INDIAN INSTITUTE OF TROPICAL METEOROLOGY (IITM)

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Request for Information on Upgradation of X-Band Polarimetric Doppler Weather Scanning Radar with SSPA transmitter and revival of operation

1.0 INTRODUCTION:

a) The Indian Institute of Tropical Meteorology (IITM) is an autonomous institute of the Ministry of Earth Sciences (MoES) fully devoted to cutting edge research in various aspects of Weather and Climate Sciences. In the process of modernization, IITM is planning to upgrade its X-band radar with state of art technology.

b) Request for Information document is called from the Indigenous radar manufacturers/fabricators/vendors/firms, on behalf of representatives of IITM to comprehensively upgrade an X-band dual-polarized Doppler weather scanning radar by replacing the existing magnetron technology with advanced Solid State Power Amplifier (SSPA) technology. The information received will aid in exploring the technical feasibilities and upgradation procedure to be adopted for the 13-year-old X-band radar in finalizing the list of deliverables while retaining usable hardware components of the old radar that can support economic comprehensive maintenance by the upgrading firm till the usable period envisioned (say, another ten years).

c) This call of RFI is for planning purpose only and will carry no right in getting precedence/ privilege for a particular firm/ its representatives/ agents; but, to enable authorities/ representatives of IITM in devising a document leading for the upgradation of the equipment cited, through an unbiased competitive bid.

d) IITM may utilize the information provided by the RFI respondents in drafting a competitive solicitation, a Request for Proposal (RFP) for the upgradation of the X-band radar.

e) Participation in this RFI is voluntary and IITM shall not pay for the preparation of any information submitted by a respondent or for IITM's use of that information.

2.0 BRIEF ON THE EQUIPMENT CALLING INFORMATION:

a) The existing radar at IITM Campus is a magnetron-based X-band dual-polarized Doppler weather scanning radar procured from M/s Enterprise Electronics Corporation (OEM), USA (Model: DWSR-2001X/SIDPOL) in 2010. The radar shelter is fully air conditioned and mounted on a mobile truck trailer with a 30 KVA, single-phase portable diesel generator to meet the operational power requirement of the radar. The radar system with all peripherals is intended to be upgraded to a fully functional X-band dual-polarized Doppler weather scanning radar system with SSPA based transmitter in a suitable mount on the existing truck trailer for all weather operations and capable of detecting and estimating meteorological parameters of severe weather phenomena that cause widespread damage to life and property.

b) Detailed information is sought on the radar manufacturers/fabricators/vendors/firms, regarding, the broad specifications as below:

Type of Radar:	X–Band (9.3 to 9.6 GHz) dual-polarization [STAR preferred] Portable Doppler Weather Scanning radar with SSPA transmitter
Platform:	To be mounted on existing truck trailer for all terrain conditions with suitable provisions to easily mount and dismantle for transportation to any specific location
Polarization:	Horizontal and Vertical with Simultaneous transmit and simultaneous receive mode and alternate mode
Range of Observation:	Minimum 100 km

Unambiguous Velocity: Minimum 40 m/s

Scanning method: Weather Surveillance; Elevation over Azimuth

Scanning mode: PPI, RHI, Volume, Point mode, Sector, and Sector blanking

Software: Full-fledged software for antenna control, platform maneuver, polarimetric data collection, processing, product generation, display and archival, provision of data transmission to the nearest station.

Data acquisition and format: I&Q, RAW moments, and derived products in standard formats HDF5/NetCDF

Weather: Temp range -10^{o}C to +50^{o}C; Humidity 0-100%

Detection capability: In line with the existing system (i.e., -25 dBZ at 20 km) with a smooth matched MDS matching between different pulse scheme and minimal range side lobes.

List of Items: Details of Hardware that can be retained of the present existing system during the process of upgrade that can be supported for the next ten years through CAMC. List of probable deliverables other than the items planned for retention should also be indicated

3.0 DELIVERY OF RESPONSES

a) Responses on the above aspect are to be provided through electronic mail to psu.iitm@tropmet.res.in or Fax: +91-20-2586-5142 or by post to The Director, IITM Pune, Dr Homi Bhabha Road, Pashan, Pune-411008 **not later than 31 May 2023.**

b) Responses must be complete in accordance with the requirements of this RFI. Statements made by a Respondent shall be without ambiguity, and with adequate elaboration, where necessary, for clear understanding.

c) If required, the interested firm representatives/agents may visit to IITM in taking stock of the present system.

4.0 COST INCURRED IN RESPONDING

All costs directly or indirectly related to preparation of a response, or any oral presentation required to supplement and/or clarify a solution which may be required by IITM or visit to IITM for physical examination of the existing radar system shall be the sole responsibility of and shall be borne by the participating Respondents.

5.0 RFI SCHEDULE

Schedule of events:

RFI Release	:	**02 May 2023**
Deadline for Queries	:	**16 May 2023 up to 1730 hrs.**
Responses due date	:	**31 May 2023 up to 1500 hrs.**

Note:

1. **Vendors may require to give a presentation on their RFI responses within 30 days from the last date of submission. Exact date of presentations will be intimated.**
2. **The Institute reserves the right to cancel the RFI at any stage either in full or part as the case may be without assigning any reason thereof.**