

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
LIQUID PROPULSION SYSTEMS CENTRE, VALIAMALA (LPSC)
THIRUVANANTHAPURAM**

**Tender for Supply, installation, liaisoning and commissioning of VHF
Repeater station, Base station, mobile stations and handsets**

Bids to be submitted online

Tender No.: LPSC/LVF/LP202300032101 dated 08-09-2023

A. Tender Details

Tender No :	LPSC/LVF/LP202300032101
Tender Date :	08-09-2023
Tender Classification:	GOODS
Purchase Entity :	LVF
Centre :	LIQUID PROPULSION SYSTEMS CENTRE, VALIAMALA (LPSC)

Supply, installation, liaisoning and commissioning of VHF Repeater station, Base station, mobile stations and handsets

For and on behalf of the President of India, the Head, Purchase and Stores, Liquid Propulsion Systems Centre (LPSC), Valiamala , Thiruvananthapuram invites tenders through e-procurement mode; <https://eproc.isro.gov.in>.

Prospective vendors interested in participating in the tendering process need to get registered in the portal by using Digital Signature Certificate. Offers submitted through our online portal only will be considered and no other means will be considered.

Detailed instruction, pre-requisites and illustrative tutorials for bid enrollment, preparation etc. are available in the portal at <https://eproc.isro.gov.in>. A help desk is also functioning to assist the vendors whose contact details are available in the portal.

This being a two part tender , Technical & Commercial Part and Price Part separately, the tenders should not attach any documents containing Pricing information along with Technical & Commercial Bid. Normally we do not open PART-II (Price bid), if PART-I (Techno Commercial Offer) does not meet with our technical specification requirements. Our Tender Enquiry contains technical requirements and specification. The detailed technical specification of your offer should be covered in the technical part. The Technical documents need to be attached online as a single PDF file without any price information. The tender attachment/technical bid containing Price details will be treated as unsolicited offers and rejected.

NOTE:

1.As per the Government of India Order dated 04.06.2020, Local content involved in the quoted item shall be declared and certified in percentage. Also requested to confirm the place where value addition for the item takes place.

2.Class I/II suppliers are eligible to quote.

A.1 Tender Schedule

Bid Submission Start Date : 08-09-2023 14:30

Bid Clarification Due Date : 15-09-2023 14:30

Bid Submission Due Date : 10-10-2023 13:50

Bid Opening Date : 10-10-2023 13:50

Price Bid Opening Date : 10-10-2023 13:50

B. Tender Attachments

Technical Write-up/Drawings

Document : Hand Held set Specification

Document : Mobile Set Specification

Document : Base station Specification

Document : Repeater Set Specification

Instructions To Vendors

5. INSTRUCTIONS TO INDIGENOUS TENDERERS

1. a) As far as implementation of provision for Public Procurement (Preference to Make in India) Order, 2017 is concerned, the Office orders vide No. P-4502/2/2017-B.E-II dt 15.06.2017, which is partially modified by Order No.P-45021/2/2017-PP (BE-II) dt 28.05.2018, Order P- 45021/2/2017-PP (BE-II) dt 29.05.2019, Order No. P-45021/2/2017-PP (BE-II) dt 04.06.2020 and Order No. P-45021/2/2017-PP (BE-II) 16.09.2020 and subsequent Amendments issued by the Department of Promotion of Industries and Internal Trade, Ministry of Commerce and Industry regarding Class-I/Class-II local suppliers, Purchase preference, verification of local contents etc shall be applicable to this tender. Therefore, bidders are requested to ensure compliance of the same while submitting tenders. b) Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs. Such MSE s shall produce documentary proof of registration as per provisions of the Policy ie: registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum or any other body specified by Ministry of MSME.

2. Applicable Law: - The Contractor shall be interpreted, construed and governed by the Law of India.

3. Bank Details :- The offer should contain Bank details viz., Bankers Name, Address, Phone No. & Mail id, Bank Account No., IFSC code, PAN No., GST No., etc.

4. Contractors Default Liability :- The purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder: a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the

Contractor. b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

5. Counter Terms and Conditions of suppliers: - Where counter terms and conditions / printed or cyclostyled conditions has been offered by the Supplier, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.

6. DELIVERY AND LIQUIDATED DAMAGES (LD) :- (a) The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates. (b) Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the purchaser shall be entitled at his option either. (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or (ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or (iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor. In the event of action being taken under sub-clause (ii) & (iii) of clause 15 (b) above, the Contractor shall be liable for any loss which the purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to re-purchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re-purchase shall be at the discretion of the purchaser, whose decision shall be final. It shall not be necessary for the purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall be without prejudice to the right of the purchaser to recover damages for breach of Contract by the Contractor.

7. Delivery Period :- The time for and the date / period of delivery of the stores stipulated in the Tender / Purchase Order shall be deemed to be the essence of the contract and delivery must be completed on or before the specified dates.

8. Delivery Term :- Ex-Works / FOR LPSC

9. Extension of Time: - If the completion of supply of Stores is delayed due to reason of FORCE MAJEURE such as acts of God, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restrictions, strikes, and freight embargoes etc., the Contractor shall give notice within 15 days to the Purchaser in writing of his claim for an extension of time. The Purchaser on receipt of such

notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to the other terms and conditions of the Contract.

10. Guarantee & Replacement :- a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance. b) For a period of twelve months or for a period as specified in the tender document after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the purchaser who shall state in writing in what respect the stores or any part thereof are faulty. c) If, in the opinion of the purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the purchaser, provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of 14 months from the date of acceptance thereof. d) Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores. e) The decision of the purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor. f) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of the stores at purchaser's site.

11. Indemnity:- The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of Infringement of any Patent, Copy right or Trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of stores for infringement of any right protected by patent, registration of design or trade mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

12. Language and Measures :- All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English Language. The metric system of measurement shall be used exclusively in the Contract.

13. Mode of Despatch :- For supplies BY ROAD / BY RAIL:- The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain' basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract. The Contractor will be held

responsible for any demurrage / wharfage paid due to non-receipt of documents in time.

14. Offer Validity :- a) For Single Part Tender - Quotation should be valid for 90 days from the date of opening of the tender or any other period as specified in the tender. b) For Two Part Tender - Quotation should be valid for 120 days from the date of opening of the tender or any other period as specified in the tender. Note :- Offer with validity lesser than that specified is liable for exclusion from the procurement process

15. Packing Forwarding & Insurance:- The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by Rail / Road to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. b) Insurance : The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

16. Payment :- 100% payment shall be made through RTGS within 30 days of receipt and acceptance of the item at our site against submission of PBG.

17. Performance Bank Guarantee (PBG) :- To fulfil guarantee conditions outlined in clause 2(a) to (e) above, the Contractor shall, at the option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser) from a Bank approved by the purchaser for an amount equivalent to 3% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.

18. Price : a) Price should be firm and fixed and should be on the basis of FOR, LPSC / delivery at site. The Purchaser will not pay separately for transit insurance, and the risk and cost during transit shall be exclusively the responsibility of the Contractor and the purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract. b) Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations. c) Prices are required to be quoted according to the units indicated in the tender. When quotations are given in terms of units other than those specified in the tender form, relationship between the two systems of unit must be furnished.

19. Quantity (QTY) and Unit of Measure (UOM) Quote should be as per the quantity and unit of measure mentioned the tender. If dimensional details are available, the same should also be indicated in your offer.

20. Resolution of Disputes:- Any dispute, disagreement or question arising out of or relating to or in consequence of the contract or to its fulfillment, or the validity of enforcement thereof which cannot be

settled mutually, or the settlement of which is not herein specifically provided for, shall within 30 (thirty) days from the date either party informs the other in writing that such dispute or disagreement exists be referred to arbitration by the sole arbitrator. The Arbitrator shall be appointed As per the Indian Arbitration and Conciliation Act 1996 and proceedings will be conducted in Trivandrum. The Arbitration proceedings shall be conducted in accordance with and subject to the Arbitration and Conciliation Act 1996 (Act 26 of 1996) as amended from time to time and the decision of the Arbitrator shall be final and binding on the parties thereto. Each party shall bear its own cost of preparing and presenting its case. The cost of Arbitration including the fees and expenses of the Arbitrator shall be shared equally by the parties unless the award provides otherwise. Subject to provisions of this clause, the courts at Kerala shall have exclusive jurisdiction. Performance under this Contract shall, however continue during Arbitration proceeding and no payment due or payable by the parties hereto shall be withheld unless any such payment is/or forms a part of the subject matter of the Arbitration proceedings.

21. Security Deposit (SD) :- Applicable for order value above INR 5 L (Including taxes and other charges). On acceptance of the order, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding 3 percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit Security and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores Contracted at the risk of the Contractor.

22. Specifications:- a) Stores offered should strictly conform to Purchasers specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Wherever options are called for in our specifications, the tenderer should address all such options. b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.

23. Taxes :- The applicable GST / IGST shall be clearly mentioned in your offer along with HSN code of the offered items. We are eligible for IGST @ 5% as per the Department of Revenue Notification No. 25/2018 Integrated Tax (Rate) Schedule-I; Sl.No.243B dated 31.12.2018 (Amendment to Notification No. 7/2018 - Integrated Tax (Rate) dated 25.01.2018 and Notification No. 1/2017 - Integrated Tax (Rate) dated 28.06.2017

24. Training:- The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchasers engineering / technical personnel from India and for the active association on the manufacturing processes throughout the manufacturing period of the Contract / Stores, number of such personnel to be mutually agreed upon.

25. LPSC shall have the right to place part order among the parties for the items for which they are the lowest.

6. SPECIAL INSTRUCTIONS TO TENDERERS

1. As far as implementation of public procurement policy (Preference to Make In India) Order, 2017 is concerned, the Office Orders vide No. P-45021/2/2017-B.E-II dt.15.06.2017, which is partially modified by Order No. P-45021/2/2017-PP(BE-II) dt.28.05.2018, Order No.P-45021/2/2017-PP(BE-II)dt. 29.05.2019, Order No. P-45021/2/2017-PP (BE-II) dt 04.06.2020 and Order No.P-45021/2/2017-PP (BE-II) dt16.09.2020 and subsequent Amendments issued by the Department for Promotion of Industries and Internal Trade, Ministry of Commerce and Industry regarding Class-I/Class-II local suppliers, Purchase preference, verification of local contents etc shall be applicable to this tender. Therefore, bidders may ensure compliance of the same while submitting tenders.

2. Class-I / Class- II local suppliers are only eligible to participate in this tender

3. Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs. Such MSEs shall produce documentary proof of registration as per provisions of the Policy ie: registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or Directorate of Handicrafts and Handlooms or UdyogAadhar Memorandum or any other body specified by Ministry of MSME.

4. The tendered requirement is having local content minimum 20%. Hence, the provision/evaluation of offers shall be as per the office orders mentioned above, issued by Govt. of India. Bidders have to submit all relevant documents as per the said office orders.

C. Bid Templates

C.1 Technical Bid - Supply, installation, liaisoning and commissioning of VHF Repeater station, Base station, mobile stations and handsets

1. VHF/ VRF Systems

Accessories for base station

1. Main Power supply unit

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Main Power supply unit		-		

2. VHF hand held unit

Hand held units

Item specifications for VHF hand held unit

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	General :Frequency Range	VHF : 136-174 MHz, UHF: 400-470 MHz .	Yes / No / Explain		
2	General :Channels Capacity	Minimum 1024	Yes / No / Explain		
3	General :Channel Spacing	12.5 KHz / 20KHz / 25 KHz	Yes / No / Explain		
4	General :Battery	Minimum 2500 mAh Li-ion rechargeable battery	Yes / No / Explain		
5	General :Frequency Stability	±0.5 PPM	Yes / No / Explain		
6	General :Antenna Impedance	50 Ω	Yes / No / Explain		
7	General :Dimension (HXWxD)	Maximum 135mm x 60mm x 45mm	Yes / No / Explain		
8	General :Weight	< 370g	Yes / No / Explain		

9	General :LCD Display	160x128 pixels, 6 rows or better	Yes / No / Explain		
10	Transmitter Specifications:RF Power Output	VHF : 1W/5W, UHF: 1W/4W	Yes / No / Explain		
11	Transmitter Specifications:FM Hum/Noise	≤ 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		
12	Transmitter Specifications:Adjacent Channel power	60 db @12.5 KHz, 70db @20/25 kHz or better	Yes / No / Explain		
13	Transmitter Specifications:Audio Distortion	≤3%	Yes / No / Explain		
14	Receiver Specifications:Sensitivity	0.22 μV for 12 dB SINAD or better	Yes / No / Explain		
15	Receiver Specifications:Selectivity	60db @12.5 KHz/70db @20/25kHz or better	Yes / No / Explain		
16	Receiver Specifications:Spurious Response Rejection	70db @12.5/20/25kHz (TIA603 or Equivalent) or better	Yes / No / Explain		
17	Receiver Specifications:Hum and Noise	≤ 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		
18	Receiver Specifications:Rated Audio Power Output	Minimum 0.5W	Yes / No / Explain		
19	Receiver Specifications:Rated Audio distortion	≤3%	Yes / No / Explain		
20	Receiver Specifications:Conducted Spurious Emission	<-57dBm	Yes / No / Explain		
21	Environmental Conditions :Operating Temperature	-30 °C to +60 °C	Yes / No / Explain		
22	Environmental Conditions :Dust & water Protection	IP67 or better	Yes / No / Explain		
23	Environmental Conditions :Humidity	As per MIL 810 Standard	Yes / No / Explain		
24	Environmental Conditions :Shock and vibration	As per MIL 810 Standard	Yes / No / Explain		

3. VHF/ VRF Systems

Accessories for Mobile station

1. 0db mobile whip antenna

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Antenna	0db mobile whip antenna	Yes / No / Explain		

4. VHF Repeater Repeater station

Item specifications for VHF Repeater

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	General :Frequency Range	VHF : 136-174 MHz, UHF: 400-470 MHz .	Yes / No / Explain		
2	General :Channels Capacity	≥64	Yes / No / Explain		
3	General :Channel Spacing	12.5 KHz / 20KHz / 25 KHz	Yes / No / Explain		
4	General :Operating Voltage	DC : 13.6V ±15% AC : 230V,50Hz	Yes / No / Explain		
5	General :Frequency Stability	±0.5 PPM	Yes / No / Explain		
6	General :Antenna Impedance	50 Ω	Yes / No / Explain		
7	General :Dimension (HXWxD)	Maximum 50mm x 510mm x 360mm	Yes / No / Explain		
8	General :Networking	Conventional Mode	Yes / No / Explain		
9	Transmitter Specifications :RF Power Output	5-50W (Adjustable)	Yes / No / Explain		
10	Transmitter Specifications :a) Conducted/Radiated Emission	Operating : ≤1 GHz, -36dBm	Yes / No / Explain		
11	Transmitter Specifications :b) Conducted/Radiated Emission	Operating : >1 GHz - 30dBm	Yes / No / Explain		
12	Transmitter Specifications :c) Conducted/Radiated Emission	Standby : ≤1 GHz, - 57dBm	Yes / No / Explain		

13	Transmitter Specifications :d) Conducted/Radiated Emission	Standby : >1 GHz - 47dBm	Yes / No / Explain		
14	Transmitter Specifications :Modulation Limit	±2.5kHz @ 12.5kHz, ±4.0kHz @ 20 kHz, ±5.0kHz @ 25kHz	Yes / No / Explain		
15	Transmitter Specifications :FM Hum/Noise	≤ 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		
16	Transmitter Specifications :Adjacent Channel power	60 db @12.5 KHz, 70db @20/25 kHz or better	Yes / No / Explain		
17	Transmitter Specifications :Audio Distortion	≤3%	Yes / No / Explain		
18	Receiver Specifications :a) Sensitivity	Analogue : <0.2 μV for 12 dB SINAD or equivalent	Yes / No / Explain		
19	Receiver Specifications :b) Sensitivity	Digital : <0.2 μV	Yes / No / Explain		
20	Receiver Specifications :Selectivity	65db @12.5 KHz/75db @20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
21	Receiver Specifications :Inter-Modulation	75db @12.5/20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
22	Receiver Specifications :Spurious Response Rejection	80db @12.5/20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
23	Receiver Specifications :Blocking	90db or better	Yes / No / Explain		
24	Receiver Specifications :Hum and Noise	≤ 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		
25	Environmental Conditions :Operating Temperature	-30 °C to +60 °C	Yes / No / Explain		

5. VHF Mobile station

Mobile station

Item specifications for VHF Mobile station

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	General :Frequency Range	VHF : 136-174 MHz, UHF: 400-470 MHz .	Yes / No / Explain		
2	General :Channels Capacity	Minimum 1024	Yes / No / Explain		
3	General :Channel Spacing	12.5 KHz / 20KHz / 25 KHz	Yes / No / Explain		
4	General :Operating Voltage	DC : 13.6V \pm 15% AC : 230V,50Hz	Yes / No / Explain		
5	General :a) Current Drain	Standby, < 0.5A	Yes / No / Explain		
6	General :b) Current Drain	Receive, < 2.0A	Yes / No / Explain		
7	General :c) Current Drain	Transmit, 1W <3A	Yes / No / Explain		
8	General :d) Current Drain	Transmit, 5W <4A	Yes / No / Explain		
9	General :e) Current Drain	Transmit, 25W <8A	Yes / No / Explain		
10	General :Frequency Stability	\pm 0.5 PPM	Yes / No / Explain		
11	General :Antenna Impedance	50 Ω	Yes / No / Explain		
12	General :Dimension (HXWxD)	Maximum 65mm x 185mm x 185mm	Yes / No / Explain		
13	General :Weight	Maximum 1700 g	Yes / No / Explain		
14	General :LCD Display	Min 2.4 inch	Yes / No / Explain		
15	Transmitter Specifications :RF Power Output	VHF : 5-25W , UHF : 1-25W	Yes / No / Explain		
16	Transmitter Specifications :Conducted/Radiated Emission	-36dBm<1Ghz; -30dBm>1GHz	Yes / No / Explain		
17	Transmitter Specifications :Modulation Limit	\pm 2.5kHz @ 12.5kHz, \pm 4.0kHz @ 20 kHz, \pm 5.0kHz @ 25kHz	Yes / No / Explain		
18	Transmitter Specifications :FM Hum/Noise	\leq 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		
19	Transmitter Specifications :Adjacent Channel power	60 db @12.5 KHz, 70db @20/25 kHz or better	Yes / No / Explain		

20	Transmitter Specifications :Audio Distortion	≤3%	Yes / No / Explain		
21	Receiver Specifications :Sensitivity	Analogue : 0.22 μV for 12 dB SINAD or better	Yes / No / Explain		
22	Receiver Specifications :Selectivity	60db @12.5 KHz/70db @20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
23	Receiver Specifications :Inter-Modulation	70db @12.5/20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
24	Receiver Specifications :Spurious Response Rejection	70db @12.5/20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
25	Receiver Specifications :Blocking	80db or better	Yes / No / Explain		
26	Receiver Specifications :Hum and Noise	≤ 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		
27	Receiver Specifications :a) Rated Audio power output	Internal, 3W or higher	Yes / No / Explain		
28	Receiver Specifications :b) Rated Audio power output	External(8 Ohm load), 7.5W or higher	Yes / No / Explain		
29	Receiver Specifications :Rated Audio distortion	≤3%	Yes / No / Explain		
30	Receiver Specifications :Conducted spurious Emission	<-57dBm	Yes / No / Explain		
31	Environmental Conditions :Operating Temperature	-30° C to +60° C	Yes / No / Explain		
32	Environmental Conditions :Dust & water Protection	IP54 or better	Yes / No / Explain		
33	Environmental Conditions :Humidity	As per MIL 810 Standard	Yes / No / Explain		
34	Environmental Conditions :Shock and vibration	As per MIL 810 Standard	Yes / No / Explain		

6. VHF/ VRF Systems

Accessories for Repeater Station

1. 6 db Antenna

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Antenna	6 db Antenna	Yes / No / Explain		

7. VHF/ VRF Systems

Accessories for base station

2. 6db Fibre Antenna

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Antenna	6db Fibre Antenna	Yes / No / Explain		

8. VHF/ VRF Systems

Installation charges for Base station

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation of Base station		-		

9. VHF/ VRF Systems

Installation charges for Mobile station

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation of Mobile stations		-		

10. Liaison charge to obtaining License for VHF

License for two spot frequencies from WPC

Item specifications for Liaison charge to obtaining License for VHF

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Obtaining License for VHF License for two spot frequencies from WPC		-		

11. VHF/ VRF Systems

Installation charges for Repeater station

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation of Repeater Station		-		

12. VHF/ VRF Systems

Accessories for Repeater Station

2. RG 213 RF Coaxial Cable (30 meters) with end connectors

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Connections	RG 213 RF Coaxial Cable (30 meters) with end connectors	Yes / No / Explain		

13. VHF/ VRF Systems

3. RG 217 RF Coaxial Cable (30 meters) with end connectors

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Connections	RG 217 RF Coaxial Cable (30 meters) with end connectors	Yes / No / Explain		

14. VHF Base station

Base station

Item specifications for VHF Base station

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	General :Frequency Range	VHF : 136-174 MHz, UHF: 400-470 MHz .	Yes / No / Explain		
2	General :Channels Capacity	Minimum 1024	Yes / No / Explain		
3	General :Channel Spacing	12.5 KHz / 20KHz / 25 KHz	Yes / No / Explain		
4	General :Operating Voltage	DC : 13.6V ±15% AC : 230V,50Hz	Yes / No / Explain		
5	General :a) Current Drain	Standby, < 0.5A	Yes / No / Explain		
6	General :b) Current Drain	Receive, < 2.0A	Yes / No / Explain		
7	General :c) Current Drain	Transmit, 1W <3A	Yes / No / Explain		
8	General :d) Current Drain	Transmit, 5W <4A	Yes / No / Explain		
9	General :e) Current Drain	Transmit, 25W <8A	Yes / No / Explain		
10	General :Frequency Stability	±0.5 PPM	Yes / No / Explain		
11	General :Antenna Impedance	50 Ω	Yes / No / Explain		
12	General :Dimension (HXWxD)	Maximum 65mm x 185mm x 185mm	Yes / No / Explain		
13	General :Weight	Maximum 1700 g	Yes / No / Explain		
14	General :LCD Display	Min 2.4 inch	Yes / No / Explain		
15	Transmitter Specifications :RF Power Output	VHF : 5-25W , UHF : 1-25W	Yes / No / Explain		
16	Transmitter Specifications :Conducted/Radiated Emission	-36dBm<1Ghz; -30dBm>1GHz	Yes / No / Explain		
17	Transmitter Specifications :Modulation Limit	±2.5kHz @ 12.5kHz, ±4.0kHz @ 20 kHz, ±5.0kHz @ 25kHz	Yes / No / Explain		
18	Transmitter Specifications :FM Hum/Noise	≤ 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		

19	Transmitter Specifications :Adjacent Channel power	60 db @12.5 KHz, 70db @20/25 kHz or better	Yes / No / Explain		
20	Transmitter Specifications :Audio Distortion	≤3%	Yes / No / Explain		
21	Receiver Specifications :Sensitivity	Analogue : 0.22 μV for 12 dB SINAD or better	Yes / No / Explain		
22	Receiver Specifications :Selectivity	60db @12.5 KHz/70db @20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
23	Receiver Specifications :Inter-Modulation	70db @12.5/20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
24	Receiver Specifications :Spurious Response Rejection	70db @12.5/20/25kHz (TIA-603 or equivalent) or better	Yes / No / Explain		
25	Receiver Specifications :Blocking	80db or better	Yes / No / Explain		
26	Receiver Specifications :Hum and Noise	≤ 40db @12.5kHz, 43db @20kHz, 45db @25kHz	Yes / No / Explain		
27	Receiver Specifications :a) Rated Audio power output	Internal, 3W or higher	Yes / No / Explain		
28	Receiver Specifications : b)Rated Audio power output	External(8 Ohm load), 7.5W or higher	Yes / No / Explain		
29	Receiver Specifications :Rated Audio distortion	≤3%	Yes / No / Explain		
30	Receiver Specifications :Conducted spurious Emission	<-57dBm	Yes / No / Explain		
31	Environmental Conditions :Operating Temperature	-30°C to +60°C	Yes / No / Explain		
32	Environmental Conditions :Dust & water Protection	IP54 or better	Yes / No / Explain		
33	Environmental Conditions :Humidity	As per MIL 810 Standard	Yes / No / Explain		
34	Environmental Conditions :Shock and vibration	As per MIL 810 Standard	Yes / No / Explain		

15. VHF/ VRF Systems

1. Spare battery for Handheld units

Item specifications for VHF/ VRF Systems

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Spare battery for Handheld units		-		

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	The radio set should be light weight and compact operating in conventional system in single location and automatic roaming in other areas of operation using IP base Repeater network without manual intervention.		-		
2	The microprocessor control of key circuits should provide automatic operation of most internal function, which allows for consistent performance and reliability.		-		

3	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.				
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Supporting Documents required from Vendor

- 1. Dealer Possession License shall be submitted along with the tender.**
- 2. Previous purchase orders related to supply of similar items shall be submitted**
- 3. A brochure of the quoted items shall be submitted along with the bid.**
- 4. Firm must produce certificates of National Accreditation Board of Testing and Calibration Laboratories (NABL) approved laboratory and International laboratory accreditation corporation (ILAC)**
- 5. The compliance statement of the technical specification shall be submitted and any deviations from the required specification shall be provided.**
- 6. Local suppliers declaration (Class II) as per MII shall be submitted**
- 7. OEM authorisation certificate shall be provided**

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	The supplier shall be responsible for attaining the license for two frequencies from Department of Telecommunication.	Yes / No / Explain	
2	Necessary technical training regarding Operational, Configuration and Programming of the set:- The onsite training shall be given to technical persons of 2-3 days minimum.	Yes / No / Explain	
3	OEM should be a part of the DMR association and must provide the DMR association certificate as well as the show the interoperability with others to prove.	Yes / No / Explain	
4	Warranty for 36 Month for radios and 12 months for accessories from the date of acceptance of items.	Yes / No / Explain	
5	Bidder to indicate the customer care centre and OEM Service centre in India, for, after sales warranty support.	Yes / No / Explain	
6	As per the Rule 144(xi) of General Financial Rule ,2017, any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy service and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the competent authority ie., Department for Promotion of Industry and Internal Trade (DPIIT). Hence, Vendors or Agents of a Vendor (Indian or others) from a country sharing border with India shall submit copy of valid registration made with Department for Promotion of Industry and Internal Trade (DPIIT), Government of India along with the tender mandatorily, without which the offer will be treated as invalid.	Yes / No / Explain	
7	Whether applicable GST percentage mentioned in your offer. (If mentioned as EXTRA OR INCLUDED in your quote, please mention the percentage in Remarks Column).	Yes / No / Explain	

8	ISRO is eligible for Customs Duty Concession vide Notification No.12/2012-Customs dated 17.03.2012. and Notification No. 50/2017-customs dtd 30.06.2017 [We will provide Customs Duty Concession Certificate for bought out items being imported for manufacturing the ordered items (List of items to be imported with quantities to be enclosed along with offer) OR for Orders placed on Foreign Vendors OR for High Sea Sale orders.]	Yes / No / Explain	
9	Installation Charges, if any, (If mentioned as EXTRA OR INCLUDED in your quote, please mention the percentage in Remarks Column).	Yes / No / Explain	
10	Delivery Term :- FOR : LPSC, VALIAMALA If "NO" specify the exact delivery term with relevant details in remarks column	Yes / No / Explain	
11	Delivery Period (If any specific delivery period is mentioned in the tender, please comply the same. If not agreed, please mention your delivery period in remarks column OR if already mentioned in your quote please mention as already furnished in the quote)	Yes / No / Explain	
12	Payment Term :- (a)100% payment shall be made through RTGS within 30 days of receipt and acceptance of the item at our site.	Yes / No / Explain	
13	Liquidated Damages (LD) :- If the ordered items are not supplied within the delivery schedule, LD shall be levied from your bill @ 0.5% per week for the undelivered items subject to a maximum of 10% of the order value for the delayed period.	Yes / No / Explain	
14	Warranty :- Warranty for the offered item shall be from the date of installation/acceptance of the item at our site for a minimum period of one years or as specified in the tender document.	Yes / No / Explain	

15	<p>Security Deposit (SD) :- (only for order value above Rs.5 Lakh) You have to furnish a Bank Guarantee for 3% of the order value (from a bank of international repute in case of foreign vendors) within 10 days of receipt of Order towards the faithful execution of the order valid till the completion of the scope of work as per order plus sixty days. (This will be returned to you immediately on execution of the order satisfactorily as per order terms. In case of non-performance / poor performance, the amount will be forfeited).</p>	Yes / No / Explain	
16	<p>Performance Bank Guarantee (PBG) :- You have to submit a PBG from a Nationalised / Scheduled Bank (from a bank of international repute incase of foreign vendors) for 3% of the order value towards the performance of the system at the time of supply valid till the completion of warranty period plus 60 days as per the format provided by the Department. OR 3% OF THE ORDER VALUE SHALL BE WITH HELD TILL THE COMPLETION OF WARRANTY PERIOD PLUS 60 DAYS.</p>	Yes / No / Explain	
17	<p>In case, if parties are unable to provide two separate BGs, i.e., one for SD and one for PBG, they can submit a combined BG for SD & PBG within 10 days of receipt of order for 3% of order value valid till the completion of total contractual obligation (i.e., supply period plus warranty period plus 60 days) as per the format provided by the Department.</p>	Yes / No / Explain	
18	<p>Insurance :- Being a Govt. Of India Dept., Insurance is not required at our cost. Please ensure the safe delivery of the ordered item with proper AIR / SEA / ROAD worthy packing.</p>	Yes / No / Explain	

19	<p>Validity of Offer :-</p> <p>(a)The validity of the offers should be 90 days (in case of single part tender) from the date of opening of the tenders.</p> <p>(b)The validity of the offers should be 120 days (in case two part tender) from the date of opening of the tenders.</p> <p>Note :- Tenders shorter than offer validity mentioned above will not be considered for evaluation.</p>	Yes / No / Explain	
20	Bank Details, viz., Bank Name, Branch, Address, Account No., IFSC (Details to be given in Vendor Terms Column)	Yes / No / Explain	
21	PAN No. (Details to be furnished in Vendor Terms Column)	Yes / No / Explain	
22	GST No. (Details to be given in Vendor Terms Column)	Yes / No / Explain	
23	Purchase Order to be placed on whom (Please mention the Address, Phone No. & E-mail id)	Yes / No / Explain	
24	HSN Code of offered items	Yes / No / Explain	
25	Local content involved in the quoted item shall be declared/ certified in percentage.	Yes / No / Explain	
26	Furnish the details of place(s) where the value addition for the quoted item takes place.	Yes / No / Explain	
27	State whether MSE or not. If yes, please provide the necessary documentary proof	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Other Costs, if any	Remark
1	VHF/ VRF Systems Accessories for base station 1. Main Power supply unit	1.00 Nos.		-			
2	VHF hand held unit Hand held units	9.00 Nos.		-			

3	VHF/ VRF Systems Accessories for Mobile station 1. 0db mobile whip antenna	3.00 Nos.		-			
4	VHF Repeater Repeater station	1.00 Nos.		-			
5	VHF Mobile station Mobile station	3.00 Nos.		-			
6	VHF/ VRF Systems Accessories for Repeater Station 1. 6 db Antenna	1.00 Nos.		-			
7	VHF/ VRF Systems Accessories for base station 2. 6db Fibre Antenna	1.00 Nos.		-			
8	VHF/ VRF Systems Installation charges for Base station	1.00 Nos.		-			
9	VHF/ VRF Systems Installation charges for Mobile station	3.00 Nos.		-			
10	Liaison charge to obtaining License for VHF License for two spot frequencies from WPC	1.00 Lumsm		-			
11	VHF/ VRF Systems Installation charges for Repeater station	1.00 Nos.		-			

12	VHF/ VRF Systems Accessories for Repeater Station 2. RG 213 RF Coaxial Cable (30 meters) with end connectors	1.00 Nos.		-			
13	VHF/ VRF Systems 3. RG 217 RF Coaxial Cable (30 meters) with end connectors	1.00 Nos.		-			
14	VHF Base station Base station	1.00 Nos.		-			
15	VHF/ VRF Systems 1. Spare battery for Handheld units	9.00 Nos.		-			

Common charges (Applicable for all items)

Additional Costs, if any	
Additional Costs, if any (Value)	