
	सामग्री प्रबंधन अनुभाग भारतीय प्रौद्योगिकी संस्थान, रूडकी रूडकी-247667, हरिद्वार, उत्तराखण्ड, भारत Phone-(O) 01332-28-4293, 4693 E-mail: mmiitr@iitr.ac.in	Material Management Section Indian Institute of Technology Roorkee-247667(Haridwar) (Uttarakhand) (India) Phone-(O) 01332-28-4293, 4693 E-mail: mmiitr@iitr.ac.in	
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	PAN-AAALI0033R		

निविदा प्रलेख / Tender Document

No. 2024250002/MM-7/IITR/2024-25/2D-PARTICLE IMAGE VELOCIM/HRED/2

Date of Uploading of Tender -<https://eprocure.gov.in/eprocure/app>

9-Apr-2024

Bids under two bid systems (Technical and Commercial) are invited Online at CPP Portal (<https://eprocure.gov.in/eprocure/app>) from the reputed manufacturer/authorized supplier/dealer for the following items. **Manual bids will not be accepted.**

वस्तु की तकनीकी विशिष्टताएँ / Technical Specifications of item:

Sr. No	Name of item / Specifications	QTY	UOM
1	2D-PARTICLE IMAGE VELOCIMETERY (PIV)	1	Set
(For Detailed Technical Specification Plz refer Annexure-V)			
नोट-1: कृपया वस्तु का मूल्य एवं कर अलग-अलग दर्शाए।			
Note-1: Please quote the Rate & Taxes of the item separately.			
Note-2: E-way bill is to be issued by the Venders/Transporter			
Note-3: The HSN / SAC Code of the item must be mentioned.			
For Reasonability of Rates, The firm must enclose the last two supply orders for the same item with Financial Bid (Annexure-III) only.			
Critical Date Sheet			
1	Published Date	9-Apr-2024	(18:00)
2	Bid Document Download / Sale Start Date	9-Apr-2024	(18:20)
3	Seek Clarification Start Date	9-Apr-2024	(18:30)
4	Seek Clarification End Date	15-Apr-2024	(16:00)
5	Pre Bid Meeting Date	Not Required	Not Required
6	Bid Submission Start Date	17-Apr-2024	(15:00)
7	Bid Submission End Date	30-Apr-2024	(15:00)
8	Bid Opening Date	30-Apr-2024	(15:30)

Chapter-1 : Instruction to bidders

- A. The Tender should be enclosed with proper certifications like Agency Certification, Authorization certificate and/or Proprietary Certificate, as the case may be, in support of your offer.
- B. बोली का जमा किया जाना / Submission of Bids:

The bids should be submitted online in two parts –

 - 1 (i) The Technical Bid (Annexure-I, II, IV & V) with EMD and Tender Acceptance Letter
(ii) The Financial Bid (Annexure-III) & Price Bid in .XLS Format
Rates in .xls format will only be considered for Financial evaluation & further processing.
 - 2 The bids should be on official pad preferably with GST Number of the firm

- 3 The quotations should bear full details and where possible may be duly supported with catalogues, pamphlets, literature, samples of the item/items as the case may be for comparing the quality and rates of the item(s).
- 4 The transportation cost, insurance charge etc., if any, percentage/ rate of GST or all other taxes and duties should be clearly mentioned.
- 5 The bids / rates / tenders should remain valid for a minimum period of 90 days from the date of financial opening.
- 6 The rates shall not be subject to escalation of any nature.
- 7 The rates quoted should be applicable to educational institutions and any cost advantage received in lieu thereof should be passed on the Institution.
- 8 While quoting / sending rates, the firm shall give an undertaking as per Annexure-II.

C. विधि निक्षेप/ Earnest Money Deposit (EMD):

The Technical Bid should accompany an EMD of value Rs. 1,80,000/- (Rupees One Lac Eighty Thousand only) which should be deposited online into below mentioned account.

Details of IIT Roorkee Bank Account:

Account Name: NON MHRD GOVERNMENT FUND IIT ROORKEE

Account No.: 00000032685865515

Bank Name: STATE BANK OF INDIA

Branch Address: IIT ROORKEE, ROORKEE

IFSC Code: SBIN0001069

MICR: 247002094

The Bidder will have to fill EMD details & provide the tender reference number in the narration/remarks while doing the payment as per quoted items and share the receipt of the same in pdf on CPP Portal (<https://eprocure.gov.in/eprocure/app>). The qualification in Technical bid will be subject to the submission of EMD in above mentioned account within schedule date and time as mentioned in the NIT. IITR shall not be responsible for any delay in submission of EMD.

In case the EMD is not received in above mentioned account within the aforesaid period, the bid will be out rightly rejected.

Exemption on submission of EMD will be given against valid MSME/NSIC certificate under goods (manufacturing) category.

The earnest money shall be refunded to all the unsuccessful firms, without any interest after finalization of the contract. EMD shall be refunded to the successful firms on receipt of PBG/Security Deposit. No interest is payable on the EMD to either the successful firms or the unsuccessful firms.

D. निष्पादन बैंक प्रत्याभूति/ Performance Bank Guarantee (PBG):

In case the total order value of items becomes Rs.25.00 Lakhs or above, 5% of the total order value in the form of Bank Guarantee or FDR pledged in favor of "The Registrar, IIT Roorkee" is required at the time of installation of the equipment which should remain valid at least during the warranty period plus sixty days. No interest shall be claimed by the bidder on the PBG submitted.

E. बोलियों का खोला जाना/ Opening of Bids:

- 1 The Technical Bids will be opened online at CPPP Portal (<https://eprocure.gov.in/eprocure/app>)-**Plz refer Critical Date Sheet**
- 2 The Financial bids of only the Technically Qualified bidders will be opened. The date and time for opening the Financial Bid will be communicated to the respective firm later by the system (CPP Portal (<https://eprocure.gov.in/eprocure/app>))
- 3 Representatives of the firms(s) may be present at the time of openings, if they so desire.

Chapter-2 : Conditions of Contract

F. ठेका देना/ Award of Contract:

The final selection of the bidder for the award of the contract will be made on the basis of the lowest commercial bid amongst the Technically Qualified Bidders.

Prices of optional item will not be considered to identify lowest price bid.

G. पूर्व-आपूर्ति निरीक्षण/ Pre-supply Inspection:

Authorized representative of the Institute shall make the final inspection before supply of the item at site of the firm, if required.

H. वस्तु की आपूर्ति/ Supply of Item:

The whole supply as per order shall have to be completed within the time mentioned in the order failing which the I.I.T. Roorkee shall have the right to accept or reject any quantity of items ordered. The firm will have to arrange for supply of the material in good condition.

I. भुगतान की शर्तें / Payment Terms:

A. Payment in INR for supply of goods:

Where installation is not required: 100% payment will be made after satisfactory delivery of material duly certified by the HOD/P.I. **OR**

Where Installation is required :100% payment will be made after satisfactory delivery and installation of the material duly certified by the HOD/P.I. **OR**

80% payment will be made on receipt and acceptance of goods and balance 20% on successful installation and commissioning duly certified by the HOD/P.I.

B. Payment in INR for AMC/Service:

Quarterly/Halfyearly after satisfactory completion of work/service duly certified by the H.O.D./P.I.

J. दंड/Penalty:

A penalty of 0.5% of the total order value per week shall be levied for the delay subject to a maximum of 5% of the total order value.

In case of the non-supply of the item/service after the acceptance of the work/supply order, EMD & PBG (if submitted) will be forfeited by the Institute. Also, the firm will be debarred from any future bidding process of IIT Roorkee for a period of a minimum two year.

K. अप्रत्याशित घटना/Force Majeure:

For the purpose of and within the scope of contract by way of indication and not of limitation, the term "Force Majeure" shall mean acts of nature, strikes, Lockouts, or other industrial disturbances, act of public/enemy, wars, blockades, insurrection, riots, epidemics, landslides, earthquakes, storms lightening, flood, washouts, civil disturbances, explosion and any other similar even not within the control of either party on which by exercise of due care and diligence neither party is able to prevent or overcome.

L. मध्यस्थता / Arbitration:

If any dispute which may arise with respect to any term and condition or with respect to the interpretation of any term and condition of the Purchase Order/Work Order, which may be issued to the qualified and successful tenderer subsequently, the same shall be settled strictly in accordance with and in compliance of the Arbitration procedure which is mentioned descriptively in the Purchase Order/ Work Order.

M. बोली अस्वीकृती के लिए मानदंड / Criteria for bid rejection:

1 If technical bid found without the required undertaking (Annexure-II), EMD & Self Certificate (Annexure-IV)

2 If it found at a later date that any information given in the bids is Incorrect/false then the bid is liable to be disqualified/rejected.

3 Canvassing in any form will result to disqualification.

4 If "extra, as actual" etc. are mentioned against any of the price components in the bid the bid will be rejected.

5 If the firm quotes 'NIL' charges / consideration, the bid shall be treated as unresponsive and will not be considered.

6 If financial bid is found along with technical bid in pdf on CPP Portal, then the bid shall be rejected outrightly.

7 If any bidder submitting two/multiple bids for the same item of a tender, both/all the bids of that bidder will be outrightly rejected.

Chapter-3 : Schedules of requirements

N. टिप्पणी / Note:

1 If the supplier/firm is manufacturer/authorized dealer/sole distributor/of the item, the certificate to this effect should be attached.

2 Please note that the firms must submit the compliance Statement in an organized and structured manner in respect of all the specifications as per Annexure-V with the supporting catalogue/leaflet of the firm. Annexure-I, II, & IV have to be submitted with Technical Bid and Annexure-III with financial bid.

3 It may also be noted that the tender bids received after the stipulated date & time or found incomplete and the tender bids containing false/incorrect information shall be summarily rejected. The Institute shall not entertain any communication in this regard, whatsoever.

4 The firm is required to give its Bank Account details with IFSC for the purpose of making e-payment.

5 The Indian Institute of Technology (IIT) Roorkee reserves the right to reject any quotation wholly or partly without assigning any reason.

6 The quantity shown in the tender can be increased or decreased to any extent depending upon the actual requirement.

- 7 The decision of the institute in all matters relating to eligibility, acceptance, rejection of the bid will be final and binding on the applicants.
- 8 IIT Roorkee discourages High Sea Sale purchase. All tenders with High Sea Sale will be rejected.
- 9 The firms should clearly mention (in the financial bid) the Harmonized System of Classification (HS code) defined by the Central Custom and Excise Board (Govt. of India)- for the item(s) involving import.
- 10 **If the bid opening date happens to be a holiday, then the bid will be opened at 3.30PM of the next working day followed by the holiday.**
- 11 If an agent submits bid on behalf of the Principal/OEM, the same agent can not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.
- 12 Indian Agent should submit the certificate from the Foreign Principal that they are the Authorized & Registered Indian Agent.
- 13 The quantity shown against the item is approximate and may vary as per demand of the Institute at the time of placing order. Also, the final requirement of each line item will be decided by the Institute at the time of placing the PO.
- 14 **Any corrigendum/addendum/errata in respect of the Tender Notice/ Enquiry letter shall be made available CPP Portal (<https://eprocure.gov.in/eprocure/app>). Hence prospective bidders are advised to visit the CPP Portal (<https://eprocure.gov.in/eprocure/app>) regularly.**
- 15 Bidders shall be responsible for the correctness of the information provided in the enquiry letter/tender document. If it is found at a later date that any information given in the bid is Incorrect/false then the bid is liable to be disqualified/rejected.
- 16 Before submission of bids, bidders should read the complete enquiry letter/tender document carefully and ensure that the bidders fulfill the eligibility criteria.
- 17 In case the item/product is under rate contract with DGS&D or GeM, then Bidder should certify that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.
- 18 **In Item Wise BoQ .xls sheet, In column M, leave blank for the item/service not provided/quoted by you. If quoted 0 then it will be considered that the item/service will be provided free of cost.**
- Or**
- 18 **In Item Rate BoQ .xls sheet, If quoted 0 for the items/services in column M then it will be considered that the items/services will be provided free of cost.**
- 19 **The bidder must quote the applicable GST appropriately in the price bid format provided i.e BoQ in .xls format. In case column of GST left blank, quoted 0, or inappropriate, then total quoted amount shows in column BB would be final inclusive of GST & other charges. The difference in GST amount payable – if any will be borne by the bidder. In this case, the basic unit prices will be suitably adjusted by the bidder – if required.**
- 20 **Only 'Class-I local supplier' and 'Class-II local supplier', as defined in the Public Procurement (Preference to Make in India), Order 2017 shall be eligible to bid in tender. For more details please refer: Order No.: P-45021/2/2017-PP (BE-II), DPIIT, Ministry of Commerce and Industry issued Dated: 16th Sept. 2020.**
- Self-certificate has to be provided in this regard that the item offered meets the local content requirement for 'Class-I local supplier' & 'Class-II local supplier'. (As per annexure-IV)**
- 21 **The Institute reserves the right to rectify any discrepancy of this advertisement, if found later on. In case of any inadvertent mistake in the process which may be detected at any stage even after the issue of purchase order, the Institute reserves the right to modify/withdraw/cancel any communication made to the bidder.**

Chapter-4 : Specifications and allied Technical details

Plz. See Annexure- I, II, IV, V

Chapter-5 : Price Schedule (to be utilized by the bidders for quoting their prices online in .XLS format at CPPP Portal (<https://eprocure.gov.in/eprocure/app>))

Plz. See Annexure- III & Price Bid in .XLS Format

Chapter-6 : Contract Form

Purchase Order is used as Contract Form

Chapter-7 : Other Standard Forms, if any to be utilized by the purchaser and bidders

Tender Acceptance Letter

*उप कुलसचिव (सामग्री प्रबंधन) / सहायक कुलसचिव (सामग्री प्रबंधन)
Deputy Registrar (MM)/ Assistant Registrar (MM)

***Document Digitally Signed on <https://eprocure.gov.in/eprocure/app>**

For any Clarification regarding technical specifications of item Please Contact:

Prof. Arun Kumar,
Department of Hydro and
Renewable Energy,
IIT Roorkee

Department of Hydro
and Renewable
Energy,
IIT Roorkee

Ph. 01332-28-5821
Email: arun.kumar@hre.iitr.ac.in

तकनीकी बोली

विस्तृत विवरण अनुपालन रिपोर्ट के साथ प्रस्तुत किया जाना है (अपने आधिकारिक लेटर हेड पर विक्रेता/फर्म द्वारा प्रस्तुत करने के लिए)

Detailed specification cum compliance report to be submitted with the Technical Bid
(to be submitted by the vendor/firm on its official letter head)

(For Detailed Technical Specification Plz refer Annexure-V)

Sr.No	Name & Required Specifications of Item(s)	Qty	UOM	Offered specifications of item(s) by the firm
1	2D-PARTICLE IMAGE VELOCIMETERY (PIV)	1	Set	
	Firm's Profile :			
1	Manufacturer/Authorized Agent/Distributor/Dealer/Supplier(valid certificate must be attached)			
2	E-mail I.D. & Telephone/Mobile No. Detail of Bank A/C			
Note:	1. "offered specifications", should be filled up properly in the format provided as per Annexure-I.			
	2. Volume & Weight of the item should also be mentioned.			
	3. The HSN / SAC Code of the item must be mentioned.			

Signature: _____

Name : _____

Designation : _____

Seal of the Organisation

उपबंध / UNDERTAKING

Ref. No. No. 2024250002/MM-7/IITR/2024-25/2D-PARTICLE IMAGE VELOCIM/HRED/2
Dated:- 9-Apr-24

I/We hereby certify that we or Our OEM are not from such a country which shares a land border with India or, if from such a country, We are registered with the Competent Authority. [Where applicable, evidence of valid registration by the Competent Authority is attached.]" (For details Please refer Order No.: F.No. 6/18/2019-PPD Dt.: 23rd July 2020)

Link of Order: [http://mm.iitr.ac.in/mmweb/public/forms/63374_GFR%20Rule%20144%20\(xi\).pdf](http://mm.iitr.ac.in/mmweb/public/forms/63374_GFR%20Rule%20144%20(xi).pdf)

That all the terms/conditions mentioned in the enquiry letter/tender against which the rates are being given are acceptable to the firm.

It is certified that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.

It is certified that the firm has never been black-listed from any Government Department. (State/Central Govt./ Autonomous/ PSU) in the last three years.

Signature _____

Name _____

Designation _____

Seal of the Firm/Agency

Financial Bid

(to be submitted by the vendor/firm on its official letter head)

Ref. No. No. 2024250002/MM-7/IITR/2024-25/2D-PARTICLE IMAGE VELOCIM/HRED/2
 Date: 9-Apr-24

Rates :

Sr. No	Name of item / Specifications	Qty	UOM	Rate	Amount (INR Only)
					To be filled in .XLS sheet (attached)
Total					
Grand Total Rs.					

1) Price of the items should be clearly mentioned if supplied Free of Cost.

Terms & Conditions:

- 1 Prices (quoted in Rs.): FOR Department of Hydro and Renewable Energy,
IIT Roorkee
- 2 **Payment:** **Should be clearly mentioned, As per clause-I of tender document.**
- 3 Validity:
- 4 Delivery period:
- 5 Other charges:
- 6 **Warranty:**
- 7 Rejection: Equipment if found not as per the required specification would be rejected.
- 8 Penalty Clause: As per clause-J of tender document.
In case of the non-supply of the item/service after the acceptance of the work/supply order, EMD & PBG (if submitted) will be forfeited by the Institute. Also, the firm will be debarred from any future bidding process of IIT Roorkee for a period of a minimum two year.
- 9 PBG: In case the total order value of items becomes Rs.25.00 Lakhs or above, 5% of the total order value in the form of Bank Guarantee or FDR pledged in favor of "The Registrar, IIT Roorkee" is required at the time of installation of the equipment which should remain valid at least during the warranty period plus sixty days. No interest shall be claimed by the bidder on the PBG submitted.
- 10 **Order to be placed:**
(Name and complete address of the firm to whom Purchase/Work order is to be issued.)

It is certified that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.

Signature _____

Name _____

Designation _____

Seal of the Firm/Organization _____

Details of Institute :

IEC CODE	0100000011	
AD CODE	0001069-2770325	S.B.I., IIT ROORKEE
	0303974-2770324	P.N.B. IIT ROORKEE

(to be submitted by the vendor/firm on its official letter head)

Self-Certificate for Local Content

Tender No.: No. 2024250002/MM-7/IITR/2024-25/2D-PARTICLE IMAGE
VELOCIM/HRED/2

Date: 9-Apr-24

We hereby certify that the items quoted by us against above mentioned tender no. has the local content as per below:

Local Content (in %):.....

Local Supplier Class:.....

The details of the Make in India items/parts used in the quoted products is/are as under:

- 1
- 2
- 3

The details of the location(s) at which the local value addition made/manufactured is/are as under:

- 1
- 2
- 3

We also understand, false declarations will be in breach of the code of integrity under rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.

Signature:

Name:

Designation:

Seal of the Firm/Organization:

Instructions for Online Bid Submission

Instructions to the Bidders to submit the bids online through the Central Public Procurement Portal for e-Procurement at <https://eprocure.gov.in/eprocure/app>. Also, any modification on CPP portal in reference to below will be applicable. Therefore, for more details and update please refer CPP Portal (<https://eprocure.gov.in/eprocure/app>).

- 1 Possession of valid Digital Signature Certificate (DSC) and enrollment/registration of the contractors/bidders on the e-Procurement/e-tender portal are prerequisite for etendering.
- 2 Bidder should register for the enrollment in the e-Procurement site using the "Online Bidder Enrollment" option available on the home page. Portal enrollment is generally free of charge. During enrollment/registration, the bidders should provide only valid and true information including valid email id. All the correspondence shall be made directly with the contractors/bidders through email id as registered.
- 3 Bidder need to login to the site through their user ID/ password chosen during enrollment/registration.
- 4 Then the Digital Signature Certificate (Class III Certificates with signing key usage) issued by SIFY/nCode/eMudra etc. recognized by Controller of Certifying Authorities (CCA) India on eToken/SmartCard, should be registered.
- 5 The registered DSC only should be used by the bidder in the transactions and should ensure safety of the same.
- 6 Contractor/Bidder may go through the tenders published on the site and download the tender documents/ schedules for the tenders.
- 7 After downloading/getting the tender document/schedules, the Bidder should go through them carefully and then submit the documents as required, otherwise bid will be rejected.
- 8 Any clarifications may be sought online through the tender site, through the contact details or during pre-bid meeting if any. Bidder should take into account the corrigendum if any published before submitting the bids online.
- 9 Bidder may log in to the site through the secured login by the user id/ password chosen during enrolment/registration and then by submitting the password of the e-Token/Smartcard to access DSC.
- 10 Bidder may select the tender in which he/she is interested in by using the search option and then move it to the 'my tenders' folder.
- 11 From my tender folder, he may select the tender to view all the details uploaded there.
- 12 It shall be deemed that the bidder has read and understood all the terms and conditions before submitting the offer. Bidder should go through the tender schedules carefully and upload the documents as asked; otherwise, the incomplete bid shall stand rejected.
- 13 Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/ schedule and ordinarily it shall be in PDF/xls/rar/jpg/dwf formats. If there is more than one document, all may be clubbed together and provided in the requested format. Bidders Bid documents may be scanned with 100 dpi with black and white option. It is advisable that each document to be uploaded through online for the tenders should be less than 2 MB. If any document is more than 2MB, it can be reduced through zip/rar and the same if permitted may be uploaded. The file size being less than 1 MB the transaction uploading time will be very fast.
- 14 The Bidders can update well in advance, the documents such as certificates, annual report details etc., under "My Space option" and these can be selected as per tender requirements and then send along with bid documents during bid submission. This will facilitate the bid submission process faster by reducing upload time of bids.
- 15 Bidder should submit the Tender Fee/ EMD as specified in the tender. Scanned copy of the same should be uploaded as part of the offer. (if applicable)
- 16 While submitting the bids online, the bidder shall read the terms and conditions and may accept the same to proceed further to submit the bid packets.
- 17 The bidder has to select the payment option as offline to pay the Tender FEE/ EMD as applicable and enter details of the same. (if applicable)
- 18 The details of the DD/any other accepted instrument, physically delivered, should tally with the details available in the scanned copy and the data entered during bid submission time, otherwise submitted bid shall not be acceptable or liable for rejection. (If applicable)
- 19 The bidder has to digitally sign and upload the required bid documents one by one as indicated. Every act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation that they have read, understood and agreed with all clauses of the bid document including General conditions of contract without any exception.

- 20 The bidder has to upload the relevant files required as indicated in the cover content. In case of any irrelevant files, the bid may be rejected.
- 21 If the price bid format is provided in a spread sheet file like BoQ_XXXX.xls, the rates offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Priced-bid/BOQ template shall not be modified / replaced by the bidder; else the bid submitted is liable to be rejected for the tender.
- 22 The bidders are advised to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission due date and time (as per Server System Clock). The TIA shall not be held responsible for any delay or the difficulties faced during the submission of bids online by the bidders.
- 23 After the bid submission (i.e. after Clicking "Freeze Bid Submission" in the portal), the acknowledgement number indicated by the system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender and also be used as entry pass to participate in the bid opening.
- 24 The time settings fixed in the server side and displayed at the top of the tender site, shall remain valid for all actions of requesting, bid submission, bid opening etc., in the e- Tender system. The bidders should follow such time during bid submission.
- 25 All the data being entered by the bidders would be encrypted using Public Key Infrastructure (PKI) encryption techniques to ensure the secrecy of the data. The data entered is not retrievable by unauthorized persons during the bid submission and until the time of bid opening by any person.
- 26 Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers' public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 27 The confidentiality of the bids is maintained with the use of Secured Socket Layer (SSL) 128 bit encryption technology. Data storage encryption of sensitive fields is done.
- 28 The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) exit option in the browser.
- 29 For any queries regarding e-Tendering process, the bidders may contact at address as provided in the tender document. Parallely for any further queries, the bidders are advised to contact over phone: **0120-4001005** or send an e-mail to – cphp-nic@nic.in.

Prequalification

- 1 An undertaking by the firm that it has never been black-listed in the last three years must be attached along with the Bid, failing which the Bid shall be rejected. (As per Annexure-II)
- 2 True copy of Permanent Account Number.
- 3 Details of GST along with a copy of certificate to be attached.
- 4 Submission of samples if required, for all items indicated in the NIT. The make of items proposed to be supplied should be indicated and submitted along with the techno commercial unpriced bid without indicating the pricing components.
- 5 Willingness to execute all orders which are placed to meet emergency requirement on priority basis. The Bidder shall note that standards for workmanship, material and equipment, and references to brand names designated by the Purchaser in the tender document are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in his bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

Tender Acceptance Letter
(To be given on Company Letter Head)

Date:

Sub: Acceptance of Terms & Conditions of Tender.

Tender No. 2024250002/MM-7/IITR/2024-25/2D-PARTICLE IMAGE VELOCIM/HRED/2

Tender description:

Dear Sir,

- 1 I/We have downloaded/ obtained the tender document(s) for the above mentioned 'Tender No.' from the web site(s) namely:

as per your advertisement, given in the above mentioned website(s).
- 2 I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like section(s), schedules(s) etc.), which form part of the contract agreement and I/we shall abide hereby by the terms/conditions/ clauses contained therein.
- 3 The corrigendum(s) issued from time to time by your department/ organisation too have also been taken into consideration, while submitting this acceptance letter.
- 4 I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s)/ corrigendum(s) in its totality/entirety.
- 5 In case any provisions of this tender are found violated, then your department/organisation shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

TECHNICAL SPECIFICATION OF 2D-PARTICLE IMAGE VELOCIMETERY
(PIV)

Applications: PIV will be utilized for the measurement of velocity vectors, vortex structures, and characterization of wake velocity fields surrounding the hydrokinetic turbine in a confined open channel.

ITEM	SPECIFICATION
Laser	<p>Laser: Laser should be compact monolithic system capable to suffice the Requirement of wide range of PIV applications.</p> <ul style="list-style-type: none"> ◆ Laser type: Nd:YAG double-cavity Laser system ◆ Pulse energy: 2 x 200 mJ or higher @ wavelength 532 nm, (Dual Powered) ◆ Repetition rate per cavity: 15 Hz or more tenable, ◆ Beam diameter: ≤ 7 mm <ul style="list-style-type: none"> ◆ Beam divergence: ≤ 4 mrad ◆ Pulse energy stability: $\leq \pm 2\%$ @ 532 nm ◆ Pulse length at 532 nm: 10 ns or better ◆ Input power: 220 V/50 Hz ◆ Pointing stability: < 70 μrad ◆ Lamp life: 10^7 pulses ◆ Voltage supply: 220 VAC - 250 VAC ◆ Ambient: 18°C - 35°C ◆ Pulse External triggering through TTL pulses. ◆ Should include integrated Power supply unit with air or water cooling.
Sheet Optics , Light Guide Arm & Base	<p>Laser Sheet Optics:</p> <ul style="list-style-type: none"> ◆ Suitable light sheet optics for 2D for the field of view of $0.4\text{m} \times 0.4\text{m}$. ◆ Shall allow to focus the laser light sheet for 200mm to 4000mm. ◆ Dedicated entrance module that conditions the beam of different lasers (e.g. the offered one) so they appear to have the same. characteristics to subsequent optical elements. ◆ Combinable divergence lenses that can produce at least 3 different divergence angle in a given fluid medium. ◆ Light sheet base allowing to mount the light sheet optics to light guide arm or directly onto a laser. ◆ Focal length: Spherical lenses with variable focal lengths 0.3 – 2 m ◆ Adapter to mount the unit directly to laser head. ◆ Sheet thickness: ≤ 1 mm <p>Light Guide Arm & Base:</p> <ul style="list-style-type: none"> ◆ Light guide arm total length: ≥ 1.8 m featuring mirrors and articulated elements. ◆ Laser guiding arm for 532 nm, 527 nm and 266 nm, ◆ Shall work for light sheet rotation in 360° ◆ A rail or base for mounting the light arm to the laser must be also provided. ◆ Light guide arm must contain weight balancing element.

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	<ul style="list-style-type: none"> ◆ Shall work 532nm wavelength with > 90% optical transmission. ◆ Aperture: 15 mm or more ◆ Should include mount for light sheet optics and holder to fix it to the laser.
Camera for PIV	<p>Camera: Specifications of camera should be in sync with that of laser for PIV applications.</p> <ul style="list-style-type: none"> ◆ Resolution of camera: 5MP or better ◆ Frame rate: @ 120fps or better (at full resolution), minimum frame rate should be as per the frequency of laser. ◆ Sensor type: CMOS monochrome sensor ◆ Pixel size: 5µm or lower ◆ Interface: Frame grabber to directly save images on PC HDD ◆ Pixel Depth: Minimum 8 bit or better ◆ Lens Mount type: F/C ◆ Camera Filter: wavelength 532 nm with bandpass filter ◆ Quantum efficiency 60% or more at ~532 nm ◆ Minimum interframe time: 0.5 µs or lower ◆ Accessories and cable connection set with camera <p>Scheimpflug Mount Specifications:</p> <ul style="list-style-type: none"> ◆ These Scheimpflug mounts have to operate in a way that the field of view does not move during setting of Scheimpflug angle (i.e. lens stationary and camera position is being adjusted) ◆ Suitable tripod with 3-way gear head for camera mounting.
Performance Synchronizer	<p>Synchronizer/Programmable Timing Unit, frame grabber with one power supply:</p> <ul style="list-style-type: none"> ◆ External housing of synchronizer for PIV application, including all trigger cables for cameras and laser. Configuration of synchronizer via user interface. ◆ Output channel: ≥24 TTL outputs individual configurable in phase shift, pulse length and frequency. ◆ Input channel: ≥ 4 trigger inputs, Incremental encoder mode, enable signal for synchronously starting high speed Acquisition Including control software (windows), time resolution <10 ns or lower. External triggers upto 2.5 MHz or more. Provision to upgrade the same for high-Speed applications. ◆ Output driver type: TTL 0-5V, 50 Ohm ◆ Connector Type: BNC, Trigger cables(BNC) must be included. ◆ Connection to PC: USB ◆ Operation modes, trigger, gate or burst ◆ Must try fully controllable by PIV software to control cameras and laser.
Computer	<ul style="list-style-type: none"> ◆ Computer/Workstation: ◆ Intel Core-i9, 8 cores / 16 threads, or Dual Intel Xeon Six Core 2.5GHz CPU

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	<ul style="list-style-type: none"> ◆ hard disk (4 TB or more), 256 GB SSD of OS, 256GB SSD for streaming of data ◆ RAM: 32 GB or more working memory, ◆ 8 GB or more graphics card, must contain X-16 PCIe Slots ◆ DVD writer, mouse, keyboard/documentation English, ◆ 27" LED monitor 1920×1080 ◆ Mouse and keyboard ◆ Operating system: Windows 10 Professional 64 bit ◆ The PC must allow for direct streaming of recorded images onto the PC in order to allow for prolonged recording times at full resolution and max. speed (several minutes) ◆ All the hardware and software part of computer should be compatible to other (hardware configurations of PIV such as synchronizer, frame grabber etc.)
Software	<p>Software for hardware control and image acquisition for Windows 10, cross-link</p> <ul style="list-style-type: none"> ◆ PIV Processing routines ◆ Software must contain: PIV image capture and control software, 2D/Stereo PIV software module with proper orthogonal decomposition ◆ Advanced image preprocessing algorithms for background subtraction; dynamic masking; custom filters; dedicated multiphase flow algorithms for phase boundary detection. ◆ Advanced vector processing algorithms: featuring iterative adjustment of the size and shape of interrogation on local seeding density and flow gradients, iterative algorithm for direct calculations of translation, rotation and deformation as well as PIV uncertainty calculations. ◆ Background analysis and computing must allow the user to use the software during analysis ◆ Shall have automatic detection of hardware and devices. ◆ Imaging setup support to help the user setting up a single or multi camera system. ◆ Software plugin for Matlab and Tecplot ◆ Online focus assistant for quick software learning to new users. ◆ Acquisition Manager to provide automated measurement and data analysis using transverse systems. ◆ Allow the use distributed database. ◆ Shall allow user-defined routines that allow batch processing. ◆ Shall support processing with multicore processors and GPUs with advanced graphics. ◆ Easy exchange of data, image processing information e.g. export of numerical data, images, calibration results, analysis resources, results as a video and result displays. ◆ Desired: Shall word and easily upgradable to particle/droplet/bubble size measurement based on shadowgraph and interferometric particles imaging technique.

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Seeding Particles	Seeding Particles: <ul style="list-style-type: none"> ◆ For PIV (Water application): At least two different sizes (min. 0.5 kg each) of seeding ◆ Seeding particles with nominal size between 10 – 100 µm for measurements in water. ◆ Reservoir size should be appropriate to cater the requirement of open circuit ◆ Seeding particles compatible with water channel operating upto velocity of 10 m/s.
Safety	◆ Laser protective eyewear for Nd: YAG for 532 nm wavelength
Calibration	◆ Active Target 300 mm x300 mm
General Terms and Conditions	
Extendable to Stereo PIV	The vendor's proposed specification for 2D PIV should be adaptable for future expansion into Stereo/3D PIV with the inclusion of supplementary components.
Pre-dispatch Inspection and Demo	Bidder should provide pre-dispatch inspection of machine and demo in offline mode. Capabilities shown during pre-dispatch demo should be reproduce during on-site installation and training support
Warranty	Warranty period for at least 02 years after successful installation and training. Bidder should quote extended warranty for 01 year as an optional.
Delivery Time	Within 16-20 weeks from the date of purchase order.
Installation and Demonstration	Bidder should install and demonstrate the performance of the equipment physically at HRED, IIT Roorkee within 30 days from the date of delivery.
Training	The bidder must include mandatory, in-depth training sessions for laboratory staff and students. Training should be conducted in person, online training is not preferred.
Spare Parts	Bidder should ensure the availability of spare parts for atleast 10 years.
After Sale Services	The bidder must have an authorized agent in India to offer seamless after-sales service. In the event of any issues, the vendor should provide support in person, online support not preferred.
Documentation	Bidder should submit schematic diagram, product catalogue, previous order copies from government/autonomous educational/research institute along with tender document.
Eligibility Criteria	The bidder/OEM must have supplied at least three (03) units of the quoted or similar model of Particle Image Velocimetry to at least three institutes like IITs, IISc, NITs, DRDO, CSIR labs etc. in the last 5 years. The bidder must attach along with their technical bid the completion reports of the supplied and installed equipment. The bidder must submit certification from the relevant agency for using the instrument in India.

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Optional Item: Table

Vibration isolation platform/table with wheels for ease of portability. The size of the table should be 6ft x 4ft or more sufficient to house computer/workstation, synchronizer, laser head, camera, and microscope. Vibration isolation platform should be provided with compressor for maintaining compressed air of desired pressure required in platform.

Note: Bidder must submit a technical compliance sheet (with bidder specification, deviation & justification) and all the relevant documents to ensure that the technical specifications are compiled & all the conditions are fulfilled.

Note: For Technical Queries Contact: arun.kumar@hre.iitr.ac.in

