

**Tender Notification for the Procurement of Laser Doppler Vibrometer (LDV)  
(Last Date for Submission: 4<sup>th</sup> February 2022)**

This is a Request for Quote (RFQ) from **Class I** and **Class II** local suppliers/manufacturers only for the procurement of a single-point non-contact Laser Doppler Vibrometer (LDV), for the Department of Aerospace Engineering at the Indian Institute of Science (IISc), Bangalore.

Only the Indian Original Equipment Manufacturer (OEM) or their distributor shall submit a response demonstrating their capabilities to produce the requested equipment to the primary point of contact listed below. **The quotations should be on FOR-IISc Bangalore basis in INR only.**

With respect to this tender, the rules laid out by the Government of India in order **No. P45021/2/2017-pp-BE-II** issued by the Public Procurement Section, Department or Promotion of Industry and Internal Trade, Ministry of Commerce, and Industry, dated 4th June 2020 will be followed. The bidders must go through the Government of India order stated above and follow all the rules and regulations therein.

Relevant definitions as per Government of India order:

**Class-I local supplier** - A supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%.

**Class-II local supplier** - A supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%.

**Non-local supplier** - A supplier or service provider, whose goods, services or works offered for procurement, has local content less than 20%” is ineligible to participate in this tender.

**Local content** – The amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, in percent.

The bidder should be Class I or Class II local suppliers/manufacturers for this specific product. The tender should be submitted in two separate sealed envelopes: one containing the **technical bid** and the other containing the **commercial bid**, both of which should reach us, duly signed on or before **4<sup>th</sup> February 2022, 5PM**. The bids should be addressed to:

**The Chairman,  
Department of Aerospace Engineering  
Indian Institute of Science  
Bangalore 560012, India.  
Kind attention: Dr. Rajesh Chaunsali  
Email: [chair.aero@iisc.ac.in](mailto:chair.aero@iisc.ac.in), [rchaunsali@iisc.ac.in](mailto:rchaunsali@iisc.ac.in)**

Phone: +91-80-2293-3028/3027

**Section 1: Technical specifications and components required for the LDV**

**Mandatory Specifications:**

Please note that the requirements listed below are only guidelines. It does not disbar bids that do not meet the criteria listed. Vendors are requested to quote for equipment that meet the criteria to the best extent possible and list deviations. Deviations are NOT an automatic reason for disqualification. They will be discussed by the technical committee prior to making an informed decision.

S.N.	Parameter	Specification / Comments
1	Frequency	From DC to 1MHz based on encoder configuration. Upgradable beyond 20 MHz.
2	Max. Velocity	Should detect vibrating velocity of up to 12 m/s and upgradable beyond 24 m/s.
3	Best achievable resolutions	<b>a. Displacement:</b> 0.4 pm (with frequency range up to 1 MHz) <b>b. Velocity:</b> 4 nm/s/ $\sqrt{Hz}$ (with frequency range of at least 1 MHz)
4	Working Distance	From 200 mm to >10 m
5	Mounting conditions	Decoder output should be highly stable over continuous operation irrespective of inertial movements of tilting/translation of fiber/laser head.
6	Analog signal output	3 BNC connectors ( $\pm 2V$ ) for simultaneous and phase synchronised output of following physical parameters: displacement, velocity and acceleration with internal/external trigger with TTL signal.
7	Digital signal output	Data rate up to 1Gbps at 16-bit resolution or higher.
8	Signal Trigger	Should trigger all parameters measurements with TTL signal.
9	Operating Temperature	+5 to +40° C or better

10	Software	<ul style="list-style-type: none"> <li>a. Customized user defined graph and statistics</li> <li>b. Compatible with Windows 10 and 11, 64 bit</li> <li>c. Customized data export to Excel and/or m-script format.</li> <li>d. Full control over all system parameters (focusing, bandwidth, filter settings, cut off frequency, etc.)</li> <li>e. Real-time history of data with analysis and visualization tools. True plug-and-play capability with auto recognition of system components.</li> </ul>
11	Power Supply	100 - 240V AC (50-60Hz) or 12V DC
12	Filters	High-pass and low-pass filters with multiple frequency options

**Mandatory Requirements/Features:**

1. Laser head should emit class 1 or 2 type target laser beam in the visible region.
2. Laser beam should be manual focusing and should accommodate flexural wave applications.
3. Accessories must be provided along with the product for the safe transport of system within and outside of lab environment.
4. Manufacturer should provide necessary hardware and Data Acquisition software tools to control LDV and its peripherals. Data should be transferable through one or more of the industrial grade communication protocols like I2C, Ethernet, RS232, USB, etc.
5. DAQ system should possess a sampling rate of at least 2.5 times more than that of its input signal.
6. Peripherals like camera with minimum resolution of 640 x 480 pixel must be provided to increase the precision in laser focusing and positioning.
7. Laboratory site requirements (if any) to install the product(s) must be provided.
8. The LDV should be warranted for a standard period of 3 years.
9. Servicing and Repairing of LDV should be done in timeframe of 3-5 days, and 10-15 days if the LDV must be shipped abroad (Excluding time of shipping).
10. Lead time of delivery of LDV must be in 10 to 12 weeks, upon finalization of the order.
11. Laser head should be portable for confined space operations as well as swappable for more options in optical upgradation as well as to extend field applications.
12. Cable connecting the major components should be of at least 2 m length.

**Optional Requirements/Features:**

1. Device should establish communication with WLAN for online data streaming and remote control.
2. Power Supply should be warranted for a standard period of 2 years.

3. Quick connect electrical cables of at least 3 m length. Cables should be de-attachable from both the Power supply and the LDV side to facilitate easy transportation.

The above features must be available on the vibrometer system. This upgrade should be made possible at the user laboratory without the need of shipping the system back to the manufacturer.

## **Section 2: Terms and Conditions**

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).
  - a) **Technical Bid** (Part-A) – Technical bid consisting of all technical details and checklist for conformance to technical specifications. The proposal should contain a compliance table. The compliance table should include all the items of the technical specifications in the same order and format. The first additional column should describe product specifications. The next column should indicate compliance in a “Yes” or “No” response. If “Yes”, necessary supporting data must be provided. If “No”, comments on it must be specified.
  - b) **Commercial Bid** (Part-B) – Indicating item-wise price for the items mentioned in the technical bid, as per the format of quotation provided in tender, and other commercial terms and conditions.
3. The technical bid and price bid should each be placed in separate sealed covers, superscribing on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscribed with the Tender No, Tender Description & Due Date.
4. The SEALED COVER superscribing tender number and due date & should reach the office of **The Chairman, Department of Aerospace Engineering, Indian Institute of Science Bangalore 560012, India. Kind attention: Dr. Rajesh Chaunsali**, on or before the due date mentioned in the tender notice. In case the due date happens to be a holiday, the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.
5. The covering letter should clearly state that whether the vendor is a Class-I or Class-II local supplier. Failing this the bid will be automatically rejected.
6. The Bidder should have supplied similar equipment to reputed organizations, preferably India’s Centrally Funded Technical Institutes (IITs, IISc, IISERs, NITs). Please provide the details and contact information of the users in India. The bidder should also include testimonials on service quality/ Purchase Orders from its existing users.
7. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect should be provided.

8. The lead-time for the delivery of the equipment should be less than 10 to 12 weeks from the date of receipt of necessary documents. It should be clearly mentioned in the technical and commercial bids.

9. The vendor must provide a compliance statement in a tabular form concerning each technical specification in the tender document duly supported by the manufacturer's literature and published papers. Any other claim will not be accepted and may lead to the rejection of the bid. The bidder should agree to provide factory acceptance test data at the time of supply and validate at the time of installation.

10. Wherever requested, data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.

11. The institute reserves the right to verify the accuracy and seek clarification of submitted specifications after opening the technical bids. Based on such clarification, if specifications are found to be unsuitable, the technical committee reserves the right to disqualify vendors. Any discrepancy between the promised and verified specifications will be deemed as technical noncompliance.

12. The technical bid should also contain warranty details and terms. Further, any periodic maintenance requirements for regular operation should be specified in detail, along with the extent of coverage under warranty for such maintenance activity.

13. The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid. The vendor is responsible for the installation of the system at the institute, along with the training of end-users.

14. In the commercial bid, the price should be inclusive of all discounts. The price quotation should include the cost of installation and training of potential users if any. Please quote the price of each optional item, separately.

15. The quotations should be on FOR-IISc Bangalore basis in INR only. GST must be not more than 5% (Institute will provide the GST exemption certificate).

16. Any statutory increase in the taxes and duties subsequent to the bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore, subject to the claim being supported by documentary evidence. However, if any decrease takes place, the advantage will have to be passed on to IISc, Bangalore. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from the bidding process.

17. The vendor should have an office with qualified technical service personnel based in India and should assure a response time of less than five business days.

18. The vendor must submit a list of all Indian customers (only Government of India organizations) where similar systems have been installed. References from this list can be used to disqualify vendors with a poor track record of service, build quality, system performance, or poor availability of spares. Additionally, IISc shall have the absolute right to take the opinion of other departments/institutes for their opinion/experience about the bidder's services/sales.

Based on such input, IISc may decide about the rejection of a bid of such bidder(s) with poor track record of service, build quality, system performance or poor availability of spares.

19. Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a) To accept OR reject the lowest tender or any other tender or all the tenders.
- b) To accept any tender in full or in part.

- c) To reject the tender, offer not confirming the tender terms.
20. The indenter reserves the right to relax any or all the above conditions without assigning any reason.
21. If the vendor has agreed to the technical specifications but has offered a product that does not meet these technical specifications, the equipment is liable to be summarily rejected. No deviation with respect to specifications is acceptable.

Vendors should utilize the following checklist to ensure that their submissions are complete and contain all the required information.

**Checklist:**

1. The technical bid should contain:

- a) Bidder's details (Annexure 1)
- b) Declaration regarding experience (Annexure 2)
- c) Declaration of track record (Annexure 3)
- d) Declaration of acceptance of terms and conditions (Annexure 4)
- e) Technical compliance certificate as per item 2(a) of the above Terms and Conditions.
- f) Full technical specifications of the LDV along with the product brochure.
- g) LDV warranty details with terms, and any periodic maintenance requirements
- h) A list of LDVs supplied to the organizations in India, the contact details, and user testimonials as per item 6 of Terms and Conditions.

2. The commercial bid should contain:

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

- A table, in the format shown below, must be submitted in the commercial bid on mandatory/ essential items noted in the technical specification, and also in Terms and Conditions.

S.No	Description	Cat.Number	Quantity	Unit price	Sub Total
1.	Essential items noted in the technical specification				

2.	Subsystems or accessories				
3.	Warranty (years)				
4.	Shipping and delivery to IISc				

- A similar table for optional items noted in technical specification and also in Terms and Conditions must be submitted in the commercial bid.

Your quotation must be submitted in two separate sealed envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date. These envelopes should be put in a bigger cover which should also be sealed and duly superscribed with Tender No., Tender description & Due Date.

**All enquiries and clarification requests should be directed to:**

Rajesh Chaunsali, Assistant Professor  
 Department of Aerospace Engineering  
 Indian Institute of Science, Bengaluru 560 012, India  
 Email: rchaunsali [at]iisc [dot] ac[dot] in  
 Phone: +91-80-2293-3028

**Annexure 1:**

Details of the Bidder: The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Sr. No	Description	Details
1	Name of the Bidder	
2	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3	Registration No/ Trade License, (attach attested copy)	
4	Registered Office Address	
5	Address for communication	
6	Contact person- Name and Designation	



7	Telephone No	
8	Email ID	
9	Website	
10	PAN No. (attach copy)	
11	GST No. (attach copy)	

(Signature of the Bidder)

Name:

Date:

Designation, Seal

**Annexure 2:**

Declaration regarding experience

To,  
The Chairman,  
Department of Aerospace Engineering  
Indian Institute of Science  
Bangalore 560012, India.  
Kind attention: Prof. Rajesh Chaunsali

Ref: Tender No:

Dated:

Sub: Supply and installation of single-point non-contact Laser Doppler Vibrometer (LDV).

I have carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing single-point non-contact LDV.

(Signature of the Bidder)

Name:

Date:

Designation, Seal

**Annexure 3:**

Declaration of track record

To,  
The Chairman,  
Department of Aerospace Engineering  
Indian Institute of Science  
Bangalore 560012, India.  
Kind attention: Prof. Rajesh Chaunsali

Ref: Tender No:

Dated:

Sub: Supply and installation of single-point non-contact Laser Doppler Vibrometer (LDV).

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm is not currently debarred / blacklisted by any Government / Semi-Government organizations / institutions in India or abroad. I further certify that I am competent officer in my company / firm to make this declaration.

OR

I declare the following:

Sr. No	Country in which the company is debarred/ blacklisted / having pending case	Blacklisted / debarred by Government / Semi Government Organizations or Institutions / having pending case	Reason	Time Period

(Note: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

(Signature of the Bidder)

Name:

Date:

Designation, Seal

**Annexure 4:**

Declaration of acceptance of terms and conditions

To,  
The Chairman,  
Department of Aerospace Engineering  
Indian Institute of Science  
Bangalore 560012, India.  
Kind attention: Prof. Rajesh Chaunsali

Ref: Tender No:

Dated:

Sub: Supply and installation of single-point non-contact Laser Doppler Vibrometer (LDV).

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

(Signature of the Bidder)

Name:

Designation, Seal

Date: