प्रसार भारती/Prasar Bharati (भारत का लोक सेवा प्रसारक)

(India's Public Service Broadcaster)

आकाशवाणी महानिदेशालय /Directorate General: Akashvani योजना एवं विकास एकक, आकाशवाणी भवन, संसद मार्ग, नई दिल्ली-110001 P & D Unit, Akashvani Bhawan, Sansad Marg, New Delhi-110001 [एफ. एम. डिजाईन अनुभाग /FM Design Section]

File No. 5kW kW Mobile-9/4/2022-D (TD/FM)

Dated 14.07.2023

Subject: Specifications for Supply of 2-Bay VHF FM Antenna-regarding Industry feedback & budgetary quotes.

Dear Sir.

DG: Akashvani is planning for procurement of above referred equipment/item, on open tender basis. Draft technical specification is enclosed for reference.

In this regard, the Prospective bidders from India are requested to give their industry feedback (if any) on the above referred draft Specification up to 28.07.2023. To get an estimated cost, the Prospective bidders from India are also requested to give their budgetary quote for the above referred subject up to 28.07.2023. Feedback regarding availability of local content and percentage of local content may also be provided.

Industry feedback (if any) and budgetary quote may be sent to this Directorate at the following e-mail addresses-

ravindragoyal@prasarbharati.gov.in manzoor@prasarbharati.gov.in vijendrapanwar@prasarbharati.gov.in ravishankermeena@prasarbharati.gov.in

Encl: As above.

(मंजूर अली/Manzoor Ali)

उपनिदेशक(अभियान्त्रिकी)/Dy.Director (Engg.)

कृते महानिदेशक /For Director General

To: (through email)

1. Prasar Bharati web-site

2. The Prospective Bidders

3. DDG (E-Purchase), P&D Unit, DG: AIR, New Delhi

कते महानिदेशक /For Director General

PRASAR BHARATI

(India's Public Service Broadcaster)

DIRECTORATE GENERAL: ALL INDIA RADIO (PLANNING & DEVELOPMENT UNIT)

SPECIFICATION FOR SUPPLY OF 2-BAY VERTICALLY POLARIZED SIDE MOUNT (POLE TYPE) VHF FM ANTENNA -5 Nos.

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A. <u>ESSENTIAL REQUIREMENTS FOR THE TENDER:</u>

- 1. (i) The tenderer should submit Schedule of Requirements/Materials of Supply without <u>price</u> in the same format as given in Section-4.0 (I & II) of AIR Specifications in the technical bid, failing which the tender shall be considered incomplete and is liable to be rejected.
 - (ii) It is also mandatory to mention *Make & Model of the offered equipment* in the Schedule of Requirements/Materials of Supply, failing which the tender shall be considered incomplete and is liable to be rejected.
 - (iii) Make/Model and detailed specifications of the equipments/items being offered shall be mentioned categorically, to access the full merit of the offer, failing which tender shall be considered incomplete and is liable to be rejected. **Broader terms viz. Equivalent/similar will not be accepted.**
- 2. Each statement of this specifications has to be complied with & supported by printed technical literature, technical data sheets, schematic drawings and technical manuals from the manufacturer of the equipment by the tenderer, to assess the full merit of the offer without which tender will be considered incomplete and is liable to be rejected.
- 3. The tenderer should submit the tender offer to AIR in the format given below, section wise & clause wise, in respect of all the sections of technical specifications. The OEM/tenderer must provide the page number reference, in column (4) of the table given below, of the technical bid clearly indicating the volume number also, if any, for each supporting document to verify the parametric values shown in the compliance statement, to assess the full merit of the offer, failing which the tender shall be considered incomplete and is liable to be rejected.

S. No. of AIR	Details of AIR		The page no. of the tender	Remarks
Specifications	Specifications	Compliance	offer, where the	
(Section wise & Clause	(Part/ Section wise	(Yes/No)	information/ supporting	
wise)	& Clause wise)		document is available.	
(1)	(2)	(3)	(4)	(5)
A. Essential requirements				
for tender				
B. Essential eligibility				
criteria for tenderers				
Section-1 Clause wise				
Section-2 Clause wise				
Section-3 Clause wise				
Section-4 Clause wise				

- 4. The tenderer should quote the rate/cost of individual items in the tender offer while submitting the tender offer for spares (OPTIONAL) in commercial bid. *Optional items will not be considered for ranking purpose.*
- 5. The complete technical specifications (Section wise & Clause wise) compliance statements along with Schedule of Requirements/Materials (un-priced) must be signed & stamped by the respective Original Equipment Manufacturer (OEM) in the tender document, failing which the tender shall be considered incomplete and is liable to be rejected.
 - In case tender offer is from other than the Original Equipment Manufacturer, the tenderer must also sign & stamp the complete Technical specifications (Section wise & Clause wise) compliance statements, failing which the tender shall be considered incomplete and is liable to be rejected. The OEM & tenderer should mention their name & designation of the signatories with full address, phone number, e-mail addresses etc.
- 6. The authorization and guarantee must be given by respective Original Equipment Manufacturer (OEM) on their letter head pad duly signed & stamped. In case tender offer is from other than the Original Equipment Manufacturer, the tenderer must also give guarantee on their letter head pad duly signed & stamped, failing which the tender shall be considered incomplete and is liable to be rejected. Guarantee shall be as per the format given in AIR specification.
- 7. In case tender offer is from other than the Original Equipment Manufacturer, the tenderer should also furnish a certificate from the OEM that the tenderer can quote items of the OEM directly, failing which the tender shall be considered incomplete and is liable to be rejected without any notice/back reference.
- 8. Any change in the AIR technical specifications format or language or in parameters or of any other nature including the deletion/addition of technical specifications clause, words, lines in the technical specifications compliance statement by the OEM/ tenderer will not be acceptable to AIR and the tender is liable to be rejected.
- 9. Prasar Bharati will follow the reciprocal market access strategy of the Government of India, which describes on the Clause 10(d) of Public Procurement Preference to Make in India, Order 2017. The Purchaser shall have right for not consider any Bid and may restrict such Bidders from the bidding process; who originate from those countries, where they do not allow market access for Indian companies; in such cases, the Clause 10 (d) of Public Procurement Preference to Make in India, order 2017, shall be invoked wherever applicable,

when it is relevant.

10. Amendment in General Financial Rules (GFRs), 2017-Golobal Tender Enquiry issued vide F. No. 12/17/2019-PPD dated 15.05.2020 of Government of India, Ministry of Finance, Department of Expenditure, Public Procurement Division shall be applicable.

B. ESSENTIAL ELIGIBILITY CRITERIA FOR TENDERERS:

- a. The tenderer shall be from India only.
- b. The tenderer should either be the OEM of VHF FM Antenna or their authorized representative/dealer.
- c.In case the tenderer is the authorized representative/dealer, the tenderer must be an authorized representative/dealer of any OEM of UHF/VHF FM Antenna for last three years or more **OR** must be in the business of sales and supply of UHF/VHF FM Antenna last three years or more. Documentary evidence to support this must be provided.
- d.(i) The OEM of the VHF FM Antenna must have an experience of manufacturing and supplying 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna for at least last 7 years. Documentary evidence to support this must be provided.
- (ii) The OEM should have supplied 2-Bay or more VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna to reputed/public broadcasters. The OEM must provide the details of past supply record (in the format given below) for at least 10 Nos. of such offered VHF FM Antenna, supplied during last 7 years ending last day of the month previous to the one in which the tender is invited.

Supply Order No. with date	Type & Model of the supplied VHF FM Antenna		Name of the broadcaster with full postal address including e-mail address to whom VHF FM Antenna was supplied.	Remarks
(1)	(2)	(3)	(4)	(5)

- (iii) All India Radio reserves the right to get performance feedback of the VHF FM Antenna from any of the above broadcasters named by the tenderer/OEM.
- (iv) Copies of supply order/completion certificates from end users of at least 05 Nos., out of the 10 Nos. of VHF FM Antenna submitted by the tenderer in above format, are also to be enclosed by the tenderer.
- e. The OEM of the offered VHF FM Antenna must have his local office/authorized representative/dealer in India for after sales support. A certificate as per Annexure-I duly signed by the OEM as well as local office/authorized representative/dealer must be submitted with the offer. Copy of Agreement/MoU executed between OEMs and their authorized representative/dealer duly signed by both must also be submitted with the offer.

SECTION-I

GENERAL SPECIFICATIONS:

- 1.0 The 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna as per AIR specification shall be used for round the clock for continuous operation without any interruption in VHF FM broadcast service at AIR station for FM transmitter/studio setup. The offered equipment/items as per specification shall be field proven for satisfactory operation.
- 1.1 Please refer tender documents for general terms and conditions of contract for supply including all the commercial aspects like, Packing and packing list, Insurance and Marine Risk etc. Payment terms, Penalty/Compensation for delay, Damages and liabilities, Time Period and Extension for Delay, Foreclosure of contract due to Abandonment or Reduction in scope of supply, Cancellation of contract in full or part, Recovery of security deposit, Performance Guarantee, Unsatisfactory workmanship, Damages incurred during transit, tenderer liable for damages, Defects, Recovery of compensation, Ensuring payment and amenities, tenderer to indemnify Government against Patent Rights, Release of security deposit, Safety Code, insurance from manufacturer's works/factory to respective site etc. i.e. in totality.

1.2 INSPECTION:

- a. 2-Bay VHF FM Antenna & accessories will be accepted on the basis of OEM's test certificates (as per AIR specifications) duly stamped and signed by respective OEM on their letterhead, failing which test certificates will be considered incomplete and equipment offered by the firm is liable to be rejected.
- b. The complete Acceptance Test Procedure/Protocol (ATP) will be prepared by the respective OEM of the equipment/items as per Section-IV (A&B) and submitted to DDG (E-FM), P&D Unit, DG: AIR for approval within 15 days of issue of Acceptance of Tender. The **approved ATP** shall form the basis for test certificate of actual performance measurements/inspection to be carried out by OEM. AIR has the right to include other technical parameters in ATP submitted by OEM within the ambit of specification of the product offered.

1.3 INFORMATION TO BE SUPPLIED WITH THE TENDER:

- (i) The complete technical specifications (Section wise & Clause wise) compliance statement alongwith Schedule of Requirements/Materials (un-priced) duly signed & stamped by the respective Original Equipment Manufacturer (OEM) and countersigned by the tenderer as per the format given above in clause A (3), to assess the full merit of the offer, without which the tender offer will be considered incomplete and is liable for rejection.
- (ii) Complete printed technical literature/data sheet/schematic drawings/detailed information including technical manual of 2-Bay VHF FM Antenna from the Original Equipment Manufacturer (OEM) in support of compliance statement should be furnished for all the items of the tender, to assess the full merit of the offer, without which the tender offer will be considered incomplete and is liable for rejection.
- (iii) Detailed Schedule of Requirements/Materials (un-priced) for supply of 2-Bay VHF FM Antenna should be in conformity with Section-IV (A&B) without any change in the format, **failing which**, **the tender**

will be considered incomplete and is liable for rejection. The tenderer must quote all items.

- (iv) Descriptive information and complete details of each equipment offered shall be given by the tenderer.
- (v) Country of Origin, Make, Type & Model of all the offered items should be mentioned including the name & address of their vendors.
- (vi) A copy of the Technical Manual must be enclosed with technical bid for assessing the complete 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna. The Technical Manual must include at least the details given below:
 - (a) General description of the offered 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna, block diagram/schematic drawings etc.
 - (b) A suggestive drawing with dimensions in metres for installation of the 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna system with all allied equipment.
 - (c) Diagrams showing the isometric view of 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna and allied equipment with dimensions in metres.
 - (d) Installation Manual & drawings with dimensions in respect of offered equipment.
 - (e) Photograph of the 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna.
 - (f) All *Do's and Don'ts* which are essential for safe Installation, Operation & Maintenance of the 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna.

1.4 INFORMATION TO BE SUPPLIED BY THE TENDERER WITHIN 15 DAYS AFTER ISSUE OF ACCEPTANCE OF TENDER:

One set of Technical Manuals (for Installation, Testing, Commissioning, Operation & Maintenance, including theory of operation and fault diagnosis) **COLOUR** printed and duly bound for 2-Bay VERTICALLY Polarized Side Mount (Pole Type) VHF FM Antenna along with associated equipment, items & accessories along with soft copy on CD must be supplied to "Dy. Director General (Engg.) (FM), P & D Unit, DG: AIR, New Delhi-110001", for examination & approval.

1.5 INFORMATION TO PRECEDE DESPATCH OF EQUIPMENT:

Following information should be supplied to the Dy. Director General (Engg.) (FM), P & D Unit, DG:AIR and each of the consignee, two months prior to dispatch of Equipment:

- a) Detailed list of equipment under dispatch.
- b) Photograph showing location of various units/subunits with item numbers marked thereon.

1.6 INFORMATION TO BE SUPPLIED ALONGWITH EQUIPMENT:

Technical manuals (for Installation, testing, commissioning, Operation, Maintenance & Servicing, including theory of operation and fault diagnosis) **COLOUR** printed and duly bound for 2-Bay VHF FM Antenna with soft copy on pen drive shall be supplied as per details given below: -

- (i) For Consignee- 2 Sets of technical manual in hard copies printed and duly bound alongwith one soft copy on pen drive.
- (ii) For the following Offices/Officers-1 Set of technical manual in hard copy printed and duly bound alongwith One soft copy on pen drive for each offices/officers:

 DDG(E-FM), DDG(E-TM), Zonal Office (Maintenance Wing of North zone), Zonal Office (Project Wing of North zone), Technical Library(P&D Unit), R&D & NABM (T)

1.7 GUARANTEE:

The tenderer shall submit with his tender an undertaking to accept the following guarantees: {This Guarantee clause is applicable to all the equipments/items mentioned in Schedule of Requirements/Materials (un-priced)}.

- (i) A guarantee that the equipment supplied will be in accordance with these specifications, varied only to the extent stated in his tender and agreed to in the contract.
- (ii) A guarantee to make good within 15 days (from the date of first intimation to OEM/tenderer) at tenderer's expense any component which becomes defective under normal operating conditions, for 36 months from the date of supply at D-6 Godown Delhi. If the tenderer failed to rectify the fault within the stipulated period of 15 days, the guarantee period for that particular location (site) would be extended corresponding to the outage period.
- (iii) A guarantee to supply all components for a period of ten years from the date of acceptance of Equipment at site, at rates at which these are being supplied by him to other customers and also should match prices of original manufactures of these components prevailing at that time.
- (iv) If at any stage during next 10 years, the manufacturer stops production of this model of Equipment/items, he shall intimate All India Radio in advance to enable the latter to stock the critical items.

1.8 LANGUAGE/UNITS:

All information supplied by the tenderer & all markings, notes, designation on the drawings & associated write-ups shall be in "English language" only.

All dimensions, units on drawings, all references to weights, measures & quantities shall be in MKS.

1.9 DELIVERY OF EQUIPMENT:

Supply at D-6 Godown, Delhi shall have to be completed within **Five (5) months** from the date of issue of Acceptance of Tender.

1.10 PACKING AND PACKING LISTS:

All the equipment should be securely and properly packed to withstand transit hazards. Equipment packing shall be fit for sea freight and incorporate adequate protection against ingress of moisture. Packing slips giving details of the items contained in each package shall be placed inside the package in a water proof envelop to enable easy identification and should contain cross references to item/part numbers of installation drawings/components lists. Copies of packing slips and other details should be sent separately to respective consignee and also to The Dy. Director General (Engg.) (FM), P & D Unit, DG: AIR, New Delhi.

1.11 INSURANCE AND MARINE RISKS ETC:

Please refer to commercial terms.

1.12 MAINTENANCE SUPPORT AND SPARES:

- (a) The minimum recommended essential spares shall be quoted separately by the tenderer.
- (b) The minimum recommended essential spares may be based on predicted rate of failure.
- (c) In case, the tenderer quotes the optional items as 'a set', the details of the components/items offered in the 'set' must be spelt out clearly including their Make & Model and quantity.

1.13 LOCAL REPRESENTATIVE/DEALER:

- (a) The OEM should have complete setup for maintenance/repair of the VHF FM Antenna in India, either of its own or through local office/authorized representative/dealer.
- (b) The local office/authorized representative/dealer will be the nodal point for resolving issues related to after sales support. It is the responsibility of local office/authorized representative/dealer to arrange the repair/replacement of faulty items. Any module of VHF FM Antenna requiring repairs will be repaired at site. If it is not feasible to repair the module at site, the same will be collected from the site by local office/authorized representative/dealer that will arrange repairs locally. The cost of transportation, repairs etc. shall be borne by the tenderer during the guarantee period.
- (c) After sales support for the repairs/maintenance of VHF FM Antenna after the completion of guarantee period, shall also be provided by the OEM of the VHF FM Antenna through their local office/authorized representative/dealer in India.
- (d) The details of technical facilities available with local office/authorized representative/dealer for after sales support such as test bench, necessary test & measuring equipment and photographs thereof, must be provided in the technical bid.
- (e) At the discretion of AIR, AIR representative(s) may visit the works of local office/authorized representative/dealer of OEM in India to ensure/verify that adequate technical infrastructure is available for after sales service for timely resolving the issues related to attending/replacing the equipments. Tenders from the tenderers who failed to meet these criteria shall be considered incomplete and is liable to be rejected.

SECTION-II

- 1. One No. 2-Bay vertically polarized (Pole Type) VHF Antenna along with mounting arrangement shall be supplied with each set.
- 2. The Antenna will be mounted on the top of the tower.
- 3. Following documents shall be supplied along with the Tender:
- a. VSWR and Return loss curve for complete Frequency range. b. Horizontal Radiation Pattern. c. Vertical Radiation Pattern

4. Brief Specifications of the Antenna to be supplied are given below:

S. No.	Parameters	Specifications	
1.	Operating Frequency Range	88 MHz -108 MHz	
2.	Impedance	50Ω unbalanced	
3.	VSWR	Better than 1.2: 1 over 5 MHz from 100 MHz to 105 MHz nd	
		to be optimized to 1.1: 1 for operating frequency (to be intimated	
	D II II' C ' (T + 1)	later at the time of placement of order)	
4.	Power Handling Capacity (Total)	≥ 7.5 kW	
5.	Polarization	Vertical	
6.	Gain w.r.t. Half Wave Dipole	≥ 4.5 dBd	
7.	ightning Protection	All metal parts to be DC grounded.	
8.	Branch feeder cables and Clamps	Suitable Branch feeder cable fitted with 7/8" EIA connector at	
	for mounting Dipoles	both ends and lamps to be supplied with the Antenna.	
9.	Input Connector of main power	1-5/8" connector suitable for connecting 1-5/8" RF Coaxial foam	
10	divider of antenna system	dielectric cable fitted with 1-5/8" EIA Connector.	
10.	Output Connectors of main power	7/8" EIA connector	
1.1	divider of antenna system	7/011 (21 A	
11.	Input Connector of dipoles	7/8" EIA connector	
12.	Mounting of Antenna	All the required hardware for mounting of the antenna including Antenna Supporting Interface on which the antenna will be mounted shall be supplied along with the Antenna system.	
13.	Maximum Wind Speed	198 km/Hour	
14.	Ambient Temperature	-30°C to 40 °C	
15.	Humidity	95% non-condensing	
16.	Rainfall	Moderate to heavy	
17.	External material of Dipoles and rigid feed lines	Exterior of dipoles will be made of stainless steel or Marine Brass. Rigid lines with Marine Brass or Copper.	
18.	Internal material (for Dipoles, Power Divider, Rigid lines & interconnecting feed cables/ lines)	Inner lines of Dipoles will be of Copper, Brass & those of Power Dividers will be of copper or Brass. All electrical contacts will be silver plated. All inners and bullets of connecting head or mating head will be made of Beryllium copper and silver plated. Insulators will be made of virgin Teflon.	
19.	Maximum Wind Speed	198 km/Hour	
20.	Dead load (Approx.)	100 Kg including mounting hardware	
21.	Wind loading (Approx.)	250 Kg	

SECTION-III

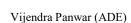
INSPECTION DETAILS

2-Bay VHF FM Antenna & accessories will be accepted on the basis of OEM's test certificate of actual performance measurements as per AIR specification before dispatch to All India Radio and receipt of equipments/items at site in good condition.

The Original Equipment Manufacturer's (OEM) test certificates shall be duly signed & stamped on the letter head of the OEM, failing which Original Equipment Manufacturer's (OEM) test certificates will be considered incomplete and equipment offered by the tenderer is liable to be rejected.

Following information should also form part of OEM test certificate for each 2-Bay VHF FM Antenna & accessories.

- 1. Make, Type, Model and Country of Origin of the accessories and spares.
- 2. Measurements of all parameters as per Section-II of Technical Specification.



SECTION-IV (A) SCHEDULE OF REQUIREMENTS/MATERIALS (UN-PRICED) {FOR ONE SET OF 2-BAY VERTICALLY POLARIZED SIDE MOUNT (POLE TYPE) VHF FM ANTENNA}

S. NO.	Description	Make	Model	Qty
1.	Supply of 2-Bay vertically Polarized Side Mount (Pole			1Set
	Type) VHF FM Antenna system complete as per AIR			Complete
	Specification including clamps, technical manual etc.			
2.	Any other items/hardware materials etc. offered for the completeness of the above antenna system.			1 Lot
	(Item wise details of the offered items/hardware materials			
	etc. shall be given by the tenderer)			
	State NA, if not applicable			

SECTION-IV (B)

SPARES (OPTIONAL) {FOR ONE SET OF 2-BAY VERTICALLY POLARIZED SIDE MOUNT (POLE TYPE) VHF FM ANTENNA}

S. NO.	Description	Make	Model	Qty
1.0	Recommended spares and any other accessories.			1 Set
	(Items wise details of offered material including part			Complete
	number are to be given by the tenderer)			
2.0	(a) "O" ring			1 Set
	(b) Silicon grease			1 Lot
	(c) Connectors assorted sizes			1 Set
	(d) RF distributors air dielectric coaxial cables			1 Set
	(e) Dipole			2 Nos.
	(f) Other miscellaneous items.			1 Lot

All India Radio at its own discretion may procure spares for a value not exceeding 10% of the cost of equipments. The tenderer should quote all the essential spares.

940057/2023/FM Design - P&D Unit Specification No: 2 Bay VHF FM Antenna/14/ February/2023-D (TD/FM)

ANNEXURE-I

PERFORMA FOR INFORMATION ABOUT LOCAL OFFICE FOR AFTER SALES SUPPORT

1.	Address of Office :	
	Telephone :	
	Fax No. :	
	E-mail Address :	
2.	Address for communication (if different)	
3.	Legal Status (Authorized Representative/ liaison	
	office/registered company etc.)	
4.	Name & Address of Local official	
5.	Brief details of Technical facilities available for after sales	
	support	
6.	Main line of business, specialization and number of years of	
	operation	
7.	Total number of permanent technical employees including	
	their designation and qualification	
8.	Details of Agreement/MoU for after sales support with	Date of Agreement:
	OEM	Executed at:
	(Copy must be provided with the offer)	Executed by:

Annexure-II

Consignee details-To be supplied at D-6 Godown, New Delhi.