



**INDIAN INSTITUTE OF TECHNOLOGY, KANPUR**  
**GT ROAD, KALYANPUR, KANPUR – 208016**  
**UTTAR PRADESH, INDIA**

**TENDER REFERENCE NO.: IITK/AE/PC/2025/01**

**OPEN TENDER ENQUIRY**

**TENDER DOCUMENT**

For

**“Purchase of Servo-Hydraulic Axial Torsional Dynamic Universal Testing Machine”**

## Bid Document

The Indian Institute of Technology Kanpur (“the IITK”) invites Bids (“Bids”) from eligible, qualified, and capable companies for the supply and delivery of “the Goods” and provision of associated services (“Associated Services”) according to the requirements as defined in the Tender document.

<b>Date of Publishing</b>	29.12.2025 (16.00 hrs)
Clarification Start Date and Time	29.12.2025 (16.00 hrs)
Clarification End Date and Time	08.01.2026 (16.00 hrs)
Queries (if any)	No queries will be entertained after clarification end date and time
<b>Bid Submission Start Date</b>	29.12.2025 (16.00 hrs)
Last Date and time of uploading of Bids	08.01.2026 (16.00 hrs)
Last Date and time of <b>submitting</b> , EMD and other documents at IIT Kanpur (if any)	08.01.2026 (16.00 hrs)
Date and time of opening of Technical Bids	09.01.2026 (16.00 hrs)
Date and time of opening of Financial Bids	Will be separately notified for Technically shortlisted/qualified bidders

Interested parties may view and download the tender document containing the detailed terms & conditions from the website <http://eprocure.gov.in/eprocure/app>

**(The bids must be submitted online in electronic form on [www.eprocure.gov.in](http://www.eprocure.gov.in) only. No physical bids will be accepted.)**

## (Part-A)

### Instructions for Online Bid Submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

#### 1. REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “**Online bidder Enrollment**” on the CPP Portal which is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

#### 2. SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

#### 3. PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document

before submitting their bids.

- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

**Note:** *My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.*

#### 4. SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.
- 4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise, the uploaded bid will be rejected.
- 5) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
- 6) The server time (which is displayed on the bidders' dashboard) will be considered as

the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

- 7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done. 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 opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 9) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

## **5. ASSISTANCE TO BIDDERS**

- 1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender. The contact number of end user is 0512-679-6614 . Please call between 10:30 hrs to 17:00 hrs.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

## (Part-B)

### Instruction For e-Procurement

#### 1. PREPARATION AND SUBMISSION OF BIDS:

- 1.1 The detailed tender documents may be downloaded from <http://eprocure.gov.in/eprocure/app> till the last date of submission of tender. The Tender may be submitted online through CPP Portal <http://eprocure.gov.in/eprocure/app>
- 1.2 The bidder should submit the bid online in two parts viz. Technical Bid and Financial Bid. Technical Bid should be upload online in cover-1 and Financial Bid in “. Xls” should be upload online in cover-2

#### 2. SUBMISSION OF THE BID:

- 2.1 All interested eligible bidders are requested to submit their bids online on CPP Portal: <http://eprocure.gov.in/eprocure/app> as per the criteria given in this document:
  - (a) Technical Bid should be uploaded online in cover-1.
  - (b) Financial Bid should be uploaded online in cover-2.

Both Technical and Financial Bid covers should be placed online on the CPP Portal (<http://eprocure.gov.in/eprocure/app> ).

#### 3. TECHNICAL BID:

- 3.1 Signed and Scanned copies of the Technical bid documents as under must be submitted online on CPP Portal: <http://eprocure.gov.in/eprocure/app> .
  - (a) **List of Documents to be scanned and uploaded (Under Cover-1) within the period of bid submission: -**
    1. Scanned copy of Bank details and EMD.
    2. Scanned copy of work experience.
    3. Scanned copy of certificate of GST.
    4. Scanned copy of specifications/brochures & tender acceptance letter, land border sharing and local content on Appendix 1-3.
      - (i) For The tender value upto Rs. 10 Crores - Self-Certificate for local content from the bidder.
      - (ii) For the tender value above Rs. 10 Crores - Certificate for local content from Statutory Auditor/Cost Auditor/Cost Accountant/CA.
    5. Scanned copy of other documents mentioned in tender terms and conditions (if any)
    6. Declaration for turn-over and Bidder's credentials on Appendix 4-5.

**Note:** - No indication of the rates/amounts be made in any of the documents submitted with the Technical Bid.

#### 4. FINANCIAL BID

- 4.1 The currency of all quoted rates shall be Indian Rupees.

- 4.2 In preparing the financial bids, bidders are expected to take into account the requirements and conditions laid down in this Tender document. The financial bids should be uploaded online as per the specified “.Xls” format i.e. Price Bid Excel sheet attached as ‘.Xls’ with the tender and based on the scope of work, service conditions and other terms of the Tender document. It should include all costs associated with the Terms of Reference/Scope of Work of the assignment.
- 4.3 The Financial Proposal should be inclusive of all applicable taxes, duties, fees, levies, and other charges imposed under the applicable laws. The rates quoted in the Tender are inclusive of all applicable taxes, duties etc. **except service tax.** The service tax component shall be re-immersible by the department after receipt of paid challans etc. if applicable.

## **5. LAST DATE FOR SUBMISSION OF TENDER:**

- 5.1 Online bids complete in all respects, must be submitted on or before the last date and time specified in the schedule of events.
- 5.2 The IIT, Kanpur may, at its own discretion, alter/extend the last date for submission of tenders.

## **6. BID VALIDITY**

- 6.1 All the Bids must be valid for a period of 90 days from the last date of submission of the tender for execution of Contract. However, the quoted rates should be valid for the initial/extended period of the Contract from the effective date of the Contract. No request will be considered for price revision during the original Contract period.
- 6.2 A bid valid for a shorter period shall be declared as non-responsive.
- 6.3 In exceptional circumstances, prior to expiry of the original time limit, the IIT may request the bidders to extend the period of validity for a specified additional period beyond the original validity of 90 days. The request and the bidders' responses shall be made in writing. The bidders, not agreeing for such extensions will be allowed to withdraw their bids without forfeiture of their Bid Security.

## **7. MODIFICATION / SUBSTITUTION/ WITHDRAWAL OF BIDS:**

- 7.1 No Bid shall be modified, substituted or withdrawn by the Bidder after the due date of the Bid.
- 7.2 Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid's due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.

## **8. REJECTION OF THE BID:**

- 8.1 The bid submitted shall become invalid and tender fee shall not be refunded if:-
  - (a) The bidder is found ineligible.
  - (b) The bidder does not upload all the documents as stipulated in the bid document.

## **9. SELECTION CRITERIA:**

- 9.1 **PHASE-I: Technical Evaluation**

- (a) Technical evaluation will be done on the basis of information given by technical bid submitted by the bidders. A bid containing partial, incomplete, unclear and superfluous and unwanted information will be summarily rejected.
- (b) Technical declaration must be supported with relevant documents. Discrepancy in relevant supporting documents and technical compliance sheets will lead to rejection of technical bids.

#### 9.2 **PHASE-II: Financial Evaluation**

- (a) Financial bids of technically qualified bidders shall be opened.
- (b) Financial evaluation is purely done on the total financial implication.
- (c) Any superfluous, unreasonable assets rate quotes will be summarily rejected.

### **10. Instruction to the bidder of countries which share land border with India (Rule 144(xi) GFRs)**

- 10.1 Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Department for Promotion of Industry and Internal Trade (DPIIT).
- 10.2 "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company , including any member of a consortium or joint venture (that is an association of several persons, or firms or companies) , every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- 10.3 "Bidder from a country which shares a land border with India" for the purpose of this Order means: -
  - (a) An entity incorporated, established, or registered in such a country; or
  - (b) A subsidiary of an entity incorporated, established, or registered in such a country; or
  - (c) An entity substantially controlled through entities incorporated, established, or registered in such a country; or
  - (d) An entity whose beneficial owner is situated in such a country; or
  - (e) An Indian (or other) agent of such an entity; or
  - (f) A natural person who is a citizen of such a country; or
  - (g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
- 10.4 The beneficial owner for the purpose of (iii) above will be as under:
  - (a) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means .

**Explanation-**

- (i) "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company.
- (ii) "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.
- (b) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
- (c) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
- (d) Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official.
- (e) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

10.5 An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

10.6 In case of tenders for Works contracts, including Turnkey contracts, The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority .

## 11. MII & Purchase Preference:

11.1 As per the Ministry of Commerce and Industry Order No. P-45021/2/2017-PP(BE-II) dated 04.06.2020 preference shall be given to Make in India products for which it is mandatory for bidders to declare Country of Origin of goods and percentage of Local contents in the product.

### Definitions:

**"Local Content"** means 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 customs duties) as a proportion of the total value, in percent.

**"Class-I Local Supplier"** means a supplier or service provider, whose goods, services or works offered for procurement, has local content to or more than 50%, as defined under this order.

**"Class-II Local Supplier"** means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under this order.

**"Margin of Purchase Preference"** means the maximum extent to which the price quoted by a Class-I local supplier may be above the L1 for the purpose of purchase preference. (shall be 20%)

**Purchase Preference:**

- (a) Subject to the provisions of this Order and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to 'Class-I local supplier' in procurements undertaken by procuring entities in the manner specified here under.
- (b) In the procurements of goods or works, which are covered by para 3(b) above and which are divisible in nature, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:
  - (i) Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class local supplier', the contract for full quantity will be awarded to L1.
  - (ii) If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.
- (c) In the procurements of goods or works, which are covered by para 3(b) above and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'Class-1 local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:
  - (i) Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-1 local supplier', the contract will be awarded to L1.
  - (ii) If L1 is not 'Class-1 local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.
  - (iii) In case such lowest eligible 'Class-1 local supplier' fails to match the L1 price, the 'Class-1 local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the 'Class-1 local

supplier' within the margin of purchase preference matches the L1 price, the contract may be awarded to the L1 bidder.

(d) "Class-II Local Supplier" will not get purchase preference in any procurement undertaken by procuring entities.

## 12. Benefits:

12.1 Bidders will get all benefits under Rule-153 of GFR, 2017.

## 13. Integrity Pact (IP):

13.1 The Integrity Pact will be applicable only for tenders valued above 1 crore. The Integrity Pact shall be applicable for all tenders valued above Rupees one (1) crore.

13.2 The Integrity Pact shall be part of the tender documents / Bid documents / Contract.

13.3 (The IP is implemented through a Panel of Independent External Monitors (IEMs) appointed in consultation with the Central Vigilance Commission. The IEMs are mandated to monitor the tender process and the execution of the contract for compliance with the abovementioned principles. Following two IEMs have been appointed in the IIT, Kanpur:

- (i) Shri Ranvir Singh, [IEM1@iitk.ac.in](mailto:IEM1@iitk.ac.in)
- (ii) Shri P. V. V. Satyanarayana, [IEM2@iitk.ac.in](mailto:IEM2@iitk.ac.in)

13.4 All bidders must upload a signed soft copy online of the Integrity Pact (**ANNEXURE-I**) with their bid documents for tenders over ₹1 crore. However, only the L-1 bidder (after the opening of the financial bid) shall be required to submit the Integrity Pact on a ₹100 non-judicial stamp paper in hard copy

13.5 If the Bidder does not submit the signed copy of the IP with the Technical Bid documents, the Bid will not be considered.

**Pre-Contract Integrity Pact**  
(Applicable for all tenders of the value above Rs.1 Crore)

**General**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on \_\_\_\_\_ day of the month of \_\_\_\_\_ 202\_\_\_\_\_.

**BY AND BETWEEN**

The Indian Institute of Technology Kanpur represented through "**The Registrar**", having its office located at G.T. Road, Kalyanpur, Kanpur, Uttar Pradesh – 208016 (hereinafter called the "**BUYER**", which expression shall mean and include, unless **the** context otherwise requires, his successors in office and assigns) of the **First Party**;

**AND**

M/s \_\_\_\_\_ a company incorporated under the Companies Act, 2013 through its representative/authorized signatory (insert name and designation of the officer) vide resolution dated \_\_\_\_\_ passed by the Board of Directors, having its registered office at \_\_\_\_\_

(hereinafter referred to as "**The Bidder(s)/Contractor(s)**" which terms or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in-office, administrators or permitted assignees) of the **Second Party**;

**WHEREAS**, the Institute/Buyer has floated the Tender bearing No. \_\_\_\_\_ (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organization procedures, contract(s) for \_\_\_\_\_ (Name of the work/goods/ services). The Institution values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s) and/or Contractor(s).

**AND WHEREAS**, the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a body corporate and has been established under the provisions of the Institutes of Technology Act, 1961.

**AND WHEREAS**, in order to achieve these goals, in consultation with the CVC, the Govt. of India, Ministry of Education has appointed Independent External Monitors (IEMs), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

**NOW, THEREFORE**, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-

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Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

#### **Section 1: Commitments of the BUYER**

1. The BUYER commits itself to take all measures necessary to prevent corruption and to observe the following principles: -
  - (a) No employee of the BUYER, personally or through family members, shall in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The BUYER shall treat all Bidder(s) with equity and reason during the tender process. The BUYER shall, in particular, before and during the tender process, provide to all Bidder(s) the same information and shall not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in the tender process or the contract execution.
  - (c) The BUYER shall exclude from the process all known persons having conflict of interest.
2. If the BUYER obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the BUYER shall inform the Chief Vigilance Officer, IIT Kanpur and in addition shall initiate disciplinary proceedings.

#### **Section 2: Commitments of BIDDERs**

1. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-
  - (a) The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

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(b) The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.

(c) The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign entity or associates, if any. Further details as mentioned in the "Guidelines of Indian Agents of Foreign suppliers" shall be disclosed by the Bidders(s)/Contractor(s). Further, as mentioned in the Guidelines all payments made to the Indian Agent/representative have to be in Indian Rupees only.

(d) BIDDERs shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

(e) The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorised government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

(f) The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

(g) The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

(h) The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

(i) The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

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- (j) The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- (k) The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- (l) If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender. The term 'relative' for this purpose would be as defined in Section 2(77) of the Companies Act, 2013.
- (m) The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

#### **Section 3: Disqualification from tender process and exclusion from future contracts:**

1. If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put their reliability or credibility in question, the Institute/Buyer is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of Business Dealing".
2. Any violation of Integrity Pact would entail disqualification of the bidder(s) and exclusion from future business dealings, as per the existing provisions of GFR-2017, PC Act, 1988 and other Financial Rules/Guidelines etc. as may be applicable to the organization concerned.

#### **Section 4: Compensation for Damages:**

1. If the Institute/Buyer has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Institute/Buyer is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.
2. If the Institute/Buyer has terminated the contract according to Section 3, or if the Institute/Buyer is entitled to terminate the contract according to Section 3, the Institute/Buyer shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

#### **Section 5: Previous Transgression**

1. THE BIDDER(S) to disclose any transgressions with any other public/government organization that may impinge on the anti-corruption principle. The date of such transgressions, for the purpose of disclosure by the BIDDER(s) in this regard, would be the date on which cognizance of the said transgression was taken by the competent authority. The period for which such transgression(s) is/are to be reported by the bidders

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shall be the last **three years** to be reckoned from date of bid submission. The transgression(s), for which cognizance was taken even before the said period of three years, but are pending conclusion, shall also be reported by the BIDDERS.

2. The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

#### **Section 6: Equal Treatment of all Bidders/Contractors/Sub-Contractors:**

1. In the case of sub-contracting, the principal/main Contractor shall take the responsibilities of adoption of the Integrity Pact by the Sub-contractor.
2. The BUYER will enter into agreements with the identical conditions as this one with all bidders and Contractors.
3. The BUYER will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

#### **Section 7: Criminal Charges against violating Bidder(s)/Contractor(s)/Sub-Contractors:**

1. If the Buyer obtains knowledge of the conduct of a Bidder, Contractor or Sub-contractor, or of an employee or a representative or an associate of a Bidder, Contractor or Sub-contractor which constitutes corruption, or if the Institute/Buyer has substantive suspicion in this regard, the Institute/Buyer will inform the same to the Chief Vigilance Officer, IIT Kanpur.

#### **Section 8: Sanctions for Violations**

1. Any breach of the aforesaid provisions by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required: -
  - (i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.
  - (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason, therefore.
  - (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
  - (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection

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with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

- (v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments already made by the BUYER, along with interest.
- (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.
- (vii) To debar the BIDDER from participating in future bidding processes of the Institute for a minimum period of two years, which may be further extended at the discretion of the BUYER.
- (viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
- (x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

2. The BUYER will be entitled to take all or any of the actions mentioned at para 9.1 (i) to (x) of this Pact also on the Commission by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal Code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.
3. The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

#### **Section 9: Fall Clause**

1. The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub-systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

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### **Section 10: Independent Monitors**

1. The IEMs have been appointed by the Ministry of Education in consultation with the Central Vigilance Commission. The details of the IEMs are as follows:
  - (a) Mr. Ranvir Singh, IEM1@iitk.ac.in
  - (b) Mr. P.V.V. Satyanarayana, IEM2@iitk.ac.in
2. The task of the Monitor shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.
3. The Monitor shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
4. Both the parties accept that the Monitor has the right to access all the documents relating to the project/procurement, including minutes of meetings.
5. As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.
6. The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.
7. The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
8. The Monitor will submit a written report to the designated Authority of BUYER within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.
9. A person signing the IP Pact shall not approach the Court while representing the matter to IEMs and shall await the decision in the matter.
10. The IP would be implemented through a panel of Independent External Monitors (IEMs), appointed by the Ministry. The IEM would review independently and objectively whether and to what extent parties have complied with their obligations under the Pact on receipt of any complaint by them from the Bidder(s).
11. Integrity Pact (IP), in respect of a particular contract, shall be operative from the date IP is signed by both parties. The IEMs shall examine all the representations/grievances/complaints received by them from the bidders or their authorized representatives related to any discrimination on account of lack of fair play in modes of procurement and bidding systems, tendering method, eligibility conditions, bid

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evaluation criteria, commercial terms & conditions, choice of technology/specifications etc.

12. For ensuring the desired transparency and objectivity in dealing with the complaints arising out of the tendering process, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an examination, and submit their joint recommendations to the Management. In case the full panel is not available due to some unavoidable reasons, the available IEM(s) will conduct examination of the complaints. Consent of the IEM(s), who may not be available, shall be taken on the records.
13. In the event of any dispute between the management and the contractor relating to those contracts where Integrity Pact is applicable, in case, both the parties are agreeable, they may try to settle dispute through mediation before the panel of IEMs in a time-bound manner. If required, the organization may adopt any mediation rules for this purpose.  
In case, the dispute remains unresolved even after mediation by the panel of IEMs, the organization may take further action as per the terms & conditions of the contract.  
The fees/expenses on dispute resolution shall be equally shared by both parties.
14. If the Monitor has reported to the Management of the BUYER a substantiated suspicion of an offense under the relevant IPC/PC Act, the Management of the BUYER will take action after examination of the veracity of the intent of the action.
15. The word "**Monitor**" would include both singular and plural.

#### **Section 11: Facilitation of Investigation**

1. In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents, including the Books of Accounts of the BIDDER, and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

#### **Section 12: Law and Place of Jurisdiction**

1. This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER i.e., Kanpur Nagar.

#### **Section 13: Other Provisions**

1. The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.
2. Changes and supplements, as well as termination notices, need to be made in writing. Side agreements have not been made.

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3. In case of a joint venture, all the partners of the joint venture should sign the Integrity Pact. In case of sub-contracting, the principal contractor shall be solely responsible for the adherence to the provisions of IP by the sub-contractor(s).
4. Issues like Warranty/Guarantee etc. shall be outside the purview of the IEMs.
5. This Integrity Pact is deemed as part of the contract.

#### **Section 14: Validity**

1. The validity of this Integrity Pact shall be from the date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including the warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.
2. Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement with their original intentions.

**IN WITNESS WHEREOF**, the parties hereunto set their hands and seals and executed this Integrity Pact as of the date/month/year first above written in the presence of following witnesses:

For & on behalf of  
**The Indian Institute of Technology Kanpur**  
**(First Party)**  
 Signed, Sealed and delivered by

Name: **Vishwa Ranjan** विश्व रंजन / Vishwa Ranjan  
 Designation: **Registrar**, कुलसचिव / Registrar  
 Address: **IIT Kanpur** भारतीय प्रौद्योगिकी संस्थान कानपुर  
 (Authorized Signatory) **INDIAN INSTITUTE OF TECHNOLOGY KANPUR**  
 कानपुर - 208 016 (उ.प्र.) भारत  
 KANPUR - 208 016 (U.P.) INDIA

For & on behalf of  
**The M/s .....**  
**(Second Party)**  
 Signed, Sealed and delivered by

Name: .....  
 Designation: .....  
 Address: .....  
 (Authorized Signatory vide resolution  
 dated ..... passed by the Board of  
 Directors)

#### **In the presence of Witness:**

1. .... (Indenter)	1. ....
2. ....	2. ....

## (Part-C)

# Commercial Terms and Conditions

## 1. DEFINITIONS

These Commercial Terms and Conditions shall constitute the General Conditions of Contract, where no separate contract is signed with the selected Bidder(s), and, the Bidders by putting their signature and stamp on each page of this Section V are binding themselves to these Terms and Conditions. In the Commercial Terms and Conditions as defined below, words and expressions shall have the following meanings assigned to them:

- 1.1 **“Contract”** means the agreement of the Parties relating to the procurement of Goods and / or the IITK Purchase Order (PO), and all attachments incorporated by reference, which shall form an integral part of the Contract. In the event of any discrepancy, the documents to prevail shall be given precedence in the following order: (i) the Contract (where separately signed), (ii) the IITK Purchase Order, (iii) its attachments, and (iv) these Commercial Terms and Conditions.
- 1.2 **“Contractor”** means the person or entity named in the ‘CONTRACTOR’ named field of the IITK Purchase Order and any agreed in writing by the IITK legal successor(s) in title.
- 1.3 **“Day”** means any calendar day.
- 1.4 **“Delivery Date”** means the latest possible date by which the Goods shall be delivered by the Contractor to the IITK, as specified in the ‘DELIVERY DATE’ named field of the IITK Purchase Order.
- 1.5 **“Force Majeure”** shall mean any unforeseeable exceptional situation or event beyond the Parties’ control which prevents either of them from fulfilling any of their obligations under the Contract, was not attributable to error or negligence on their part (or of their partners, contractors, agents or employees), and could not have been avoided by the exercise of due diligence. Defects in equipment or material or delays in making them available, labour disputes, strikes or financial problems cannot be invoked as Force Majeure by the defaulting Party. Neither of the Parties shall be held liable for breach of its obligations under the Contract if it is prevented from fulfilling them by Force Majeure. The Party invoking Force Majeure shall notify the other without delay, stating the nature, likely duration and foreseeable effect, and take any measure to minimize possible damage.
- 1.6 **“Goods”** means all of the goods to be supplied to the IITK by the Contractor under the Contract.
- 1.7 **“IITK”** means the Indian Institute of Technology Kanpur.
- 1.8 **“IITK Purchase Order”** means the IITK’s official Purchase Order document.
- 1.9 **“Party”** means the IITK, or the Contractor and “Parties” means the IITK and the Contractor; and “Place(s) of Delivery” means the location(s) or place(s) where the Goods are to be delivered, as specified in the ‘SHIP TO’ named field of the IITK Purchase Order.

## 2. CONCLUSION OF THE CONTRACT

- 2.1. The Contract is made between the IITK and the Contractor. The Contractor is engaged as an independent contractor for the sole purpose of delivering the Goods.

- 2.2. The Contract shall be concluded upon the Contractor duly following the countersigning procedure as stated in the IITK Letter of Intent (LOI).

### **3. FUNDING**

- 3.1 This Contract shall become and remain effective only on the condition that an official Purchase Order is issued by IITK following the conclusion of tender exercise. In the event this is not or no longer shall the case, the IITK without unreasonable delay notify the Contractor thereof.
- 3.2 Any continuation of the Contractor's performance under this Contract after being notified by the IITK shall be at the Contractor's risk and expense.

### **4. DELIVERY AND TAKE-OVER OF GOODS**

- 4.1 The Contractor shall deliver the Goods at the Place(s) of Delivery. On behalf of the IITK, a duly authorised representative(s), shall take-over the Goods upon delivery. Take-over of the Goods by the IITK shall not be deemed acceptance of the Goods by the IITK. The time of delivery as specified in the Contract / PO shall be strictly adhered to, and time shall be of the essence.

### **5. QUALITY OF GOODS**

- 5.1 The Contractor shall deliver Goods that are:
  - (a) of the quality, quantity and description as required by the Contract / PO; and
  - (b) free from any right or claim of a third party, including rights based on industrial property or other intellectual property.
- 5.2 Should the Goods be of the type "homogeneously defined" or disposable, the Contractor shall undertake, certify, and guarantee that all Goods delivered shall be of the same quality and characteristics as mentioned in the specifications.

### **6. INSPECTION AND ACCEPTANCE**

- 6.1 The duly authorized representative(s) of the IITK shall have the right, before payment, to inspect the Goods either at the Contractor's stores, during manufacture, at the ports and/or in places of shipment, or at the Place(s) of Delivery. The Contractor shall provide all facilities for such inspection. The IITK may issue a written waiver of inspection. Any inspection carried out by representative(s) of the IITK, or any waiver thereof shall be without prejudice to other provisions of the Contract concerning obligations assumed by the Contractor, including specifications of the Goods.
- 6.2 Upon delivery and inspection of the Goods, the IITK shall inspect the goods as soon as possible and complete the Goods Receiving Document. Should any Goods fail to conform to the technical specifications, codes and standards under the Contract, the IITK may reject the Goods. The Contractor shall, at no cost to the IITK, replace the rejected Goods or, alternatively, rectify the non-conformity.
- 6.3 In the case of Goods ordered on the basis of specifications, the IITK shall have the right to reject the Goods or any part thereof and terminate the Contract if the Goods do not conform to the specifications. Nothing in this clause shall in any way release the Contractor from any warranty or other obligations under the Contract.

## **7. SHIPPING AND INSURANCE**

7.1 For overseas orders, shipping arrangements shall be co-ordinated by IITK. Original shipping documents including the packing list shall be airmailed/mailed by the Contractor to the (Assistant Registrar (S&P), IIT, Kanpur – 208 016, UP, India).

## **8. OBSERVANCE OF LAW AND EXPORT LICENCES**

8.1 The Contractor shall comply with all laws, ordinance, rules and regulations bearing upon the performance of its obligations under the terms of the Contract. If an export licence or any other governmental authorisation is required for the Goods, it shall be the obligation of the Contractor to obtain such licence or governmental authorisation. In the event of the Contractor's failure to obtain such licence or authorisation within a reasonable time, the IITK may immediately terminate the Contract. Where the award procedure or execution of the Contract is vitiated by substantial errors or irregularities or by fraud, the IITK shall suspend execution of the Contract.

8.2 Where such errors, irregularities or fraud are attributable to the Contractor, the IITK may also refuse to make payments or may recover monies already paid, in proportion to the seriousness of the errors, irregularities or fraud. The purpose of suspending the Contract shall be to verify whether presumed substantial errors and irregularities or fraud have actually occurred. If they are not confirmed, execution of the Contract shall resume as soon as possible. A substantial error or irregularity shall be any infringement of a contract or regulatory provision of India, resulting from an act or an omission that causes or might cause a financial loss.

## **9. PRICE**

9.1 The price of the Goods shall be as stated in the Purchase Order and may not be increased.

## **10. PAYMENT**

10.1 Unless otherwise stipulated in the Purchase Order, the IITK shall make payment within thirty (30) Days of the later of:

- (a) Successful delivery of the goods to IITK as confirmed by the consignee (Assistant Registrar, Store & Purchase, IIT-Kanpur), endorsed by the indenter and approved by the indenters' Head of Department / Section.
- (b) Receipt of customary shipping documents and any other documents specified in the Contract; and (c) Receipt of the original invoice issued by the Contractor.

- 10.2 All invoices shall be in original and shall contain the IITK Purchase Order number, and a description, the quantities, unit and total price(s) of the Goods delivered. The currency of the invoice and payment shall be as specified in the Purchase Order. Unless otherwise authorized by the IITK, a separate invoice shall be submitted for each shipment under the Contract / PO. Subject to Clause 11 below ('Tax Exemption'), if applicable, the GST amount shall be separately identified in the invoice.
- 10.3 Payments shall be made in the currency stated in the Contract / PO, on the basis of the equivalent value of INR on the day of payment and paid directly into the nominated bank account.
- 10.4 The IITK shall not pay any charge for late payments.

## **11. TAX EXEMPTION**

- 11.1 The Contractor's price shall reflect any tax exemption to which the IITK is entitled. If it is subsequently determined that any taxes that have been included in the price are not required to be paid or if, having been paid, any such taxes are subject to refunding, the IITK shall deduct the amount from the Contract price. Payment of such adjusted amount shall constitute full payment by the IITK. In the event that any taxing authority refuses to recognize the IITK's exemption from taxes, the Contractor shall immediately consult with the IITK to determine a mutually acceptable procedure for settling the applicable amount.

## **12. WARRANTY**

- 12.1 The Contractor warrants that the Goods furnished under the Contract conform to the technical specifications, description and standards specified in the Contract, and are new and unused, and free from defects in design, workmanship and/or materials.
- 12.2 The Contractor shall provide a warranty for the Goods for a period of one year from the date of acceptance of the Goods by the IITK, unless the standard manufacturer's warranty period is longer in which case the longer period shall apply.
- 12.3 In the case of "homogeneously defined" or disposable goods, should any portion of the Goods, at any time, not comply with clause 5.1 or 5.2 herein or otherwise prove to be defective, the Contractor shall, upon written notification from the IITK, replace that portion of the Goods and bear all costs associated with the replacement of same.

## **13. PACKING**

- 13.1 The Goods shall be packed and marked in a proper manner and in accordance with the Contract and any statutory requirements and any requirements of the carrier(s). In particular, the Goods shall be marked with the IITK Purchase Order number and the net, gross and tare weights, the name of the contents shall be clearly marked on each container and all containers of hazardous goods (and all documents relating thereto) shall bear prominent and adequate warnings.
- 13.2 The Contractor shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination and the absence of appropriate handling facilities at all points in transit.
- 13.3 All packaging materials shall be non-returnable.

## **14. DEFAULT AND DAMAGES**

- 14.1 If due to reasons attributable to the Contractor, the Contractor fails or refuses to:

- a. deliver any or all of the Goods under the Purchase Order.
- b. comply with any or all of the terms and conditions set out in the Purchase Order; or
- c. deliver any or all of the Goods under the Purchase Order on or before the Delivery Date; the IITK may hold the Contractor in default under the Purchase Order.

14.2 When the Contractor is thus in default, the IITK may, by written notice to the Contractor, immediately terminate the Purchase Order in whole or in such part or parts thereof in respect of which the Contractor is in default.

14.3 Alternatively, to clause 14 above when the Contractor is thus in default, the IITK may, at its own discretion, set a reasonable period of time for the Contractor to remedy its default. Any new Delivery Date shall be specified in a written amendment to the Purchase Order, duly countersigned by the Contractor.

14.4 The IITK may, at its discretion, impose penalties upon the Contractor calculated in accordance with clause 15 for each Day the Contractor is late in delivering the Goods past the Delivery Date initially specified in the Purchase Order.

14.5 If the Contractor does not remedy its default within the period accorded under clause 16, the IITK may, by written notice to the Contractor, terminate the Purchase Order with immediate effect.

14.6 Upon any termination of the Purchase Order, in whole or such part(s) thereof in respect of which the Contractor is in default, the IITK may engage another contractor to deliver the Goods and recover any difference in price and any additional costs from the Contractor.

14.7 The Contractor shall indemnify the IITK for all losses, charges, costs and expenses, which the IITK may suffer or incur as a result the Contractor's default, including those resulting from engaging another contractor pursuant to this clause 14.

## **15. PENALTIES**

15.1 If, in accordance with clause 15, the IITK imposes penalties on the Contractor, such penalties shall amount to point five percent (0.5%) of the total Purchase Order price for each week following the initial Delivery Date specified in the Purchase Order but shall not amount to more than Ten percent (10%) of the total Purchase Order value. The penalties for the delay may be deducted by IITK from any sum(s) due, or to become due, by the IITK to the Contractor.

## **16. DELAY NOT ATTRIBUTABLE TO THE CONTRACTOR**

16.1 If the Contractor is delayed at any time in the delivery of the Goods or fulfilment of any other of the Contractor's obligations by any act or omission of the IITK, or by any of its officials, or by any separate contractor(s) contracted by the IITK, or by changes ordered in the type and/or quantity of the ordered Goods, or the Place(s) of Delivery, or any causes beyond the Contractor's reasonable control, or by any other cause, which the IITK determines may reasonably justify the delay, the Delivery Date of the Goods, or fulfilment of any other of the Contractor's applicable obligations shall be extended for such reasonable period of time as the IITK and the Contractor mutually determine. The set reasonable period of time and any amended delivery date shall be specified in a written amendment to the Contract / PO, duly countersigned by the Contractor.

## **17. FORCE MAJEURE**

17.1 As soon as possible after the occurrence of any event constituting Force Majeure, but no later than three (3) Days, the Contractor shall give notice and full particulars in writing to the IITK of the Force Majeure. If the Contractor is thereby rendered unable, wholly or in part, to meet its obligations under the Contract, the IITK may terminate the Contract / PO with immediate effect by providing written notice to the Contractor.

## **18. INDEMNITY**

- 18.1 The Contractor shall indemnify, hold and save harmless and defend at its own expense the IITK, and all of the foregoing's officials, agents, servants and employees from and against all suits, claims, demands and liability of any nature or kind, including costs and expenses, arising out of acts or omissions of the Contractor or its employees, agents or subcontractors in the performance of the Contract.
- 18.2 Clause 18 shall include, without limitation, claims and liabilities in the nature of workmen's compensation and claims and liabilities arising out of the use of patented inventions or devices.

## **19. ASSIGNMENT**

- 19.1 The Contractor shall not assign, transfer, pledge or make other disposition of the Purchase Order or any part thereof or of any of the Contractor's rights, claims or obligations under the Purchase Order except with the express written consent of the IITK. Any assignment made without such consent shall be void and of no effect.
- 19.2 The Contractor shall not subcontract any of its obligations under the Contract / PO without the express written consent of the IITK. The IITK may require the Contractor to furnish particulars of the proposed subcontract as the IITK deems necessary.
- 19.3 The IITK's approval of any subcontracting shall not relieve the Contractor from any liability or obligation under the Contract. In any subcontract, the Contractor agrees to bind the subcontractor by the same terms and conditions by which the Contractor is bound under the Contract / PO.

## **20. INSOLVENCY AND BANKRUPTCY**

- 20.1 Should the Contractor become insolvent or should control of the Contractor change by virtue of insolvency, the IITK may with immediate effect and without prejudice to any other right or remedy available to it, suspend the performance of the Contractor's obligations or terminate the Purchase Order with immediate effect, by providing the Contractor with written notice thereof.
- 20.2 Should the Contractor be adjudged bankrupt, or should the Contractor make a general assignment for the benefit of its creditors, or should a receiver be appointed on account of the Contractor's insolvency, the IITK may, without prejudice to any other right or remedy available to it, terminate the Purchase Order with immediate effect by providing the Contractor with written notice thereof.

## **21. TERMINATION**

- 21.1 The IITK shall have the right to terminate the Purchase Order or any of the provisions thereof at any time by serving a three days' notice to the Contractor.

## **22. WAIVER**

- 22.1 A waiver of any breach of or default under the Contract / PO shall not constitute a waiver of any other breach or default and shall not affect the other terms of the Contract / PO. The rights and remedies provided by the Purchase Order are cumulative and are not exclusive of any other rights or remedies.

## **23. ADVERTISING**

23.1 The Contractor shall not advertise or otherwise make public the fact that it is a contractor to the IITK. The Contractor shall not in any way use the name, emblem, logo, official seal, or any abbreviation of the IITK.

## **24. DISCRETION AND CONFIDENTIALITY**

24.1 The Contractor is required to exercise the utmost discretion in all matters relating to the Contract / Purchase Order. Unless required in connection with the performance of the Purchase Order or expressly authorised in writing by the IITK, the Contractor shall not disclose at any time to any third party any information which has not been made public and which is known to the Contractor by reason of its association with the IITK. The Contractor shall not, at any time, use such information to any private advantage. These obligations do not lapse upon any completion, expiration, cancellation or termination of the Contract / PO.

## **25. NOTICES**

25.1 Any notice given in connection with the Contract shall be given in English and in writing and shall be deemed to be validly given if sent by registered mail or by fax or by email to the other Party at the following:

- a. for the IITK: the contact details set out in the 'IITK BUYER' name field of the Purchase Order; and
- b. for the Contractor: the contact details set out in the 'CONTRACTOR' named field of the IITK Contract/Purchase Order.

## **26. STAFF MEMBERS NOT TO BENEFIT**

26.1 The Contractor shall not grant to any official of the IITK any direct or indirect benefit or preferential treatment on the basis of the Purchase Order or the award thereof. Any breach of this provision shall constitute a fundamental breach of the Purchase Order.

## **27. GOVERNING LAW**

27.1 The Contract shall be governed by and construed in accordance with the substantive laws of the Republic of India.

## **28. SETTLEMENT OF DISPUTES**

28.1 The Parties shall use their best efforts to negotiate and amicably settle any disputes, controversies or claims arising out of, or in connection with, the Contract / Purchase Order or its interpretation.

28.2 If the Parties fail to settle the dispute amicably within thirty (30) Days of commencement of the negotiations, the dispute shall be settled through arbitration. One (1) sole arbitrator shall be appointed by the Director of IITK who full powers shall have to make final and binding decisions subject to prevailing laws of India. The appointing authority shall be the Director of IITK. The place of arbitration shall be Kanpur, and the language used in the arbitration proceedings shall be English.

## **29. PRIVILEGES AND IMMUNITIES**

29.1 No provision of the Contract / Purchase Order shall be deemed, or interpreted as, a waiver of the privileges and immunities enjoyed by the IITK.

## **30. AMENDMENTS**

30.1 No modification, amendment or change to the Contract/Purchase Order, or waiver of any of its provisions, or any additional contractual relationship with the Contractor shall be valid unless approved in the form of a written amendment to the Contract/Purchase Order, signed by a fully authorised representative of each Party.

## **31. VALIDITY**

31.1 The invalidity in whole or part of any condition of the Contract / Purchase Order or clause thereof shall not affect the validity of the remainder of such condition or clause.

## **32. ENTIRE AGREEMENT**

32.1 The Contract / Purchase Order constitute the entire agreement and understanding of the Parties and supersede any previous agreement, whether orally or in writing, between the Parties relating to the subject matter of the Contract.

## **33. GOVERNING LANGUAGE**

33.1 The Contract / Purchase Order shall be executed in the English language which shall be the binding and controlling language for all matters relating to the meaning and interpretation of the Contract / Purchase Order.

**Department of Aerospace Engineering  
Indian Institute of Technology Kanpur  
Kanpur (UP) 208016 India**

Enquiry date: 29.12.2025

Enquiry No: IITK/AE/PC/2025/01

Online quotations are invited for ***Servo-Hydraulic Axial Torsional Dynamic Universal Testing Machine, Capacity: 100kN, 1100N-m***. Detailed specifications are described below.

**Technical Specifications (Minimum Eligibility Criteria):**

**100 kN / 1100 N.m Axial-Torsional Servohydraulic Test System**

**1. Introduction**

- 1.1. This document provides the purchase specification for a 100 kN / 1100 N-m servohydraulic axial-torsional material test system. The system shall include all components necessary for complete system operation including load frame, control electronics, hydraulic power supply, cables, plumbing and all necessary fittings and connectors.
- 1.2. The components of the test system are to be new. No demonstration or used equipment shall be acceptable.
- 1.3. The components of the system shall be of proven design with a history of satisfactory performance. References for five similar systems shall be provided. Unproven equipment, components, or concepts shall not be acceptable.

**2. Vendor Response**

- 2.1. All vendors responding to this bid specification shall include a written line-by-line response to each paragraph number of this specification. Each item response is to be specific and detailed enough to allow full evaluation of the equipment offered and its capabilities. A "comply" or "deviation" response only shall not be acceptable.
- 2.2. Responding vendors shall include quotations and descriptive literature with their response to allow the buyer to make a complete evaluation and appraisal of the offering with respect to the requirements set forth in this document.
- 2.3. Bidders shall state estimated delivery times of any equipment offered in response to this specification. Shipping terms shall be FOB destination.
- 2.4. Responding vendors shall include a list of utility requirements necessary for operation of the offered equipment.

**3. Test System Description**

**3.1. Load Unit**

- 3.1.1. The load unit shall be fatigue rated and capable of fully reversed through zero loading at full capacity for a minimum of 100 million cycles.
- 3.1.2. The load unit shall include a load frame, an axial-torsional load transducer, a displacement transducer, a rotation transducer, specimen adapters, hydraulic interface manifold, axial and torsional servovalves, and servovalve manifolds.
- 3.1.3. The load unit shall be fatigue rated at  $\pm 100$  kN ( $\pm 22,000$  pounds) axial load, and  $\pm 1100$  N-m ( $\pm 10,000$  in.-lb.) of torsion.
- 3.1.4. The load unit shall be equipped with a fatigue-rated linear actuator capable of imposing  $\pm 100$  kN ( $\pm 22,000$  lbs.) of axial force and displacements of at least  $\pm 75$ mm ( $\pm 3$  in)
- 3.1.5. The linear actuator shall be equipped with hydrostatic linear bearings which are integral to the load unit base platen to give maximum possible lateral stiffness for reaction of possible large side loads during testing and reduce the changes for undesirable specimen bending and off-axis loading.
- 3.1.6. The linear actuator shall use the load unit base platen as the upper endcap to shorten the load train and increase lateral stiffness.
- 3.1.7. Hydraulic cushions will be built into the linear actuator for system protection and safety when the actuator is programmed into either position extreme.
- 3.1.8. The load unit shall be equipped with a fatigue rated rotary actuator capable of imposing  $\pm 1,100$  N-M ( $\pm 10,000$  in.-lb.) of torsion and rotations of  $\pm 50^\circ$ .
- 3.1.9. The rotary actuator shall be equipped with hydrostatic thrust bearings to react the inertial loads imposed during testing.
- 3.1.10. The rotary actuator shall be built with close tolerances to control leakage and eliminate the need for high pressure vane seals and therefore minimize waveform distortion.
- 3.1.11. The load frame shall be free standing for installation on a standard concrete floor. It shall not require structural floor modifications.
- 3.1.12. The load frame shall include two smooth chrome plated columns minimum 120mm in diameter with a lower platen and variable position upper crosshead. It shall be possible to position and secure the crosshead using hydraulic lift and locking mechanisms. The locking of the upper crosshead shall be integrated into the electronics such that system interlocks will not allow operation of the system unless the crosshead is locked in place.
- 3.1.13. The horizontal spacing between the columns shall be at least 530 mm.
- 3.1.14. The total height of the load frame shall be no more than 3,500 mm
- 3.1.15. The load frame shall accommodate a test space up to 1,150 mm in length, excluding grips.
- 3.1.16. The load frame shall be equipped with a front-mounted control panel for controlling the hydraulic crosshead lifts and locks.
- 3.1.17. The load unit shall be equipped with a single transducer for the measurement of axial load and torque. (System force transducer)
- 3.1.18. The load transducer shall be fatigue rated at the specified axial and torsional ratings of the load unit.
- 3.1.19. Non-linearity shall be less than 0.15% full scale on both axial and torsional measurement channels.
- 3.1.20. Hysteresis shall be less than 0.10% full scale on both axial and torsional measurement channels.

- 3.1.21 Static overload capacity shall be 150% of fatigue-rated capacity on both axial and torsional measurement channels.
- 3.1.22 Temperature coefficient of zero and temperature coefficient of output shall be less than 0.002% of full scale per degree F.
- 3.1.23 Zero load unbalance shall be less than  $\pm 1.0\%$  of full scale.
- 3.1.24 Tension/compression non-symmetry shall be less than 1.0% of full scale.
- 3.1.25 Crosstalk between measurement axes shall be less than 0.5% of full scale when loading both axes at any value up to the full capacity of the load transducer.
- 3.1.26 The axial and torsional output at the rated capacity shall be at least 2 mV/v for optimum signal-to-noise ratio.
- 3.1.27 The axial stiffness of the load transducer shall be at least 3,300 kN/mm.
- 3.1.28 The torsional stiffness of the load transducer shall be at least 135 kN.m/rad.
- 3.1.29 The overturning moment stiffness of the load transducer shall be at least 7 million N.m/rad.
- 3.1.30 The sideload stiffness of the load transducer shall be at least 240 kN/mm.
- 3.1.31 The load unit shall be equipped with an LDVT for the measurement and control of axial displacements. The LVDT shall be compatible and integrated with the control electronics. It shall have a displacement capability of at least  $\pm 75$  mm ( $\pm 3$  inches).
- 3.1.32 The load unit shall be equipped with an ADT for the measurement and control of angular displacements. The ADT shall be compatible and integrated with the control electronics. It shall have a measurement capability of at least  $\pm 50$  degrees.

## 3.2 Hydraulic Service Manifold

- 3.2.1 A hydraulic service manifold shall be manifold mounted directly to the system actuator to increase system dynamic performance and minimize potential leaks.
- 3.2.2 The service manifold shall include 1 liter pressure and return line accumulators to minimize pressure ripple.
- 3.2.3 The manifold shall include provisions for mounting up to two servo valves.
- 3.2.4 The axial servo valve shall have rated minimum capacity of 55 Liter per min.
- 3.2.5 The rotary servo valve shall have rated minimum capacity of 15 Liter per min.
- 3.2.6 The hydraulic service manifold shall have a maximum flow rating of not less than 30 GPM.
- 3.2.7 The hydraulic service manifold shall provide local ON/ LOW/HIGH//OFF control to isolate the pump pressure from the actuator. The manifold will have slow turn on capability adjustable from 300 to 3,000 psi.

## 3.3 Axial-Torsional Hydraulic Wedge Grip

- 3.3.1 Featuring side-loading capability for easy specimen insertion, grips should ensure even specimen loading across the entire face of the wedge and minimize bending strains. It should be ideal for a wide range of tensile and fatigue applications.
- 3.3.2 The Hydraulic grip should be rated Dynamic Force: 100 kN
- 3.3.3 The Hydraulic grip should be rated as Torsional Capacity: 1100 N-m
- 3.3.4 The Hydraulic grip should be rated of Hydraulic Pressure Rating: 21 MPa
- 3.3.5 The Hydraulic grip should be rated as to withstand between Temperature Range: -15°C to 65°C

- 3.3.6 Wedge set for flat specimen of thickness 0 – 7 mm
- 3.3.7 Wedge set for round specimen of diameter 6 – 12 mm

#### **3.4 Axial Torsional Extensometer**

- 3.4.1 The extensometer should simultaneously measure the axial deflection and torsional angle-of-twist over the gauge length of the specimen
- 3.4.2 The extensometer should be fatigue rated at minimum frequency of 10 Hz.
- 3.4.3 The extensometer should have gauge length: 25 mm
- 3.4.4 The extensometer should have minimum angular travel:  $\pm 0.5\text{mm}$
- 3.4.5 The extensometer should have minimum axial travel:  $+1.20/-0.50\text{ mm}$

### **4. Electronic Controls and Equipment**

#### **4.1. General**

- 4.1.1 The test system shall be controlled by a desktop computer workstation which is integrated into the controls system and provides the main operator software interface. The operating system of the PC shall be preemptive, multi-tasking, and multi-threaded.
- 4.1.2 Closed loop control shall be provided by the use of a digital controller that provides complete control of the servo-loop, data acquisition, and function generation.
- 4.1.3 The system shall have the capability to be programmed by the operator using a standard library of procedure calls designed specifically for real-time control of the system.
- 4.1.4 The system shall have the capability for fully automated materials testing with the addition of software applications programs.
- 4.1.5 All hardware adjustments and settings are to be controlled through software.
- 4.1.6 The software that controls the system shall run under the multitasking Windows 11 or any latest operating system.
- 4.1.7 All applications software shall run under the Windows 11 or any latest operating system.
- 4.1.8 The system software will provide each user with a customized desktop that includes screen position memory and saved settings for the controller.

#### **4.2 Closed Loop Controller**

- 4.2.1 A digital controller shall be provided which provides for closed loop control of the system.
- 4.2.2 The controller shall have the capability to perform automated dynamic control mode switching between any connected transducer. Any transducer, whether conditioned by the controller or not, can be selected for control. Control modes will include load control through a load cell, strain control through an extensometer, displacement control through an LVDT, or control through any other installed transducer that provides a high level  $\pm 10\text{V}$  voltage input.
- 4.2.3 The controller chassis shall have slots for up to 6 transducer signal conditioning modules in a single chassis. These conditioners shall be fully integrated into the control system and possess the capability for computer control of transducer zero, transducer excitation and linearization. All of the conditioners will be available for use as control channels.

- 4.2.4 Three (3) channels of analog output shall be available to read the following signals from any conditioner: excitation, transducer zero, preamp output, and high-level transducer output. Output signals shall be in the calibrated range of the transducer, for any installed transducer.
- 4.2.5 The controller shall have the capability to assign actions for detectors. The actions shall include off, indicate, program interlock, hydraulics off, and valve clamp. These actions shall be set up by the user in the system software. Once set up, the actions can be saved and recalled.
- 4.2.6 The controller shall have minimum one digital I/O required for normal system control and that can be upgraded to maximum three (3) uncommitted channels of digital I/O (3 in, 3 out) shall be available for control of peripheral devices.
- 4.2.7 The control loop update rate shall be at a minimum of 6 kHz to allow for testing at high frequencies.
- 4.2.8 The controller shall have the capability to program an external controller at a low rate (25Hz) through an analog output signal. Feedback signals shall be available when using command compensation techniques.
- 4.2.9 The controller shall have multiple adaptive compensation techniques available as options. These may be upgraded to include peak valley control, null pacing, amplitude and phase control, adaptive inverse control, arbitrary end level control or peak valley phase control in future.

#### **4.3. Transducer Signal Conditioners, Digital Universal Conditioners (DUC)**

- 4.3.1 For conditioning of axial load, torsional load, LVDT, ADT, extensometer or strain gage signal, one DUC signal conditioner shall be provided. Each DUC channel shall be available for test control if desired with mode switching between any available channel during a test.
- 4.3.2 The signal conditioners shall have a single full range conditioning employed.
- 4.3.5 Each signal conditioner shall have computer control of linearization for accurate, automated calibration of transducer
- 4.3.6 The signal conditioners shall have computer control of transducer zeroing to allow for fully automated testing.
- 4.3.7 The signal conditioners shall have computer control of transducer excitation to allow for fully automated testing.
- 4.3.8 The signal conditioners shall have computer control of signal filters cut off frequency on and off.
- 4.3.9 Each conditioner shall have the capability to detect excitation loss and have computer control of limit detection for operator and system safety.

#### **4.4 Valve Drivers**

- 4.4.1 For each axis of control, a valve driver shall be provided.
- 4.4.2 A valve driver shall support single or dual two stage servovalves in addition to linear electric DC Servo motor drives.
- 4.4.3 The D/A output to the servovalve driver shall be a minimum 16 bit resolution. The maximum current output of the valve driver will be 100 mA software configurable.
- 4.4.4 To ensure accurate valve balance, each individual valve driver shall have the valve balance computer controlled. Valve balance up to  $\pm$  full scale will be possible.

#### **4.5 Function Generation Waveforms**

- 4.5.1 Function generation shall be fully integrated into the system control software and electronics with the capability to stop and start tests in an automated mode through a computer.
- 4.5.2 The function generator shall be capable of generating haversine, square, and ramp waveforms.
- 4.5.3 The system shall be capable of generating and controlling from wave shapes that are defined by specific applications programs.
- 4.5.4 The wave shape frequency range shall be from 0.001 to 600 Hz.
- 4.5.5 The function generator will have built in cycle counter and a preset cycle count used to terminate the test.
- 4.5.6 The function generator will include mean, amplitude, and frequency adjustment. Mean and amplitude controls for ensuring that the system operates to the desired mean and amplitude will be included.
- 4.5.7 Command signals will be generated with 32-bit accuracy. Accuracy of the selected frequency (period) will be within 1 microsecond.

#### **4.6 Data Acquisition**

- 4.6.1 Each universal conditioner shall provide a single channel of data acquisition. These conditioners shall employ simultaneous sample and hold.
- 4.6.2 Optionally cards with six (6) channels of data acquisition shall be available with simultaneous sample and hold. Multiple cards may be used.
- 4.6.3 The resolution of the data acquisition analog to digital converters shall be a minimum of 16-bit resolution (1 part in 65,536).
- 4.6.4 The data acquisition rate shall be up to 6 kHz on all channels.
- 4.6.5 The data acquisition routines shall include timed data collection, peak/valley data collection, maximum / minimum value collection, and level crossing data collection

#### **4.7 System Software**

- 4.7.1 The main user interface for the system shall be through a personal computer and utilize a windowed user interface. This is a requirement for fully automated testing and to minimize the chances for operator error.
- 4.7.2 The system software shall run under the Windows 11 or any latest operating system.
- 4.7.3 The system shall have software utilities to provide a display scope and data display functions on the computer screen simultaneously as a test application is running.
- 4.7.4 The system software shall provide user access levels to prevent inadvertent changes to tuning and calibration files.
- 4.7.5 The system shall provide the capability to set up simple tests in any control mode with constant amplitude cyclic or ramp waveforms. These simple tests shall also be able to acquire and store data from any defined transducer signal. In addition, counter functions shall be available from the simple test to present current and total counts as well as provide a preset count for the test. The system shall make it possible to save all the simple test settings and recall them for future use.
- 4.7.6 The setting of all machine parameters and machine status information will be available through windows on the workstation screen that can be changed to icons when not required.

4.7.7 The system software will allow more than 100 different controller configurations and user accounts to be established and stored. Each user account includes preference settings that ensure that the controller boots up to a pre-defined state whenever a user logs on to the system.

4.7.8 The system software shall optionally provide for calculated channel control or user-defined calculations. Calculations may consist of a number of arithmetic functions (such as  $+$ ,  $-$ ,  $*$ ,  $/$ ,  $\cos$ ,  $\log$ ,  $\exp$ ,  $\ln$ ,  $\text{power}$ ,  $\sin$ ,  $\tan$  and  $\text{time}$ ) and include a choice of any transducer signal to define the calculation.

4.7.9 The software shall allow user-defined detector actions such as stop at level, digital output, ramp to a specified end level, indicate, hydraulics off, system interlock or valve clamp upon activating a detector.

**4.8 A desktop computer with appropriate specifications shall be provided and integrated with the control system.**

**4.9 Application Software**

4.9.1 Application software shall be included for generating and executing tests. The application software will include the ability to control or to capture data from any installed AC or DC transducer, or externally conditioned transducer.

4.9.2 The application software shall allow the following kinds of tests to be defined and executed:

- a. Monotonic tests including tensile, compression, and flexure
- b. Block loading fatigue
- c. Constant amplitude fatigue
- d. Random fatigue using an input file to define end levels and rates
- e. Any of the above in combination.

4.9.3 The application software will allow data to be collected and stored to disk during any simple or complex test. Available data acquisition routines will include timed data collection, peak/valley data collection, maximum / minimum value collection, and level crossing data collection. The software will allow selection of the master channel to be used for peak/valley and level crossing data acquisition and the additional slave channels to be collected simultaneously. Any or all internal or externally conditioned channels can be used as the master or as the slave channel. More than one data acquisition routine can be running simultaneously.

4.9.4 The application software shall allow the operator to directly interact with the progress of the test through user definable software buttons. The operator can define software buttons with names and descriptions that when clicked with the mouse causes the test program to sequence to the next desired test sequence.

4.9.5 The application software shall allow the operator to set up command segment end levels that are from a different transducer channel than the channel being used for test control. The end level or "data limit" can be set up to terminate the current segment when the data limit is approached from below, above, or either direction. The data limits can also be used to trigger data acquisition and other definable test system processes. Data limits can be set up to cause the test system to go to any definable state upon detection.

4.9.6 The application software shall allow detection of digital inputs to the test system controller and allow digital output signals to be output from on of the control system digital output channels.

- 4.9.7 The application software shall have a detector watching for changes in peak / valley readings. The process can be used to trigger data collection or other definable test system processes.
- 4.9.8 The application software shall allow the operator to selectively acquire data periodically as defined by logarithms, linear intervals or user selected intervals. This data shall be collected in time, level crossing or peak and valley samples.
- 4.9.10 The application software shall allow a virtually unlimited number of test procedures to be set up and stored.
- 4.9.11 When used with a specific temperature controller and environmental chamber, the application software shall allow the operator to set up temperature end levels and soak times and perform specific test procedures upon arrival of stable temperature.

#### **4.10 Programming Environment**

- 4.10.1 The operator shall have the capability to program the system using a library of real time procedure calls. These procedure calls shall have the capability to be linked to common programming languages such as Microsoft Visual Basic, or National Instruments LabVIEW.
- 4.10.2 The library of procedure calls shall include a set to control function generator processes. The function generator processes to be controlled include definition of wave shape, end levels, frequency, number of cycles, elapsed cycle count, etc. The function generation calls shall also be able to output blocks of cycles.
- 4.10.3 The library of procedure calls shall include a set for data acquisition and storage including: data acquisition on level crossing, data acquisition on limit detection, peak/valley acquisition and storage, running maximum, running minimum, and data acquisition and storage on a timed basis.
- 4.10.4 The library of routines shall include a set that controls the functions of the analog readout output and digital I/O channels.

#### **5.0 Hydraulic Power Unit**

- 5.0.1 The hydraulic power unit (HPU) shall supply a nominal 60 Liters per minute flow of hydraulic fluid at 3000 psi. In addition, the HPU shall include pressure-control for operating the HPU at selectable pressures at or below 3000 psi.
- 5.0.2 The HPU shall incorporate a variable displacement, pressure compensating piston pump to ensure flow meets the required demand yet automatically reduces flow (and operating cost) when demand is low.
- 5.0.3 The pump and motor assembly should be submerged in hydraulic oil in reservoir.
- 5.0.3 The HPU must operate at no more than 60 db (A) when measured at 3 feet at full pressure, fully compensated.
- 5.0.4 The HPU must incorporate a hydraulic reservoir with a capacity of not less than 45 gallons and shall be constructed of aluminum or stainless steel to eliminate the need for plating and/or painting. This is to eliminate the risk of eventual corrosion and potential flaking paint and rust chips from contaminating the hydraulic fluid.
- 5.0.5 To ensure maximum oil quality and component life, the vendor must supply the unit filled with Mobil DTE 25 hydraulic fluid (no substitutions). The power unit must be delivered with adequate fluid to fill the unit to the maximum full level.
- 5.0.6 The reservoir must incorporate a double-sealed, valve-type drain for easy reservoir clean out.

- 5.0.7 All high-pressure fittings must be of the O-ring face-seal type of fitting to ensure good seals to prevent leaks and drips.
- 5.0.8 The motor/pump must be mounted on vibration isolators, thus reducing vibration being transmitted to the chassis.
- 5.0.9 The electric pump motor must be liquid cooled for greater life and efficiency and operate at an efficiency level of at least 85%.
- 5.0.10 The HPU must provide a lockable enclosure for the mechanical portion of the power unit to prevent nuisance and intentional tampering. This enclosure must also accommodate easy service/maintenance access.
- 5.0.11 The HPU must provide external connections for high-pressure hydraulic fluid, return hydraulic fluid, drain hydraulic fluid and both feed and discharge cooling water.
- 5.0.12 The HPU must provide a pressure gauge, a visual fluid level indicator and a visual fluid temperature indicator.
- 5.0.13 The HPU must provide a return side filtration system rated at not less than 3-micron filtration. All return and bypass hydraulic fluid must be cooled and filtered prior to return to the reservoir.
- 5.0.14 The HPU must not add measurable heat load to the room either from motor cooling air or from heat dissipation out of the reservoir. The power unit should not require any additional HVAC support systems.
- 5.0.15 The HPU must provide a water-cooling system to maintain hydraulic fluid temperatures in a temperature range from 110 to 120° F. An automatic valve, passing only enough water to maintain proper operating temperatures without exceeding 2.4 gpm water flow at 60° F water inlet temperature, shall regulate cooling water flow. The unit must have adequate cooling capacity to provide total system cooling even if inlet water temperatures are as high as 90° F inlet temperatures.
- 5.0.16 To eliminate wastewater and to minimize hydraulic fluid warm-up periods, the HPU must incorporate a separate shut-off valve to ensure all cooling water flow is halted whenever the unit is turned-off.
- 5.0.17 The HPU must provide a hydraulic fluid sampling port to ensure safe and reliable periodic oil testing.
- 5.0.18 The HPU must be able to operate at full pressure without need for a pump room or enclosure, thus eliminating space demands and cost.
- 5.0.19 The HPU must provide pockets and/or cutouts for easy transport access by forklift and/or pallet jack systems.

## **5.1 Hydraulic Power Unit Electrical/Control Description**

- 5.1.1 The motor must be rated for a full 30 kW, continuous duty at 50 Hz at 415 V, 3 Phase.
- 5.1.2 The HPU must provide “reduced-voltage starting” Wye-Delta starter connections to limit starting in-rush current. Normal power consumption not to exceed 35 Full load amps (460v/60Hz).
- 5.1.3 All electrical controls must be mounted in NEMA and UL/ETL/CE approved enclosures. The electrical controls must include:
  - a) Latching, mushroom-head Stop switch
  - b) Power-on switch
  - c) Power-on indicator light

- d) Off/low/high pressure control
- e) Fluid over-temperature interrupt and indicator light which shuts the system down should the fluid temperature exceed limits
- f) Low fluid-level interrupt and indicator light to shut the system down in a low hydraulic fluid level condition
- g) Indicator light to indicate when the hydraulic filter needs service
- h) An hour meter to track total running time of the HPU

5.1.4 To ensure operator safety, the electrical panel must include a main, lockable, electrical disconnect which also is integrated into the electrical enclosure to prevent the enclosure door from being opened while live power is "on" inside the panel.

5.1.5 The HPU must have provisions for the following add-on options:

- a) High-pressure (3000 psi) 3-micron filtration
- b) Castor/transport trolley option
- c) Modification to air-cooling
- d) Surge suppressor

## 6 System Accessories

6.1 The system shall include two complete sets of manuals including operation, maintenance and reference manuals. The manuals shall include schematic drawings of the system electrical, mechanical and hydraulic components that are detailed enough to allow operators to perform routine system maintenance.

6.2 The system shall include a recommended spare parts kit.

## 7. System Installation

7.1 Responding vendors shall include installation and system checkout of the test system and accessories at the buyer's facility. One day of on-site training on the use and operation of the system shall be included with installation.

### **Terms and Conditions:**

General terms and conditions	1	Ensure to specify the make & model of the offered product and provide the compliance sheet.
	2.	The price should be <b>F.O.R IIT Kanpur/FOB</b> .
	3.	Past 3 years, PO copies or installation certificates of the same or similar model along-with contact details of end users, need to be submitted as proof of supply.
	4.	Feedback from previous customers will be part of the technical evaluation.
	5.	The Institute reserves the right to cancel the tender at any stage without assigning any reason thereof.
OEM/OSP Authorization	:	Tender specific Manufacturer Authorization Form from the OEM/OSP is required.
Warranty	:	The warranty of the product must be 12 months.

Payment Terms	:	Payment will be released after successful installation and final acceptance.
Delivery Period	:	365 days
Experience	:	Bidders must have 3 years of experience in supplying similar types of equipment and long-term services for the same/similar model of equipment in IITs/NITs or any other Govt. Organization.
Minimum Average Annual Turnover of the Bidder (Last 3 years)	:	2 Cr
OEM Average Turnover (Last 3 years)	:	16 Cr
Performance Security	:	The Successful bidder has to submit <b>Performance Security of 3% of the contract value</b> in favour of the <b>Registrar, IIT Kanpur</b> in the form of an Account Payee Demand Draft/Fixed Deposit Receipt from a commercial bank/Bank Guarantee (including e-Bank Guarantee).
Earnest Money Deposit (EMD)	:	The bidders must furnish <b>₹8,00,000/- as EMD</b> in the form of the Demand Draft/FDR/BG in favour of the Registrar, IIT Kanpur, payable at Kanpur. The EMD is to be submitted at the address given below. Bids without EMD will be summarily rejected.
Reasonableness of Rates	:	To validate the reasonableness of the quoted rates, the bidder(s) must submit a detailed price breakdown of the items listed in the past purchase orders pertaining to the same or similar items supplied to IITs/NITs/any other educational institutions in India. This breakdown must clearly specify the price of goods/services (Ex-works), handling, packing, shipping, insurance costs, foreign bank fee (LC), agency commission (INR), etc.

**Dr. Pritam Chakraborty**

Department of Aerospace Engineering  
Indian Institute of Technology Kanpur  
Kanpur 208 016, India

**TENDER ACCEPTANCE LETTER**  
**(To be given on Company Letter Head)**

Date: \_\_\_\_\_

To,  
The Officer-in-charge  
R&D Office  
IIT Kanpur-208016

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: \_\_\_\_\_

Name of Tender / Work: - \_\_\_\_\_

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' 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 annexure(s), schedule(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. I / We do hereby declare that our Firm has not been blacklisted/ debarred/ terminated/ banned by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

**Yours Faithfully,**  
**(Signature of the Bidder, with Official Seal)**

**Certificate for Tender**  
**(To be given on Company Letter Head)**

Date: \_\_\_\_\_

To,  
The Officer-in-charge  
R&D Office  
IIT Kanpur-208016

Sub: Certificate of compliance as per Rule 144 (xi) GFR's 2017

Tender Reference No: \_\_\_\_\_

Name of Tender / Work: - \_\_\_\_\_

1."I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

2. "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all the requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

**Yours Faithfully,**  
**(Signature of the Bidder, with Official Seal)**

**Appendix - 3**

**Declaration for Local Content**

**(To be given on Company Letter Head - For tender value below Rs.10 Crores)**

**(To be given by Statutory Auditor/Cost Auditor/Cost Accountant/CA for tender value above Rs.10 Crores)**

Date: \_\_\_\_\_

To,  
The Officer-in-charge  
R&D Office  
IIT Kanpur-208016

Sub: Declaration of Local content

Tender Reference No: \_\_\_\_\_

Name of Tender / Work: - \_\_\_\_\_

1. Country of Origin of Goods being offered: \_\_\_\_\_
2. We hereby declare that items offered has \_\_\_\_% local content.
3. Details of location(s) at which the local value addition is made: \_\_\_\_\_

*“Local Content” means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.*

*“\*False declaration will be in breach of 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.”*

**Yours Faithfully,**  
**(Signature of the Bidder, with Official Seal)**

**FINANCIAL INFORMATION**

(On the letter head of CA)

Tender No: \_\_\_\_\_ dated: \_\_\_\_\_

Item Name: \_\_\_\_\_

Bidder's/Firm's Name: \_\_\_\_\_

Address and Contact No: \_\_\_\_\_  
\_\_\_\_\_

PAN No.: \_\_\_\_\_, GST No: \_\_\_\_\_

Details to be furnished duly supported by figures in the Balance Sheet/ Profit & Loss Account for the last three preceding years (Financial years) duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (copies to be attached).

SI. No.	Details	Year ending 31 <sup>st</sup> March		
		FY 2021-22	FY 2022-23	FY 2023-24
01	Gross annual turnover			
02	Profit (+)/ Loss (-)			

1. Income Tax Return
2. Audited Account of the company for last three years

This is to certify that to the best of my knowledge and belief, the aforesaid facts and figures are correct and in conformity with the books of accounts of the establishment.

Dated:

Signature of Chartered Accountant  
with seal and membership number

**Appendix-5****Bidder's Details**  
(On the letter head of the Bidder)

1	Name of the Firm/ Company		
2	Offered Product Name, Make and Model		
3	Name and Designation of Authorised Signatory		
4	Office Address of the Firm / Communication Address:		
5	Phone No/Mobile No:		
6	E-Mail ID:		
7	GST registration Number:		
8	PAN Number:		
9	Firm's Bank Account details	Bank Account No.:	
		Name of the Bank:	
		IFS Code No.:	
		Name of Branch:	
<b>Particular Details of the Bidders Representative</b>			
10	Contact Person: Mobile No:	Name of Person:	
		Designation:	
		Tele/Mobile No:	
		Email ID:	

Authorized Signatory (signature in full):

Name and Title of Signatory:

Company Rubber Stamp: