वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद् Council of Scientific & Industrial Research राष्ट्रीय वांतरिक्ष प्रयोगशालाएं National Aerospace Laboratories



INVITATION FOR BIDS/NIT

Tender No. NAL/PUR/STTD/247/21-Y

Dated: 29-Oct-2021

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research (CSIR), an autonomous body under Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites online quotation for procurement of the following item(s) for day to day research work.

SI.No.	Description of Items	Unit	Quantity
1	High Speed Data Acquisition System 16/32 Channels.	Set	01
	(Please refer annexure for detailed Specification)	- A. 1985)	

Single / Double Bid	Single	Tender Type	Limited
Bid Security (EMD) (in INR)	Bid Security Declaration should be enclosed with quotation	Bid submission end date	22-Nov-2021 10.00 Hrs
Performance Security	3% of the purchase order value	Bid opening date	23-Nov-2021 11.00 Hrs

- 01. Tender Documents may be downloaded from Central Public Procurement Portal <u>https://www.etenders.gov.in</u>. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website <u>https://www.etenders.gov.in</u>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.
- 02. Tenderers can access tender documents on the website (For searching in the NIC site https://www.etenders.gov.in, kindly go to Tender Search option, select tender type and select ' Council of Scientific and Industrial Research' in organization tab and select NAL-Bengaluru-CSIR in department type Thereafter, Click on "Search" button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website https://www.etenders.gov.in, as per the schedule given in the next page.
- 03. Either the Indian Agent on behalf of the Foreign principal or the Foreign principal can bid directly in a tender but not both. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent cannot represent two different Foreign principals in one tender.
- 04. Unsolicited / conditional / unsigned tenders (Quotations)/Quotations received after the due date and time shall be summarily rejected. The Bidder shall comply the terms and conditions of the tender, failing which, the offer shall be liable for rejection.

पी बी सं. 1779, एचएएल एयरपोर्ट रोड, कोडिहल्ली, बेंगलुरु - 560 017, भारत, P B No 1779, HAL Airport Road, Kodihalli, Bengaluru - 560 017, INDIA फोन / Phone : (का./ Off) : +91 - 80 - 2508 6040 - 45, फैक्स / FAX : +91-80-2526 9611



CSIR-National Aerospace Laboratories, Bengaluru-560 017, INDIA

- 05. The bids of those Bidders failing to comply with the following clauses will be summarily rejected.
 - a. The Bidders proposing to supply finished products directly/indirectly from vendors of countries sharing the land border with India should submit copy of registration done with the Ministry of Home Affairs and Ministry of External Affairs.
 - b. If the Products supplied are not from vendors of countries sharing land border with India, the Bidders have to enclose a declaration to that effect.
- 06. Bidders are requested to refer to the instruction regarding Procurement Policies for Make in India issued by Ministry of Commerce and Industry, Department of Industrial Policy and Promotion dated. 28-May-2018 and 4-Jun-2020 and guidelines as and when issued.
- 07. The prospective bidders are requested to refer to the Standard Terms and Conditions available on NAL Internet (www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids
- 08. The Director, CSIR- National Aerospace Laboratories, Bengaluru reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reasons there for.
- 09. Participation in this tender is by invitation only and is limited to the selected bidders. Unsolicited offers are liable to be ignored. However, bidders who desire to participate in such tenders in future may bring it to the notice of Procuring Entity and apply for registration

Controller of Stores & Purchase For and on behalf of CSIR

Ref: NAL/PUR/STTD/247/21-Y

Annexure

SI. Parameters Details No. 1 Maximum Sampling Rate 100,00,00 Samples/sec (Simultaneous, with all the Should be able to record / store signals for a minimum period of channels connected) 5 minutes at maximum sampling rate either through built in internal memory or directly on the external memory available with dedicated PC / Laptop (dedicated PC / Laptop will be provided by NAL). 2 **Total number of Channels** 16 channels 3 200,000 -500,000 Hz Maximum Bandwidth 4 Input Voltage range and direct +/- 10V or above Voltage Measurement 5 **Excitation Voltage** 0 - 15V or above DAS should be compatible with the following sensors 6 IEPE /ICP (Accelerometers / Pressure sensors / Load cell etc.) . ٠ Strain gauge sensors for all channels (Quarter / Half / Full Bridge (120 Ohm and 350 Ohm) and Shunt calibration required Piezo resistive / Capacitive /MEMS (Accelerometers / Pressure sensors / Load cell etc.) . Note: 1. It is mandatory for the vendor to demonstrate the compatibility of the above listed sensors with the DAS system (with suitable adapter / signal conditioners required if any) provided for acceptance 7 End Connectors / adaptors for 0 Appropriate connectors / adaptors to be provided for all the the sensors connection to the 16 channels to acquire strain gauge / piezo resistive sensors DAS data at any given time. Additionally, 4 numbers of connectors / adaptors to acquire . ICP sensor data to be provided 8 Analog to Digital Conversion 16 Bit minimum 9 Trigger 1) Internal level trigger 2) Software / Manual trigger 3) Should have provision for External trigger (TTL 5V etc.) 10 Power Should be able to power DAS with 220 V supply (mandatory requirement). It will be an added advantage if there is an option to power using DC batteries with charger, along with 220V supply 11 Additional Requirements Automatic sensor assignment (TEDS) Detailed channel diagnostics Real time data display Different Gain Options in terms of Maximum Voltage Output should be available. All inputs electrically isolated. PC connection through Ethernet or USB 2 or above. 12 Accuracy (needs equal or DC: better accuracy than those Range <10 V: ±0.04 % of reading ±0.05 % of range ±10 µv given in the table) ○ Range \geq 10 V: ±0.06 % of reading ±0.02 % of range ±5 μv Up to 1kHz : ±0.04 % of reading ±0.02 % of range

Specification for High speed DAS

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		 Up to 10kHz : ±0.2 % of reading ±0.05 % of range 		
		 Up to 100kHz: ±3 % of reading ±0.1 % of range 		
		 Up to 500kHz: ±11 % of reading ±0.5 % of range 		
13	Software	Calibration with shunt resister for strain gauge with		
		Quarter/half/full bridge configuration		
		Other filters like Bessels and SAE filters, FFT, PSD, etc should be		
		available in the software for post processing of the test data.		
		Should support user at selectable sample rate export.		
		Computation setting to be provided by combining any		
		following operators and parameter measurement items like		
		Differentiation, Integration, trigonometric function, FFT etc.		
		Should support formats like txt, csv, DIAdem, ISO, and		
		other standard data formats etc.		
14	Optional	김 사람은 방법에 가지 않는 것이 아니는 것이 같은 것이 많이 많이 많이 많이 많이 없다.		
	Measurement of Curr	rent and Charge		
	Measurement of Erec			
	 inteasurement of Free 	quency		

Hardware Trigger Option

Note:

- 1. To provide installation, commissioning and training on use of the DAS and the software.
- 2. Vendor should demonstrate the DAS compatibility with the sensors available at NAL (Piezo resistive accelerometers, ICP sensors like load cells and accelerometers, Direct Voltage piezoelectric force sensors (10V FSO), Strain gauges (Quarter bridge) etc.
- 3. The vendor to provide acceptance report or certificate on point 3 and payment will be processed after completion of the above requirements
- 4. Vendor should give minimum of 3-years Warranty for DAS.
- 5. System requirement at NAL: Vendor should inform on any specific PC / Laptop hardware requirement (like OS /Processor /RAM /SSD /HDD /USB /Ethernet /Graphics) to support the DAS system

BID-SECURING DECLARATION FORM

Date: _____

Bid No. _____

To (insert complete name and address of the purchaser)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

(a)	have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during
	the period of bid validity specified in the form of Bid; or
(b)	having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
	(i) fail or refuse to execute the contract, if required, or
	(ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing he Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of: (insert complete name of Bidder)

Dated on _____

_____ day of ______(insert date of signing)

Corporate Seal (where appropriate)

Note:

- 1. In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid
- 2. Bid Security declaration must be signed in by the Proprietor/CEO/MD or equivalent level of Officer of the company.