Interdisciplinary Centre of Energy Research (ICER)
Indian Institute of Science (IISc), Bangalore, INDIA

Local Tender Notice

Tender Notification Ref No.: ICER/ENQ/TNDR/PD/21-22/03 Date: 09th June 2021

The *Interdisciplinary Centre of Energy Research (ICER)*, Indian Institute of Science Bangalore, invites tenders for supply of "**Two Component Laser Doppler Velocimeter (LDV) system**". This Invitation for Bids is open to all domestic (India based) manufacturers, Indian OEM or its authorized Indian distributors only.

The scope of bid includes Supply, installation and configuration of **"Two Component Laser Doppler Velocimeter (LDV) system"**

Tender Summary

1.	Tender Number	ICER/ENQ/TNDR/PD/21-22/03
2.	Tender Date	**09th June 2021**
3.	Item Description	Two Component Laser Doppler Velocimeter (LDV) system
4.	Tender Type	Two bid system : (a) Technical Bid (Part A) (b) Commercial Bid (Part B)
5.	Place of tender submission	Prof. Pradip Dutta Interdisciplinary Centre for Energy Research, Indian Institute of Sciences, Bengaluru 560012
6.	Last Date & Time for submission of tender	24th June 2021, 5:00 PM

To whom it may concern

This is a **Request for quote (RFQ)** from **Indian Agencies** for supply and installation of **"Two Component Laser Doppler Velocimeter (LDV) system"** at the **"Interdisciplinary Centre of Energy Research (ICER), Indian Institute of Science, Bangalore.**

This Invitation for Bids is open to only domestic (India based) manufacturers, Indian OEM or its authorized Indian distributors. All interested vendors shall submit a response demonstrating their capabilities to produce the requested equipment to the primary point of contact listed below.

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. As per the order the government has defined a 'Class-I local supplier' as "a

supplier or service provider whose goods, services or work offered for procurement, has local content equal to or more than 50%". A 'Class-II local supplier' is "a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%". **Only Class-I and Class-II local suppliers are eligible to participate** in this open domestic tender. Any "Non-local supplier" i.e. "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.

The deadline for submission of proposals is **24th June 2021 by 5:00 PM.** Proposals should arrive at the office of **The Chairman, Interdisciplinary Centre of Energy Research (ICER), Indian Institute of Science, Bangalore, Karnataka 560012, India.**

Direct all questions concerning the acquisition to addresses to **Prof. Pradip Dutta** at: pradip@iisc.ac.in

General Terms and Conditions

1. The bid should be submitted in the two-cover system, i.e. technical bid and commercial bid separately in sealed covers. The technical bid should contain all commercial terms and conditions, except the price.
2. The technical bid must contain a point-by-point technical compliance document. The technical proposal should contain a compliance table that should describe your compliance in a "yes" or "no" response against each of the items in the table listed in this RFQ. If "no" the second column should state, the extent of deviation. The third column should state the reason for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirement table below.
3. In the commercial bid, the price should be inclusive of all discounts.
4. The quotations should be on FOR-IISc Bangalore basis in INR only. Since IISc is DSIR registered organization, hence it is eligible for GST rate @5% as the equipment is required for research purposes only.
5. The vendor should have qualified technical service personnel for the equipment based in India (preferably in Bangalore).
6. 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.
7. The vendor to state the percentage of the local content and provide self-certification that the item offered meets the minimum local content requirement. They should also give details of the location(s) at which the local value addition is made.
8. The lead time for the delivery of the equipment should not be more than 3 months from the date of receipt of our purchase order. It should be clearly mentioned in the technical and commercial bids.
9. All the quotations must be valid for at least 90 days at the time of submission.
10. List of customers and references: **The Bidder should have supplied similar equipment in Central Universities, preferably in centrally Funded Technical Institutes (IITs, IISC, IISER, NIT). Please provide the details and contact information**.
11. 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.

12. Items in addition to that listed in the technical table that you would like to bring to the attention of the committee, such as data sheets, technical plots etc. can be listed at the end of the compliance table.
13. Vendors are encouraged to highlight the advantage of their LDV systems over comparable LDV systems from the competitors.
14. If needed, a meeting for any technical clarifications can be scheduled with the undersigned by sending an email.
15. The Institute reserves the right to accept or reject any bid, or to annul the bidding process and reject all bids, at any time prior to the award of contract without thereby incurring any liability of the affected bidder or bidders.
16. Warranty terms and additional warranty options is a must for all the components. Please specify the service plan like whether the local distributor will address the issue or the parent company.
17. Terms and conditions for the annual maintenance contract beyond the warranty period should be mentioned.
18. After the award of purchase order, the vendor must provide an Order Acknowledgement within 30 days from the receipt of the Purchase Order.
19. Please quote the price of each optional line item, separately.

Technical requirements: 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.

Sl. No.	***Item***	***Specifications***	***Quantity***
1.	Laser cum Transceiver Module	• 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)	1
2.	Fiber Optic Probe and Accessories	• 15 mm diameter, two component Fiberoptic Transceiver probe for 532 and 561 nm (compatible to the above Laser Module), 10 mm clear aperture, 60 mm focal length lens, 8 m long Fiberoptic cable	1
		• Quad Coupler Adaptor Plate for attachment to Laser Module	1
		• Couplers for transmission of Laser Beams from Laser Module to Fiber Optic Probe	4
3.	Photo Detector Module	Two channel External photo detector module as per the two laser wavelengths (532 nm & 561 nm) for velocity. • Bandwidth: 0 to 300 MHz • High Pass Filters: 5 MHz or higher	1
4.	Frequency Signal	Multibit Digital Burst frequency signal analyser for Two	1

	Processor	channel velocity. • Doppler Frequency: 175 MHz or better • Minimum Transit Time: 50 ns or better • Sampling Rate: 800 MHz or better • Provision for software selectable high pass filters • Provision for external synchronizer input • Combined FFT and correlation plus burst centring and dynamic sampling rate selection	
5.	Software	Software for LDV data acquisition, analysis and presentation with the following capabilities – 1) Data acquisition, analysis, and display software with lifetime updates compatible with Win-10, 64 bit computer 2) Capable of handling velocity data in two dimensions and provision to upgrade the feature to handling velocity data in all three dimensions in future 3) True plug-and-play capability with auto recognition of system components 4) IEEE 1394 (FireWire) communication and data transfer interface 5) Burst monitor for viewing incoming and validated bursts 6) Intensity validation for phase and frequency measurements 7) PMT voltage control and automatic saturation monitoring 8) Scalable real-time data display windows for each velocity component and auxiliary inputs 9) Full control over all system parameters (PMT voltages, processor filter settings, frequency shift, traverse matrix, high pass filters, etc.) 10) Customized, user-defined graphs and statistics 11) Project oriented data management 12) Detailed statistical analysis (mean velocity, turbulence intensity, Reynolds stresses, power spectra etc.) 13) On-line power spectrum calculations 14) Customized data export, Excel and Tecplot format 15) Real-time history and histogram display 16) Playback of stored data records	1
6.	Accessories and Alignment Kit	• Accessory kit for the DPSS modules, including the laser safety goggle, alignment blocks, 40x microscope objective lens, Polarization Axis Finder, interlock bypass, assembly and a set of	1

		ball drivers/tools.	

Terms and Conditions

1. Warranty period: 1 year.
2. Supplier Credibility:
    a. The Bidder/Vendor Must have supplied minimum 3 LDV systems to reputed Government Organizations in INDIA in the past 3 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”.

Prof.Pradip Dutta
Interdisciplinary Centre for Energy Research (ICER)
Indian Institute of Science,
Bangalore, Karnataka 560012
pradip@iisc.ac.in
09th June 2021

Annexure-I

Note: Compliance Certificate must be enclosed with the Technical bid. Non submission of Compliance Certificate will lead to disqualification of the bidder.

Sl No.	Description	Value / Range	Comply	Non-comply	Deviation	Remarks
1.	Laser cum Transceiver Module	a) 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)				
1.2	Fiber Optic Probe and Accessories	a) 15 mm diameter, two component Fiberoptic Transceiver probe for 532 and 561 nm (compatible to the above Laser Module), 10 mm clear aperture, 60 mm focal length lens, 8 m long Fiberoptic cable b) Quad Coupler Adaptor Plate for attachment to Laser Module c) Couplers for transmission of Laser Beams from Laser Module to Fiber Optic Probe				
1.3	Photo Detector Module	Two channel External photo detector module as per the two laser wavelengths (532 nm & 561 nm) for velocity. - Bandwidth: 0 to 300 MHz - High Pass Filters: 5 MHz or higher				

1.4	Frequency Signal Processor	Multibit Digital Burst frequency signal analyser for Two channel velocity. -Doppler Frequency: 175 MHz or better -Minimum Transit Time: 50 ns or better -Sampling Rate: 800 MHz or better -Provision for software selectable high pass filters -Provision for external synchronizer input -Combined FFT and correlation plus burst centring and dynamic sampling rate selection				
1.5	Software	Software for LDV data acquisition, analysis and presentation with the following capabilities – -Data acquisition, analysis, and display software with lifetime updates compatible with Win-10, 64 bit computer -Capable of handling velocity data in two dimensions and provision to upgrade the feature to handling velocity data in all three dimensions in future -True plug-and-play capability with auto recognition of system components -IEEE 1394 (FireWire) communication and data transfer interface -Burst monitor for viewing incoming and validated bursts -Intensity validation for phase and frequency measurements -PMT voltage control and automatic saturation monitoring				

		-Scalable real-time data display windows for each velocity component and auxiliary inputs -Full control over all system parameters (PMT voltages, processor filter settings, frequency shift, traverse matrix, high pass filters, etc.) -Customized, user-defined graphs and statistics -Project oriented data management -Detailed statistical analysis (mean velocity, turbulence intensity, Reynolds stresses, power spectra etc.) -On-line power spectrum calculations -Customized data export, Excel and Tecplot format -Real-time history and histogram display -Playback of stored data records				
1.6	Accessories and Alignment Kit	Accessory kit for the DPSS modules, including the laser safety goggle, alignment blocks, 40x microscope objective lens, Polarization Axis Finder, interlock bypass, assembly and a set of ball drivers/tools.				

Annexure-II

M AN UFAC T UR E R S' AU T H ORI Z AT I ON FORM

[The bidder shall require the manufacturer to fill in this form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the Manufacturer.]

Date: [insert date (as day, month and year) of Bid

Submission] Tender No.: [insert number from Invitation

for Bids]

To: **The Chairman, Interdisciplinary Centre of Energy Research (ICER), IISc, Bangalore-560012**

WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert full address of Manufacturer's factories], do herby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty with respect to the Goods offered by the above firm.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Duly authorized to sign this authorization on behalf of: [insert complete name of Bidder]