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

CSIR - NAL Estd. 1959
ISO 9001 : 2015
Certified Organization

INVITATION FOR BIDS/NIT

Tender No. NAL/PUR/SED/030/21-Y   **Dated: 07-Jul-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.

Sl.No.	Description of Items	Unit	Quantity
1	Block on Ring Type Reichert tester with Jet Lubrication and Data Acquisition System. (Please refer annexure for detailed specification)	Nos	01

Single / Double Bid	Single	Tender Type	Open
Bid Security (EMD) (in INR)	Bid Security Declaration should be enclosed with quotation	Bid submission end date	29-Jul-2021 10.00 Hrs
Performance Security	3% of the purchase order value	Bid opening date	30-Jul-2021 11.00 Hrs

01. Tender Documents may be downloaded from Central Public Procurement Portal https://www.etenders.gov.in. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website https://www.etenders.gov.in. 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.

05. **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.**

06. **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.**

The bids of those Bidders failing to comply with the above clauses will be summarily rejected.

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

http//www.nal.res.in   purchasek@nal.res.in

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

07. 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.

08. **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**

09. 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.

Raman Kumar
Stores & Purchase Officer

Specifications for Block on ring Reichert tester with jet lubrication and Data Acquisition System

Description:

The instrument must be strictly designed to simulate the block on disc type of contact configuration creating a cross cylinder contact geometry. **The system must be bench top and equipped with jet lubrication module.** The system should have capability to simulate dry and lubricated sliding wear test under variable speed and load conditions. The tester should have a provision for lubricant heating under jet lubrication. The instrument must be equipped with various sensors and system to control/monitor load, speed, lubricant temperature. Instrument should offer connected sensors and digital productivity tools complying with industry 4.0 standards to make it a smarter system

Specification details:

1- Loading type: dead weight loading
2- Normal load : 100 to 500 N precise dead weights
3- Speed: Variable in the range 500 to 1500 rpm.
4- Frictional force: 0 to 500 N with a resolution 0.1N is needed.
5- Dial gauge: 0 to 2 mm for wear measurement, dial indicator with magnetic stand, 1µm resolution.
6- Bottom Specimen: Friction wheel/ Ring of diameter 35 mm and width 10 mm to achieve the sliding velocity of 0.9 to 2.8 m/sec
7- Top specimen: rectangular block of size 12 x 12x 18 mm (height x width x length) and roller of size 12 x 18 mm (dia x length) to achieve variable contact pressures.
8- Lubrication type : Jet lubrication
9- Lubricant temperature: Ambient to 80°C
10- Lubricant system: Lubricant need to be heated to desired temperature and supplied between the interface by a nozzle in the form of jet
11- One set of block and ring standard material to be supplied at no extra cost

Control, data acquisition system and software interface

- The tribometer should be equipped with electronic control with easy test setup, and a Lab VIEW based software for online data acquisition (friction, lubricant temperature, speed etc.,) and post analysis module with comparison of multiple test for offline processing.
- The controller must have speed controller knob, lubricant temperature controller. It contains load, speed, duration, display to view inputs and outputs in real-time during the tests.
- The test duration must be controlled by both revolution mode and time duration.
- The software should have a future for up gradation to centralized cloud-based data storage that assures data traceability and complies with ISO 27001.
- This upgradable software should offer user the ability to visualize real-time data on during a test.
- It should offer real time health monitoring for tracking instrument usage, minimizing unplanned downtime to ensure maximum availability of instrument.

Acceptance criteria

1. Calibration reports for normal load, friction force, speed and temperature should be submitted with the bid
2. Detailed test report of Reichert tester using standard roller on ring geometry should be submitted demonstrating repeatability of friction force and wear scar diameter using distilled water. Wear scar area for distilled water should be within 30 to 40 mm^2.
3. Real time monitoring of the friction data and retrieval of data like load, Cof
4. Software CD, Instruction Manual including required documentation or screenshots of the software for cloud based storage data analytics and continuous monitoring of the instrument on desktop
5. Training to be imparted at CSIR-NAL
6. One set of block and ring standard material to be supplied at no extra cost

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.