

Detailed Specifications of Global Tender Notice No: 02/2017

S. NO.	TENDER NO.	BRIEF DETAILS OF ITEM(S)	PAGE NOS.
1.	14-VII/PPT(2541)17-PB/T-08	A Turn Key solution for end to end PTP time Dissemination services	2-3
2.	14-VII/AK(2578)17-PB/T-09	Doppler Sodar	4-6

Tender No: 14-VII/PPT(2541)16-PB/T-08

Sr No.	Required Specification		
1	PTP IEEE 1588 -2008 GrandMaster	Input	1PPS, 5 MHz or 10 MHz, GNSS input
		Output	GigE , E1 or T1 ,10MHz, 1PPS
		Client Capacity PTP	≥1000 clients at 128 messages per second
		Client Capacity: NTP	≥ 5000 per second
		Time Stamping Precision	≤ 10 ns rms or better
		Frequency Accuracy: Holdover	≤2.5 x 10 ⁻¹¹ / per day
		Time Accuracy tracking to GPS	≤ ±100 ns
		Time Accuracy Holdover	≤2.5 us per day
		GNSS input/output	32 channel Multi GNSS- At least two different constellations should be able to track(GPS/GLONASS/BEIDOU etc) with Antenna and associated cables and accessories.
		Protocols	IPv4, IPv6, NTP V2,V3,V4, SSH, CLI, SNMP,DHCP, HTTPS, other ITU-T compliant Telecom PTP protocols for example G.812.
		Optic Interface	with optical SFP
	Optional:	Hardware redundancy for power, oscillator etc	
2	PTP EDGE CLOCK	Frequency Holdover accuracy	≤ 10 ⁻⁹ / per day
		Protocols	IPv4, HTTP, SSL, ICMP, DHCP, IEEE 1588-2008,
		Ethernet ports	3 Gbit ports

		PTP support	IEEE 1588-2008, 128 messages per seconds
		Time & Frequency Accuracy	$\leq \pm 100$ ns to UTC
		Other interfaces	RS232, E1 or T1, SFP(optical), 10 MHz or 5MHz, 1 PPS, GNSS interface
		GNSS Receiver	32 channel Multi GNSS- At least two different constellations should be able to track(GPS/GLONASS/BEIDOU etc) with Antenna and associated cables and accessories
3	Power	AC	220V \pm 10%, 50 Hz,
		DC (optional)	24 V,
4	Environmental specification		
	Temperature:	25 °C \pm 10%,	
	Humidity	50 \pm 10%	
	Physical specifications	Rack Mountable	
5	Server compatible for NMS(Network Management system)	Compatible for NMS system as mentioned in sr no. 5 with min specs as: Intel core i7 , fourth generation or better, RAM 16 GB, 2 TB Hard Disk, High resolution graphics card , LINUX or Window 10, 3 years onsite warranty, Monitors Two Nos: 27' one and 23' one. Cable/port/card support to connect multiple monitors, with wireless Keyboard, wireless mouse, HDMI support etc	
6	Management software System (NMS)	Comprehensive/auditable time client, server and management software with precise time synchronization over network: which can Manage, configure, update, monitor from single server, network adaptable, LINUX or Window based, Detailed event logging for NTP and PTP both.	
7	Optional	IEEE 1588-2008 slot card for computers (2 Nos)	
8	Any others	Related cables and accessories.	
9	Warranty/ Guaranty	Standard warranty or guarantee should be provided	

Tender No: 14-VII/AK(2578)16-PB/T-09

Technical specifications for procurement of Doppler Sonic Detection and ranging (SODAR) Instrument for continuous monitoring of relative intensity of temperature eddies, horizontal and vertical wind speed and direction in the lower atmosphere.

This Instrument (SODAR) will be installed at G.B. Pant Institute, Almora (Uttanchal)

S.No.	Item	Specifications	
1.	Name of Instrument	SODAR for continuous monitoring of relative intensity of temperature eddies in the lower atmosphere as a function of height and time, horizontal and vertical wind speed and direction. The system should provide information of the mixing height, inversion height and stability condition. The SODAR should have phased array antenna system.	
2.	Transmitter Characteristics	Operating range	From 20 meter to 1000 meter from ground in fair weather condition and average range should not be less than 700 meters.
		Transmit Frequency	Between 1 to 7 kHz (user selectable)
		Pulse length	Between 10 millisecond to 900 milliseconds. (user selectable)
		Pulse repetition frequency	Selective as per the range
		Sampling height Increment	User selectable
		Minimum Sampling height	20 meters
		Averaging and Reporting Interval	User selectable

3.	Deliverables	Back scattered vertical echo profile and 3D wind speed profile	
4.	Receiver Characteristics	➤ Gain (max) : 100±20 dB	
5.	Range & Accuracy	Vertical speed range	Greater than or equal to ± 10 m/sec
		Vertical speed accuracy	± 0.5 m/sec or better.
		Horizontal wind speed range	0 to 30 m/sec or better.
		Horizontal speed accuracy	Less than or equal to ± 0.5 m/sec or better.
		Horizontal direction accuracy:	Less than or equal to three degrees.
6.	Ambient Operating conditions	Temperature	-10°C to 60° C
		Relative Humidity	10 -100%
7.	Power requirement	230±10 % VAC/50±5 Hz	
8.	Additional accessories.	GPS for positioning, Pressure, temperature and humidity sensors. GPRS modem for remote control and data transfer	
9.	Warranty	Two year's on-site warranty after installation and commissioning.	

10.	Installation and training	Onsite demonstration and training for three persons for time period as required. Operating manuals should also be provided.
11.	Software/hardware support (optional)	Automatic estimation of mixing height, inversion height, stability classification and lapse rate. Provision for Solar panel based power supply to the instrument. Price should be quoted for each item individually.
12.	AMC(optional)	AMC should be quoted for One year after warranty period.
