB)	>22
11	Connector Termination	2 x N(F)
12	Lightning Protection	DC Ground
13	Temperature Range (°C)	-25 to +60
14	Wind Speed (km/hr)	200
15	Humidity	95% Non Condensation
Hardware requirement		
1	Duplex Radio with POE	01 No.
2	Cat 6 cable	As per requirement
3	Surge Protector	01 No.
4	External Antenna 26/29 dBi or better	01 No.
5	Self-supporting Triangular Mast/Towers	The self supporting Triangular Masts/Towers, height as per requirement, with concrete bases, lightning protection design for the repeater Sites which shall be able to withstand up to 180 Kms/Hour wind speed.

Item No. 06 (ii) Technical Specifications of RF IP RADIO 50 Mbps (for 20Mbps Link) with self supporting mast /tower height as per requirement (ONE PAIR SAMPLE REQUIRED)

S. No	Minimum Technical Specifications RF IP RADIO 50Mbps (for 20Mbps Link) with self supporting mast /tower as per requirement (Important Note: Equipment should have support for integration with DMR Dispatch System)	
1	Frequency Band	Radio Should Support 2.4/5.8 GHz Un-licensed band
2	Encryption	AES-128,FIPS197
3	Capacity	50 Mbps net aggregate or better
4	Modulation	2x2 MIMO-OFDM, BPSK,QPSK,16QAM, 64QAM
5	TX Out put	21 dBm or better
6	Rx Sensitivity	-88dBm @ 13Mbps, -86dBm @ 26Mbps or better
7	RF Channels	7 overlapping channels in frequency band 2.4/5.8 GHz or better.
8	Channel Bandwidth	Should support user configurable 5/10/20 MHz . The Radios should also support 40Mhz channel bandwidth to address high capacity backhaul requirements in PTP Radio Links
9	Wireless Error correction	Should support FEC 1/2, 2/3, 3/4, 5/6
10	ODU enclosure	IP67
11	Ethernet ports	Should support minimum 02 port
12	Diversity	Polarization and Spatial Diversity supported
13	Topology	Point to point
14	Throughput	(i)For 50 Mbps or better (same ODU must be software scalable up to 100 Mbps)
15	Security	Mac level authentication / Link Lock
Operational		
1	Operating Modes	Ethernet (POE)
2	V LAN Support	Required
3	Asymmetrical TDD	Should Support Asymmetric Bandwidth
4	Link Distance	30 Kms or better
5	Spectrum Analyzer (in built)	Link-oriented Spectrum Analyzer: should show the results of both sites
6	Duplex Technology	TDD
7	Redundancy	should have provision for 1+1 configuration in all respect with automatic switch over of transmitter and receiver for radio link redundancy in less than 50 milliseconds in case of any failure.
Network Management and Security		
1	Network Support	Ethernet, support should be available
2	Antenna Alignment tools	Buzzer / Visual LED's (SNR)
3	Management utilities	SNMP Based/Local and remote loop back testing
4	Management interface	Ethernet

5	Net work management system	Should support SNMP
6	Upgrade capabilities	Should have facility to upgrade the software over the Air. Should support software backup and Restore through EMS
Physical Environmental and compliance parameters		
1	Network Connection	Ethernet (POE)
2	External Antenna Connection	N Type Connector with weather proof casing
3	POE Adopter	IDU to provide power over Cat 6 cable to ODU
4	Power consumption	Less than 35 Watts (IDU + ODU)
5	LED Indicators	Power and line
6	Temperature (ODU)	-25 to + 60°C or above
7	Enclosure	All weather casing for ODU
8	Environmental Compliance	MIL 810C D E F/IEC 60068-2
9	Shock and Vibration	MIL 810C D E F/EN 300 019-2-4 IEC 60068-2 class 4M5
10	Radio Regulation - ETSI	EN 300 328; EN 301 893; EN 302 502, EN 302326-2
11	Radio Regulation - WPC	WPC Type Approval GSR-38
12	Power Source	230 Volts AC 50 Hz /POE
13	Service Centre	OEM for the offered item should have own registered office with services centre in India and to deploy experienced services engineer in J&K at capital cities Jammu & Srinagar to ensure prompt service and support after sales.
Antenna - Dual Polarized 2X2 MIMO dish antenna		
1	Frequency (MHz)	2.4/5.8 GHz
2	Gain (dBi)	2 x 26±0.5
3	VSWR (Max)	1.5 : 1
4	H Plane BW (°)	9±0.5
5	E Plane BW (°)	9±0.5
6	Polarization	Linear V & H
7	Port to Port Isolation (dB)	> 30
8	Impedance (Ω)	>50
9	Front to Back Ratio (dB)	>30
10	Cross Poln. (dB)	>22
11	Connector Termination	2 x N(F)
12	Lightning Protection	DC Ground
13	Temperature Range (°C)	-25 to +60
14	Wind Speed (km/hr)	200
15	Humidity	95% Non Condensation
Hardware requirement		
1	Duplex Radio with POE	01 No.
2	Cat 6 cable	As per requirement
3	Surge Protector	01 No.
4	External Antenna 26/29 dBi or better	01 No.
5	Self-supporting Triangular Mast/Towers	The self supporting Triangular Masts/Towers, height as per requirement, with concrete bases, lightning protection design for the repeater Sites which shall be able to withstand up to 180 Kms/Hour wind speed.

Item No. 06 (iii) Technical Specifications of 24 Port Web Managed Switch

S.No	Minimum Technical Specifications of 24 Port Web Managed Switch	
01	No. of Ports	24 Ports
	Flow Control	IEEE 802.3x
	Jumbo Frames:	1536 Bytes
	QoS Support	Supports 802.1p QoS
	Switching Fabric	1.6 Gbps
	Standards	IEEE 802.3 10BASE-T Ethernet (twisted-pair copper) IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)
	Protocol	CSMA/CD
	Data Transfer Rates	Fast Ethernet: 100 Mbps (full duplex)
	Media Interface Exchange	Auto MDI/MDIX adjustment for all ports
	MAC Address Table	1K
	Packet Filtering/Forwarding Rates	Ethernet: 14,880 pps per port Fast Ethernet: 148,800 pps per port
	RAM Buffer	768 K Bytes per device
	DC Input	External 5 V/1 A Level

Item No. 06 (iv) Technical Specifications of 08 Port Web Managed Switch

S.No	Technical Specifications of 8 Port Web Managed Switch	
01	No. of Ports	8 Ports
	Flow Control	IEEE 802.3x
	Jumbo Frames:	1536 Bytes
	QoS Support	Supports 802.1p QoS
	Switching Fabric	1.6 Gbps
	Standards	IEEE 802.3 10BASE-T Ethernet (twisted-pair copper) IEEE 802.3u 100BASE-TX Fast Ethernet (twisted-pair copper)
	Protocol	CSMA/CD
	Data Transfer Rates	Fast Ethernet: 100 Mbps (full duplex)
	Media Interface Exchange	Auto MDI/MDIX adjustment for all ports
	MAC Address Table	1K
	Packet Filtering/Forwarding Rates	Ethernet: 14,880 pps per port Fast Ethernet: 148,800 pps per port
	RAM Buffer	768 KBytes per device
	DC Input	External 5 V/1 A Level

Item No. 06 (v) Technical Specifications of Router (Reputed Brand)

S. No.	Technical Specification of Router
1	High-performance multi core processors support high-speed WAN connections
2	Flash memory support - Should support high-speed storage densities. Minimum 8 GB flash should be available
3	DRAM - Minimum memory should be 4 GB
4	Aggregate Throughput - 35 Mbps to 75 Mbps
5	Total onboard WAN or LAN 10/100/1000 ports - 2
6	NIM slots - 2
7	Device configuration – Web UI
8	Power supply - External AC only (140 to 240 VAC)

Item No. 06 (VI) Technical Specifications of 9U, 19 Inch Rack

Sr. No.	Technical Specification 9U,19 Inch Rack
1	Branded, Less than 35 Kg, fitted with glass door, Adjustable depth front and rear rack rails, holding capacity 60 kg

Item No. 06 (vii) Technical Specifications of Email Server complete with Hardware, software, power supply, battery backup and all required accessories license for at least 200 users and upgradeable up to 500 users

Sr. No.	Technical Specification of Email Server complete with Hardware, software, power supply, battery backup and all required accessories license for at least 200 users and upgradeable up to 500 users
1.	Email Server complete with Hardware, software, power supply, battery backup and all required accessories license for at least 200 users and upgradeable up to 500 users Processor Intel Xeon,E3-1200 v5, or higher
2.	TB Hard Disk, or higher with RAID5 configuration
3.	RAM 16GB, or higher
4.	Redundant Power Supply,
5.	21" TFT,
6.	2 KVA Online UPS.
7.	SMTP/ESMTP support
8.	IMAPv4 - PUSH via IDLE support
9.	IMAP ACL
10.	Webmail Support
11.	Automatic Message Archiving
12.	Smart Attachment handling
13.	IMAP/POP3 Support
14.	Remote accounts
15.	System, user, domain-based rules & filters
16.	Advanced configuration
17.	Pool management

18	My SQL, MS SQL, Oracle, Firebird, SQ Lite support
19	Automatic Backup (settings, databases, mails)
20	Server monitoring & Watchdog
21	Logging (summary, debug, extended)
22	IPv4 and IPv6 support

Item No. 06 (viii) Technical evaluation of Firewall for email server

S.No.	Technical Specification of Firewall for email server	
01	SECURITY	Firewall, Intrusion Prevention System, Web Application Firewall, HTTPS/SSL Content Security, Logging & Reporting, DDoS Attack prevention, Web Filtering, Application Filtering
02	CONNECTIVITY	Multiple Link Management, High Availability, VPN
03	PRODUCTIVITY	Content Filtering, Instant Messaging Archiving & Controls, Bandwidth Management, Traffic Discovery, Configurable Internal/DMZ/ WAN Ports
04	Users	Upto 500 users Subscription 2 Year included
05	Interfaces	<ul style="list-style-type: none"> 10/100 Ethernet Ports - 2 COM Ports -1 USB Ports

Item No. 06 (ix) Technical evaluation FXO/FXS Gateway

Technical Specifications of FXO/FXS Gateway		
1. Interface		
i.	WAN	10/100M Ethernet Uplink Port
ii.	LAN	10/100M Ethernet Downlink Port
iii.	Phone	4Port FXS+4 Port FXO
2. Protocol		
i.	VOIP Control Protocol	H.323/SIP, easy to switch
ii.	Voice Codec	G.711A, G.711U, G.729, G.723, G.726
3. Call Features		
i.	Analog Telephone Feature	<ul style="list-style-type: none"> DTMF detection and generation. Call Progress Tunes detection and generation Polarity Reversal Signal Echo cancellation, VAD, CNG Answer supervision, disconnect supervision One-stage dialing, two stage dialling
ii.	VOIP Call feature	Call waiting, call transfer, call hold, call forward

Item No. 06 (x) Technical Specifications of One -KVA online UPS with Solar Panel

S.No.	Technical Specification of One -KVA online UPS with Solar Panel	
01	<p>Integrated system should consist a Solar Charge Controller, Inverter and a Grid charger with inbuilt intelligence to utilize the solar power on priority as the first priority and in case the solar power cannot support the load grid power should be used to charge the battery and supply load. The UPS must have</p> <ul style="list-style-type: none"> ➤ Reputed Brand ➤ Prove minimum 2 hrs backup ➤ In-built heavy duty Solar charge Controller ➤ Optimal battery protection ➤ Best reliability ➤ High reliability with Minimal maintenance ➤ Battery low protection, Battery over voltage protection, Over temperature and overload protection, Short 	

	circuit protection, Reverse polarity protection by internal fuse
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Item No. 07 Technical Specifications of Packet Radio system complete with all required accessories.

S.No	Technical Specifications of Packet Radio system complete with all required accessories. (Sample required for item No. 7 Serial 1 and 2 to check the features of serial No. 3)
01	General:- Computer System : Processor i5 or above with minimum 04 COM- ports, 2GB DDR RAM, 1TB TB HDD, DVD RW Drive, 21" inch TFT, internal PSTN Modem, 100/ 1000 Mbps LAN Port ,Multimedia Keyboard, Optical Mouse, & Windows 8.1 /10 OS , Mother board drivers and Antivirus software (Branded system, latest configuration preferred).
02	A:- Communication Software:- Software with protocols PSTN, TCP/IP, Polnet and DMR should be available. The software must be able to receive/Transmit messages with inbuilt encryption. Supplied DMR radio should be directly interfaced to computer without any external hardware or modem in digital mode
03	i. Configurable Message Scheduling/Message Priorities ii. Log facilities (TX, Rx, and Failed / Print Messages) with date / time & acknowledgement. iii. Tool bar Icons for SEND,PRINT,CONNCT,DISCONNECT, LOG, ADDRESS DIRECTORY, EDITOR FOR Messaging , INBOX, OUTBOX, SENT MSG, Receive MSG and other features relating data communication. iv. On Screen connection status viz IDLE, BUSY, CONNECTING, RECEIVING and SENDING. User & admin password protected. v. Message arrival indicator. vi. Message transmits acknowledgement/failure indication. vii. The software should be fully compatible with existing AMSS software. viii. Required protocols for email applications.
04	C. Technical Specifications of 9 PIN 80 Column Dot Matrix Printer. i. Printing method: Impact dot matrix; 10,12, 15 ii. Printing direction: Bidirectional for text printing, Unidirectional for graphics and by soft ware command for text. i. Number of copies: One original plus two copies total thickness. ii. Paper feed method: Friction, Pull tractor, Holder, Push tractor. iii. Ribbon: Cartridge, Black. iv. Voltage: 220Volt to 240volt AC. Interface : Parallel /USB.
05	D. Technical Specifications of UPS - 1 KVA Line Interactive. Capacity: 1000 VA. Output Wattage: 700 Watts. Input Voltage: 140 V.A.C to 270 V.A.C 50 Hz Output Voltage: 220 V (A.C) 50 Hz Protection: Under Voltage/Over Voltage, Serge Control, Short Circuit Protection on Output Circuit, Inverter Shutdown Protection. Indication: Audio Visual for different conditions of UPS. Battery Backup: Battery Backup for at least 30 minutes

Item No. 08 Technical Specifications of RADIO COMMUNICATION TEST SET (ANALOG/DIGITAL)

THE EQUIPMENT MUST CONSIST OF:	
1	RF SIGNAL GENERATOR
2	RF POWER METER
3	AUDIO FREQUENCY COUNTER
4	SINAD METER

5	DISTORTION METER
6	HUM AND NOISE METER
7	SIGNAL TO NOISE RATIO METER
7	AUDIO FUNCTION GENERATOR
8	TRACKING GENERATOR
9	OSCILLOSCOPE
10	DIGITAL MULTIMETER
11	RF SPECTRUM ANALYZER
12	AUDIO SPECTRUM ANALYZER
13	HARMONICS & SPURIOUS METER
14	TRACKING GENERATOR
15	DIGITAL TEST (OPTIONS) FOR P25- I&II , DPMR & DMR etc.

1.	GENERAL	
a)	Operating Voltage:	AC 220V±10%@50Hz
b)	Internal Storage	20 GB or More
c)	Display Size	6" or more(diagonal)
d)	USB port	Should be available
e)	Ethernet	RJ 45, 100/ 10 M bit /s, Minimum 1 port
f)	GPIO Connector	24 Pin IEEE
g)	RS 232 Connector	9-pin , D-sub , Male
h)	IF output Connector	BNC
i)	Function	10.7 MHz Receiver IF
j)	Automated signal Measurement and analysis software:	The software should have interface with digital radio test set The software is capable to test an saline the transmitter / receiver of a Radio set automatically and analysis in the field. field
k)	Calibration support:	Calibration facilities should be available in India free of cost during the guarantee/warranty period.
l)	Field up-gradations:-	a) The product should field upgradable to other Digital Technologies such as: P 25 Phase I & II testing, DMR Radio with Repeater, NXDN, dPMR & Tetra Mobile and Base station and DMO mode testing. b) The equipment should be capable of performing tests of digital/analog radio set and contain all functionalities in one standalone unit.
2.	SIGNAL GENRATOR FOR RECIEVER TEST	
a)	Frequency Range.	250 KHz- 2.5 GHz or better
b)	Frequency Resolution	1 Hz or better
c)	Output Level range	TR port: -120.0 to -30 dBm Or better Gen port: 120.0 to 5.0 dBm Or better
d)	Resolution	0.1 dB or better
e)	Port Protection limit	a) T/R port : 200 Watt with warning above 135 watt maximum of 30s On and minimum of 02 min. OFF for power levels above 50 watt.

		b) Antenna Port: 10 watt warning above + 17dBm. c) Generator Port: 10 watt with warning above +23dBm(Remove power immediately when alarm sounds)
f)	Harmonics	<-25dBc (RF level set at + 10 dBm)
g)	Non-Harmonics	<-55dBc (all frequencies except Crossovers) or better
	Modulation	
a)	Select Mode	OFF,AM,FM,AM USB,AM LSB
b)	Waveforms	Sine, Square, Triangle, Ramp, DCS, DTMF
	FM Modulation	
a)	Deviation Range	0 to \pm 125 KHz or better , Off
b)	Deviation Accuracy	3% of setting
c)	Resolution	10 Hz or better
d)	Modulation Range	20 Hz to 20 KHz or better
	AM Modulation	
a)	AM depth range	0 to 90% or better
b)	Accuracy	UP to 3%
c)	Modulation Bandwidth	100Hz to 15 KHz or better
d)	Resolution	1%
	SSB Modulation	
a)	Modulation Selection	Upper Side Band (USB) or Lower side Band (LSB)
b)	SSB Depth Range	0 to 100% (LSB or USB)
c)	Modulation Bandwidth	300Hz to 20 KHz
3.	Receiver (Transmitter test)	
a)	Frequency Range	250 KHz to 2.5 GHz or better
b)	Demodulation selection	OFF,AM,FM,AM SSB,AM LSB
c)	Signal code	1 KHz tone, Private tone ,Digital private line, Single tone, two- tone paging,3/6 tone paging, POCSAG, external input from both supplied microphone and BNC input.
d)	Sensitivity	Less than – 100 dBm (10 dB SINAD) or better
	Demodulation measurements	
a)	FM Deviation	Range: \pm 7.5 to \pm 125 KHz or better
b)	Accuracy	\pm 3% plus source residual (IF BW set appropriately for the received modulation BW)
c)	Range	20 Hz to 20 KHz
d)	AM Deviation	Range: 0 to 100%
e)	Accuracy	\pm 3% plus source residual (30 to 80% AM, IF BW set appropriately for the received modulation BW)
f)	AM rate	20 Hz to 15 KHz or better
4.	RF power Meter	a) Range:- 0.10 to 125 watt , Resolution 0.01w

		b) VSWR (with Attenuation $\leq 10\text{dB}$): Better than 1.20:1
5.	Audio Frequency Counter	
a)	Range	20 Hz to 20 KHz
b)	VSWR	Sine or Square
c)	AF level meter	0 to 20 Vrms or better
6.	SINAD Meter	
a)	Frequency meter	300Hz to 3 KHz or better
b)	Accuracy	$\pm 1\text{dB}$, ± 1 count
c)	Range	0 to 50 dB or better
d)	Level	0.1 Vrms minimum to 20 Vrms or better
7.	Distortion Meter	
a)	Distortion Range	1% to 50% or better
b)	Frequency Range	300 Hz to 3KHz
c)	Input level audio	0.1 V rms minimum to 20 V rms or better
d)	Resolution	1% or better
8.	Hum and Noise Meter	
a)	Range	-80dB to 0 dB or better
b)	Signal frequency	300Hz to 3 KHz or better
c)	Resolution	50dB or better
9.	Signal to Noise Ratio Meter	
a)	Frequency Range	300Hz to 3 KHz or better
b)	Range	-80dB to 0 dB or better
c)	Accuracy	$\pm 1\text{dB}$, ± 1 count
10.	Audio Function Generator	
a)	Wave shape	Sine, Square, Triangle, Ramp , Digital Code squelch , DTMF
b)	Frequency Range	Sine: 20Hz to 20 KHz or better Square , Triangle and Ramp: 20Hz to 4KHz or better.
c)	Level Range	1 mV to 5 V RMS across a 10 K Ω load or better
d)	Frequency resolution	0.1 Hz
e)	Level accuracy	$\pm 1\%$ of setting across 10 K Ω load or better.
11.	Oscilloscope	
a)	No. of channels	Two channels or more
b)	Frequency Range (vertical)	DC to 2MHz or better
c)	Input Range (vertical)	0 to 100 V peak Max. cat -II
d)	Accuracy (Vertical)	10% of full scale (DC to 2 MHz)
e)	Sweep factor (Horizontal)	1 μ Sec to 1 Sec / division in a 1,2,5 sequence
f)	Accuracy (Horizontal)	> 1.5% of full Scale.

g)	Trigger Selection	Automatic, normal continuous, single shot.
h)	Marker functions	Time with amplitude, deviation or % depth.
12.	Digital MultiMeter	
a)	Voltage Range	200mV to 1000V, or more (150VAC RMS , or VDC MAX input)
b)	Ac Voltage frequency Range	50Hz to 20 KHz
c)	Accuracy	AC \pm 5% fullscale \pm 1 LSB, DC \pm 1% fullscale \pm 1 LSB
d)	AC/DC Ampere meter	200mA to 20A, or better Auto (20A range uses optional shunt connected to voltmeter)
e)	Resolution	3 Digits or more (up to 2000 counts)
f)	Ohmmeter	Full Scale Range: 200 ohms to 20Mohms, Auto.
13.	RF Spectrum Analyzer	
a)	Frequency Range	250KHz to 2.5 GHz
b)	Frequency Resolution	1Hz
c)	Frequency Accuracy	Same as frequency standard
d)	Span Accuracy	\pm 5% of Span width or better
e)	Span mode	Start /Stop, centre/Span and zero Span
f)	Resolution bandwidth (RBW) filters	Selectable from 300Hz, 3KHz, 30 KHz, 60KHz,300KHz, 3MHz or more
g)	Video Bandwidth (VBW)	Selectable from 10 Hz to 1 MHz
14.	Audio Spectrum Analyzer	
a)	Frequency Range	Start and stop Frequency- 0Hz to 20 KHz
b)	Frequency Span	2 KHz (Min.) to 20 KHz (Max)
c)	Frequency Accuracy	\pm 50PPm, (\pm 10PPm typical)
15.	Automatic Harmonics and Spurious Measurement for Radio	
a)	Harmonic/ Spurious Level Range	0 to -50dBc or better
b)	Accuracy	Same as RF Spectrum Analyzer
16.	Tracking Generator	
a)	Tracking Generator Output	Refer to RF signal Generator section for: - Frequency Range and Accuracy - Output Level Range, resolution and accuracy
b)	Tracking Generator Controls	Output Port Selection, RF Level,, Reference Cal
c)	Waveform Generator	PC based software utility that gives the user the ability to develop their own waveforms to use as the modulation source.
17.	Environment and Safety Standard	
a)	Operating Temperature	0 to 45°C (in accordance with MIL PRF-2880F class-3)
b)	Storage Temperature	-20°C to 60°C
c)	Relative Humidity	75% up to 30°C

d)	Safety Standard	UL61010B-1, EN61010-1, CSA C22.2 No- 61010-1 or equivalent
18.	PROJECT-25 (P-25 phase 2nd) OR Association of Public safety communication official International (APCO-25) Technology	
	RF SIGNAL GENERATOR	
a)	Frequency Range	250KHz to 2.5 GHz or better
b)	Output Level Range	T/R Port: -120.0 to -30.0 dBm or better
c)	Resolution	1Hz
d)	Modulation	C4fm, CQPSK, LSM
e)	Test Pattern	STD1011, STD CAL, STD SILENCE, STS IDLE, STD 511(0.153), STORED SPCH, VOICE, 1011, SILENCE
f)	Duplex Radio	Should have facility test in Duplex mode/Repeater set test
g)	P25 Encryption Test	. Facilities to test the AES/ DES should be available
h)	Vocoder Test	IMBE/AMBE Vocoder testing facility should be available
	P-25 Measurement	
	Modulating fidelity	
a)	Range	0 to 20%
b)	Resolution	0.01 %
c)	Accuracy	< 5.0% of reading (2.5 to 5%)
	Symbol Deviation	
a)	Range	1500Hz to 2100Hz
b)	Resolution	0.1 Hz
c)	Accuracy	±10Hz (1620 to 1980 Hz)
	Frequency Error	
a)	Range	±4 KHz
b)	Resolution	0.01Hz
c)	Accuracy	Frequency Standard ± 1 count
	UUT TX /RX Bit Error Rate	
a)	Range	0 to 20%
b)	Resolution	0.10%
	Error Vector Magnitude	
a)	Range	0 to 20%
b)	Resolution	0.10%
c)	Modulation Fidelity Display	Should have constellation, Distribution, Eye Diagram and Trajectory type display graphics
d)	Protocol	a) Data link: should have header and voice frame. b) Conventional Mode Simulation c) Phase-ii Trunking Simulation d) Trunking control

		e) Simulator f) Supports DES Encryption
e)	Phase II-HCPM TX/RX Upgradation facilities should be available	
19.	P25 phase 2nd Trunking Operation VHF /UHF/700/800 MHz LSM Generate and Receive Analysis:- Facilities should be available	
	Digital Mobile Radio (DMR) Technology	
a)	RF Signal Generator	Same as in P-25
b)	Output level	Same as in P-25
c)	Modulation	4FSK
d)	Test Pattern	STD1B1031, STD1B CAL, STD1B511 (153) STD OB TSYNC(Repeater IDLE Pattern)
e)	Duplex Radio / Repeater	Should have facility to test in Duplex mode/ Repeater set test.
f)	Vocoder Test	1MBE/AMBE Vocoder testing facility should available .
	DMR Measurement	
a)	FSK-Error	0 to 20%
b)	Range	0.01%
c)	Accuracy	<5.0% of reading (2.5 to 10%)
	Protocol	
a)	Decode	Color code , call ID , Unit ID
b)	Simulation	Color code , call ID
	Magnitude Error	
a)	Range	0 to 5%
b)	Resolution	0.01%
c)	Accuracy	<10 of reading (0 to 2%)
	Frequency Error	
a)	Range	±4KHz
b)	Resolution	0.01 Hz or better
c)	Accuracy	Frequency Standard ± 1 count
	UUT TX /RX Bit Error Rate	
a)	Range	0 to 20%
b)	Resolution	0.1%
	DPMR	
a)	RF Signal Generator	Same as in P-25
b)	Output level	Same as in P-25
c)	Modulation	4FSK
d)	Test Pattern	STD 511 (.153)
e)	Duplex Radio / Repeater	Should have facility to test in Duplex mode/ Repeater set .
	DPMR Measurement	
	FSK-Error Meter	

a)	Range	0 to 20%
b)	Resolution	0.01%
c)	Accuracy	<5.0% of reading(2.5 to 10%)
	Frequency Error	
a)	Range	$\pm 4\text{KHz}$
b)	Resolution	0.01 Hz or better
c)	Accuracy	Frequency Standard ± 1 count
	UUT/TX/Rx Bit Error Rate	
a)	Range	0 to 20%
b)	Resolution	0.1%
	Accessories	All required accessories for testing the all parameters of the Equipment of the user/ Maintenance Manual.
Note:- Necessary training for operation and maintenance of offered item for technical staff to be imparted at telecom Jammu/ Srinagar within offered cost of the system		

BOQ OF INTRA AND INTER DISTRICT/ AP,IRP UNITS, NETWORKS OF DMR VHF HIGH BAND REPEATERS, DMR VHF HIGH BAND RADIO SETS, PACKET RADIO SYSTEM AND IP NETWORKS

SETS, PACKET RADIO SYSTEM AND IT NETWORKS		Tentative Qty.	Remarks
Nomenclature			
1. Dispatcher Console / Radio Server			
(i) Dispatcher Console Application complete with Workstation	39	To activate GPS in Radio Communication Intra Network as per requirement and also provide Voice Logging facility of each Radio set at Control Station	
(ii) GIS Subscriber Application Software License	1200		
(iii) Web Managed 8 Port Switches.	39		
2. Inter District VHF HB Digital REPEATERS			
DMR Repeaters with Auto roaming and other applications The System Consists of:-		To extend the Radio Communication cover by using multiple DMR IP based VHF Radio repeaters	
(i) DMR VHF 45 Watt Repeater with Mains Power Cables	19		
(ii) Duplexers	19		
(iii) Static 3dB/6dB Antennas	19		
(iv) RF loss less Cables of 45 Meters. length each with suitable Connectors fitted at both of ends	19		
(vi) DC Cables battery Backup for repeaters	19		
(vii) Repeater Programming Kits	17		
(viii) Web Managed 12 Port Switches	19		
3. Static Digital Radios VHF High Band			
(i) DMR VHF HB 25 Watt Static Sets Complete with all accessories (Compatible with Dispatcher Console)	1000	To replace the existing analog radios with VHF High Band DMR and also obtain the DMR features compatible to the equipment of S.No. 1 and 2 of this proposal.	
(ii) Power Supply 13.8 DC V ± 15%	1000		
(iii) 03/6dB GP Antenna complete with Suitable Connector ,Mounting base etc.	1000		
(iv) RF Cable 30 meters length each fitted with Suitable connectors at both ends(Compatible with Set)	1000		
(v) BNC Male/Female Adaptor (Compatible with Set), if required	1000		
(vi) Programming Kits	10		
4. Vehicle Mounted Digital Mobile Radio VHF High Band			
(i) DMR VHF HB (Vehicle Mount) 25Watt with Bluetooth, GPS and Accessories Power Cable, Standard Mounting Bracket and DTMF Mic	900	To replace the	

(ii) Whip Antenna complete fitted with co-axial cable fitted with suitable connectors at its ends	900	existing analog radios with VHF DMR and also obtain the DMR features compatible to the equipment of S.No. 1 and 2 of this requirement.
(iii) BNC Male/ Female Adaptor (Compatible with Set), if required	900	
(iv) Programming Kits	10	
(v) Bluetooth hands free kit of same OEM	100	
5. Hand Held DMR 5 Watt Digital Mobile Radio VHF High Band		
(i) DMR VHF HB Hand Held Radio with blue tooth, GPS and Li-ion 2000mAh Battery, Charger and Rugged Helical antenna	2200	To replace the analog radios with VHF DMR radios and obtain the DMR features.
(ii) 7.4 V Li-ion 2000 mAh Spare Battery Pack.	2200	
(iii) Bluetooth hands free kit of same OEM	100	
(iv) Programming Kits	10	
6. RF RDIO LINK		
i. RF IP RADIO 200 Mbps alongwith accessories as per specifications with self supporting mast/ tower , height as per requirement	18	16+2(Spare)=18
ii. RF IP RADIO 50 Mbps alongwith accessories as per specification with self supporting mast/ tower , height as per requirement,	14	12+2(Spare)
iii.24 Port Web Manage Switch Complete with all required accessories	04	PCR Jmu, PCR Sgr, PHQ Jmu, PHQ Sgr,
iv.08 Port Web Managed Switch Complete with all required accessories	08	
v.Router Complete with all accessories	06	Jmu & Sgr one each & Repeaters
vi.9U, 19 Inch Rack (1 Per Site) Complete	19	One for each repeater site
vii.E- Mail server complete with Hardware, software, battery backup upto 6 hrs and Complete with all accessories.	02	One each at Srinagar & Jammu
	05	PCR Sgr, Lethpora, PHQ Sgr, PCR Jmu, PHQ JMU,
viii.4 Port FXO+4 Port FXS Gateway Complete with all accessories		
ix.Fire wall for Email server		
x.1KVA Online UPS (>two hours backup) with solar Panel & charge controller	16	One each for every duplex radio site
xi. Self-supporting Triangular Mast/Towers	16	=do=
xii. Additional requirement if any. The intending firms must provide complete details of the item Which would be required for completion of the project		
7. Packet Radio System		
Packet Radio System for Voice and Data Complete with all accessories & Units	70	For 25 Districts, Sub districts, AP, IRP Battalions including CID, Security, Traffic, Railway Jammu as

		well as Srinagar.
8. Radio Communication Test Set Complete with all accessories	01	For necessary checkup , repairs of newly Digital VHF High Band Radios
9. On site Complete Comprehensive Warranty for RF link, Dispatcher, Radio Server and Repeaters.	05 years.	
10 Onsite Warranty for Radios	02 years	
11 Warranty for radio accessories	18 months	
12. On site Complete Comprehensive AMC for RF link, dispatcher, Radio server and Repeaters for a period of 03 years. However, comprehensive AMC will start after expiry of onsite warranty.	03 years	
Note:- 1) The Bidder should offer Item No 02 to 05 from single OEM to offer complete solution, so as to avoid any compatibility issues between dispatchers, radios, repeaters and RF radio link.		


 Mubassir Latifi JKPS
 (AIG Provision/Transport)
 For Director General of Police,
 J&K-Jammu

**POLICE HEADQUARTERS**

Phone/Fax No: 0194-2443031/ 2443032
0191-2459029/2459255(Jammu)

{ PROVISION SECTION }

J&K JAMMU.

(Sgr)Website:www.jkpolice.gov.in
Email: phqjk@jkpolice.gov.in

Gist of e-tender notice No 05 of 2019**Dated: - January, 24th 2019**

For and on behalf of the Governor of Jammu and Kashmir State, short terms e-tenders are hereby invited from registered OEM's or their authorized dealers to quote against this e-tender for Supply, installation & Commissioning of Intra/inter District Network project Using DMR(A turnkey communication solution) as mentioned in Annexure "A" of this tender notice. The download of the NIT shall start on 24/01/2019 from 1600 hours. Tenders shall be submitted online on J&K State e-Procurement Portal www.jktenders.gov.in upto 06.02.2019 before 1800 hours.

The tenders (technical bids only) will be opened online on 08.02.2019 at 1100 hours at Police Headquarters J&K Gulshan Ground Jammu. In case of unforeseen circumstances, the date of opening for technical bids will be next working day.

A pre bid conference shall be held at PHQ J&K Gulshan Ground Jammu on 29 .01.2019 at 1600 hours , the intending firms can participate in this conference to clarify any issue related to instant tender enquiry or planning of the department to implement this project. In view of paucity of time neither any extension will be given in the last date for submission of bids nor any query shall be entertainable after pre bid conference i.e. 29 .01.2019.

Detailed tender documents (SBD) with terms and conditions are available on J&K State e-procurement Portal www.jktenders.gov.in. The intending tenderers may visit this portal site for detailed information.


Mubassir Latifi JKPS
(AIG Provision/Transport)
For Director General of Police,
J&K-Jammu

No: - Prov-II /WPR- 26/2016-17/

Dated

. 01.2019

Copy to the:-

1. Principal Secretary to Govt. Home Department J&K Jammu
2. All ADsGPJ&K
3. All IsGPJ&K

....for favour of information.

4. DIG CKR Srinagar/DIG Jammu-Kathua& Samba Range Jammu.
5. Director Police Telecom J&K Jammu for information.
6. Director Industries Jammu/Srinagar for information.

7. Chief Accounts officer PHQ J&K Jammu for information
8. Manager Government Press Srinagar / Jammu for publication of the e.tender in Govt Gazette.
9. SSP J&K CID Cell, 11 Harish Chander Mathur Lane Kasturba Gandhi Marg New Delhi-110001 alongwith copy of the e.tender for information intending firms.
10. AIG Communication PHQ J&K Jammu for information with the request to arrange publication of Gist of the e.tender in 02 State dailies and one National daily or as per Govt. directions about publications of the tenders through information department.
11. In-Charge IT Centre PHQ/In-Charge e-tendering PHQ for placing the e-tender on the website of J&K Police and J&K Govt. Portal.
12. File for records.


Mubassir Latifi JKPS

(AIG Provision/Transport)
For Director General of Police,
J&K-Jammu