

Ref. No.: IISc/ICER/Tender/2022-23/Global/01
Date: April 04, 2022

**Tender Notification for the Procurement for Two Component Laser Doppler
Velocimeter (LDV) system
(Last Date for Submission: May 20, 2022)
GTE Approval No.: IISc-GTE-2021-083**

This is a Request for Quote (RFQ) for the procurement of Two Component Laser Doppler Velocimeter (LDV) system for the Department of Interdisciplinary Centre for Energy Research at the Indian Institute of Science (IISc), Bangalore. 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 May 20, 2022. The bids should be addressed to:

**The Chairman,
Department of Interdisciplinary Centre
for Energy Research
Indian Institute of Science
Bangalore 560012, India.
Kind attention: Prof. Pradip Dutta
Email: pradip@iisc.ac.in**

1	Section 1	Bid Schedule	As specified by IISc
2	Section 2	Eligibility Criteria	As specified by IISc
3	Section 3	Specifications	Technical specifications
4	Section 4	Terms and Conditions	As specified by IISc
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			Annexure 4: Declaration of acceptance of Terms and conditions
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Section 1: Bid Schedule

1.	Tender No.	IISc/ICER/Tender/2022-23/Global/01
2.	Tender date	April 04, 2022
3.	Instrument	Laser Doppler Velocimeter (LDV)
4.	Tender type	i) Technical bid (Part A) ii) Commercial bid (Part B)
5.	Place of tender submission	The Chairman, Department of Interdisciplinary Centre for Energy Research Indian Institute of Science Bangalore 560012, India. Kind attention: Prof. Pradip Dutta
6.	Last date and time of tender submission	May 20, 2022, 5:00 pm (IST)
7.	For Further clarification	Pradip Dutta Professor Department of Interdisciplinary Centre for Energy Research Indian Institute of Science, Bengaluru 560012, India Email: pradip@iisc.ac.in

Section 2: Eligibility Criteria

Prequalification criteria:

1. Warranty period: 2 years. Free Support & Training.
2. Supplier Credibility:
 - a. The Bidder/Vendor Must have supplied minimum 3 LDV systems to reputed Government Organizations in INDIA in the past 5 years. Copies of Purchase Orders to be enclosed along with the Technical Bid as proof.
 - b. Supplier should compulsorily indicate details of facilities / expertise/ qualification of support staff in India. Factory trained engineer/s should be available in India for complete product support
 - c. Please enclose User list in INDIA.
 - d. Minimum 3 Reference letters of similar system supplied in INDIA need to be submitted for further consideration.
3. Publications:
 - a. As our Research Work is of critical nature, Vendors need to enclose reference publications/application note on the usage of LDV systems with Fiber Optic Probes to show expertise of the product being offered.
 - b. As a scope of future work, we intend to use planar measurements on the same set-up. Vendors can provide reference publications of using LDV and Planar measurement techniques (from same OEM).
4. Institute reserves the right for final selection of items.
5. Vendors may quote for any other items/accessories separately as "Optional Items".

Section 3: Technical specifications for “Two Component Laser Doppler Velocimeter (LDV) system”

Mandatory Specifications:

<i>Sl. No.</i>	<i>Item</i>	<i>Specifications</i>	<i>Quantity</i>
1.	Laser cum Transceiver Module	<ul style="list-style-type: none"> • Diode Pumped Solid State (DPSS) laser. • 532 nm wavelength with 500 mW (or better) Power • 561 nm wavelength with 500 mW (or better) Power • Provision for varying DPSS laser power (Software controlled) • Provision for attaching Fiber Optic Probe and Connecting Accessories. 	1
2	Fiber Optic Probe and Accessories compatible to item 1.	<ul style="list-style-type: none"> • Less than 15 mm diameter, for two component Fiberoptic Transceiver probe for 532 and 561 nm (compatible to the above Laser Module), 6-10 mm clear aperture, 60-100 mm focal length lens, 8 m long Fiberoptic cable 	1
		<ul style="list-style-type: none"> • Quad Coupler Adaptor Plate for attachment to Laser Module 	1
		<ul style="list-style-type: none"> • Couplers for transmission of Laser Beams from Laser Module to Fiber Optic Probe 	4
3.	Frequency Signal Processor with Integrated Photo Detector Optics	<ul style="list-style-type: none"> • Minimum No of Channels: 2 expandable to 4. • Suitable for measurement of 2/3 components of Velocity • Doppler Frequency: 0.3 kHz to 125 MHz • Data Rate: Up to 4 MHz (or better) per channel; 300 kHz (or better) sustained • Minimum Time between Burst: 60 ns (or lower) • Downmix Frequency: 0.5 to 50 MHz (or better) • Calibration Diode Laser: 635 nm • Communication and Data Transfer: USB/FireWire • Photo Detector Optics, Electronics and Color Bar included 	1
4.	Software	<ul style="list-style-type: none"> • Data acquisition, analysis, and display software compatible with Win-10, 64-bit computer • Capable of handling velocity data in two/three dimensions. • True plug-and-play capability with auto recognition of system components (Signal Processor, Laser, etc.) 	1

		<ul style="list-style-type: none"> • USB/FireWire communication and data transfer interface • Intuitive User interface for easy navigation of the software to be included with following features: <ul style="list-style-type: none"> ➤ Intensity validation for phase and frequency measurements ➤ Customized, user-defined graphs and statistics ➤ Project oriented data management, Simple file management process for multiple projects and runs ➤ Selection of key parameters for data analysis ➤ Streamlined data capture with easy to follow workflow ➤ Graphical Workflow for representation of acquisition and processing flow ➤ Publication of results: Customized data export, user-defined graphs and statistics ➤ Real-time history and histogram display, Playback of stored data records 	
5.	Accessories and Alignment Kit	<ul style="list-style-type: none"> • Accessory kit for the DPSS modules, including the <ul style="list-style-type: none"> ➤ Laser safety goggles – 2nos ➤ Alignment blocks- 2 no's ➤ 40x microscope objective Lens- 1 no ➤ Polarization Axis Finder- 1 no. ➤ Interlock bypass, assembly – 1 set ➤ Ball drivers/tools. – 1 set 	1

Section 4: 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 Interdisciplinary Centre for Energy Research, Indian Institute of Science Bangalore 560012, India. Kind attention: Prof. Pradip Dutta**, 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 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.
6. 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.
7. 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.
8. 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.
9. Wherever requested, data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.
10. 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.
11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. The indenter reserves the right to relax any or all the above conditions without assigning any reason.

19. If the vendor has agreed to the technical specifications, but has offered a product that does not meet the requirements in the technical specifications, repercussions of such offers are, they are considered as not meeting the tender conditions and are liable to be summarily rejected. No deviation with respect to specifications is acceptable.

Section 5: Technical Bid

Annexure 1:

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

Sr. No.	Type	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:
Designation, Seal

Date:

Annexure 2:

Declaration regarding experience

To,

The Chairman,
Department of Interdisciplinary Centre
for Energy Research
Indian Institute of Science
Bangalore 560012, India
Kind attention: Prof. Pradip Dutta

Ref. Tender No.:

Dated:

Sub: Supply of Two Component Laser Doppler Velocimeter (LDV) system

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 Two Component Laser Doppler Velocimeter (LDV) system

(Signature of the Bidder)

Name:

Designation, Seal

Date:

Annexure 3:

Declaration of track record

To,
The Chairman,
Department of Interdisciplinary Centre
for Energy Research
Indian Institute of Science
Bangalore 560012, India
Kind attention: Prof. Pradip Dutta

Ref. Tender No:

Dated:

Sub: Supply of Two Component Laser Doppler Velocimeter (LDV) system

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 for the same).

(Signature of the Bidder)

Name:

Designation, Seal

Date:

Annexure 4:

Declaration of acceptance of terms and conditions

To,
The Chairman,
Department of Interdisciplinary Centre
for Energy Research
Indian Institute of Science
Bangalore 560012, India
Kind attention: Prof. Pradip Dutta

Ref. Tender No:

Dated:

Sub: Supply of Two Component Laser Doppler Velocimeter (LDV) system

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:

Annexure 5:

Details of items quoted:

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks, if applicable

Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

Section 6: Commercial Bid

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.

SL. No	Description	Cat. Number	Unit Price	Quantity	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.

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

Checklist:

The following items must be checked before the bid is submitted.

1. Sealed Envelope “A”: Technical Bid

Technical bid (signed by the authorized signatory and sealed) with the below documents:

- a. Annexure 1: Bidders details
- b. Annexure 2: Declaration regarding experience
- c. Annexure 3: Declaration of track record
- d. Annexure 4: Declaration of acceptance of terms and conditions
- e. Annexure 5: Details of item quoted
- f. A list of LDVs supplied to the organizations in India, the contact details, and user testimonials as per item 5 of Terms and Conditions.
- g. Authorization certificate from the OEM

2. Sealed Envelope “B”: 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:

Pradip Dutta, Professor
Department of Interdisciplinary
Centre for Energy Research
Indian Institute of Science,
Bengaluru 560 012, India
Email: pradip@iisc.ac.in

Compliance Certificate

Sl. No.	Item	Specifications	Comply	Non-comply	Deviation	Remark
1.	Laser cum Transceiver Module	<ul style="list-style-type: none"> • Diode Pumped Solid State (DPSS) laser. • 532 nm wavelength with 500 mW (or better) Power • 561 nm wavelength with 500 mW (or better) Power • Provision for varying DPSS laser power (Software controlled) • Provision for attaching Fiber Optic Probe and Connecting Accessories. 				
2	Fiber Optic Probe and Accessories compatible to item 1.	<ul style="list-style-type: none"> • Less than 15 mm diameter, for two component Fiberoptic Transceiver probe for 532 and 561 nm (compatible to the above Laser Module), 6-10 mm clear aperture, 60-100 mm focal length lens, 8 m long Fiberoptic cable 				
		<ul style="list-style-type: none"> • Quad Coupler Adaptor Plate for attachment to Laser Module 				
		<ul style="list-style-type: none"> • Couplers for transmission of Laser Beams from Laser Module to Fiber Optic Probe 				
3.	Frequency Signal Processor with Integrated Photo Detector Optics	<ul style="list-style-type: none"> • Minimum No of Channels: 2 expandable to 4. • Suitable for measurement of 2/3 components of Velocity • Doppler Frequency: 0.3 kHz to 125 MHz • Data Rate: Up to 4 MHz (or better) per channel; 300 kHz (or better) sustained • Minimum Time between Burst: 60 ns (or lower) • Downmix Frequency: 0.5 to 50 MHz (or better) • Calibration Diode Laser: 635 nm • Communication and Data Transfer: USB/FireWire • Photo Detector Optics, Electronics and Color Bar included 				
4.	Software	<ul style="list-style-type: none"> • Data acquisition, analysis, and display software compatible with Win-10, 64-bit computer • Capable of handling velocity data in two/three dimensions. 				

		<ul style="list-style-type: none"> • True plug-and-play capability with auto recognition of system components (Signal Processor, Laser, etc.) • USB/FireWire communication and data transfer interface • Intuitive User interface for easy navigation of the software to be included with following features: <ul style="list-style-type: none"> ➤ Intensity validation for phase and frequency measurements ➤ Customized, user-defined graphs and statistics ➤ Project oriented data management, Simple file management process for multiple projects and runs ➤ Selection of key parameters for data analysis ➤ Streamlined data capture with easy to follow workflow ➤ Graphical Workflow for representation of acquisition and processing flow ➤ Publication of results: Customized data export, user-defined graphs and statistics • Real-time history and histogram display, Playback of stored data records 				
5.	Accessories and Alignment Kit	<ul style="list-style-type: none"> • Accessory kit for the DPSS modules, including the <ul style="list-style-type: none"> ➤ Laser safety goggles – 2nos ➤ Alignment blocks- 2 no's ➤ 40x microscope objective Lens- 1 no ➤ Polarization Axis Finder- 1 no. ➤ Interlock bypass, assembly – 1 set ➤ ball drivers/tools. – 1 set 				