

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

TENDER REFERENCE NO.: IITK/EE/MJA/2021/01

**BID SUBMISSION END DATE-05.04.2021** 

#### **TENDER DOCUMENTS**

For

"Establishment of RF Shielded Semi-Anechoic Chamber, RF Shielded

Amplifier Room and RF Shielded Control Room for EMI/EMC Testing of

Medical and Electronic Devices"

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#### **SECTION II**

#### **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.

Name of Work	Establishment of RF Shielded Semi-Anechoic Chamber, RF Shielded Amplifier Room and RF Shielded Control Room for EMI/EMC Testing of Medical and Electronic Devices.
Date of Publishing	12.03.2021 (16.00 hrs)
Clarification Start Date and Time	12.03.2021 (16.00 hrs)
Clarification End Date and Time	17.03.2021 (16.00 hrs)
Queries (if any)	Contact information, for any queries: email: contact@emciitk.com No queries will be entertained after clarification end date and time
Bid Submission Start Date	12.03.2021 (16.00 hrs)
Last Date and time of uploading of Bids	05.04.2021 (16.00 hrs)
Estimated cost	Rs. 3,00,00,000/- (Rupees Three Crores only)
Pre- bid meeting date	19.03.2021 (16:00 hrs)
Pre-bid meeting Place	Due to Covid 19, the meeting will be conducted online. The link for the online meeting will be sent on request. The request may be sent to contact@emciitk.com
Date and time of opening of Technical Bids	06.04.2021 (16:00 hrs)
Date and time of opening of Financial Bids	Will be separately notified for Technically shortlisted/qualified bidders
Duration to complete the work	Bidder has to complete work within 01 year from date of tender allotment or within 6 months of building handover, whichever is later.

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

(The bids must be submitted online in electronic form on www.eprocure.gov.in only. No physical bids will be accepted.)

#### **SECTION III**

## (A) INSTRUCTION FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement (CPP) Portal ie<a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a>, 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.

#### 1. REGISTRATION

- (i) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a>) by clicking on the link "Online Bidder Enrolment" option available on the home page. Enrolment on the CPP Portal is free of charge.
- (ii) During enrolment/ registration, the bidders should provide the correct/ true information including valid email-id & mobile no. All the correspondence shall be made directly with the contractors/ bidders through email-id provided.
- (iii) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- (iv) For e-tendering possession of valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) is mandatory which can be obtained from SIFY /nCode/eMudra or any Certifying Authority recognized by CCA India on eToken/ SmartCard.
- (v) Upon enrolment on CPP Portal for e-tendering, the bidders shall register their valid Digital Signature Certificate with their profile.
- (vi) Only one valid DSC should be registered by a bidder. Bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse and should ensure safety of the same.
- (vii) Bidders can than log into the site through the secured login by entering their userID/ password and the password of the DSC/ eToken.

#### 2. SEARCHING FOR TENDER DOCUMENTS

- (i) 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.
- (ii) 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 / email in case there is any corrigendum issued to the tender document.
- (iii) 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:

- (i) For preparation of bid Bidders shall search the tender from published tender list available on site and download the complete tender document and should take into account corrigendum if any published before submitting their bids.
  - After selecting the tender document same shall be moved to the 'My favourite' folder of bidders account from where bidder can view all the details of the tender document.
- (ii) Bidder shall go through the tender document carefully to understand the documents required to be submitted as part of the bid. Bidders shall 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.
- (iii) Any pre-bid clarifications if required, then same may be obtained online through the tender site, or through the contact details given in the tender document.
- (iv) Bidders should get ready in advance the bid documents in the required format (PDF/xls/rar/dwf/jpg formats) to be submitted as indicated in the tender document/schedule. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- (v) Bidders can update well in advance, the documents such as experience certificates, annual report, PAN, EPF & other details etc., under "My Space/ Other Important Document" option, which can be submitted as per tender requirements. This will facilitate the bid submission process faster by reducing upload time of bids.

#### 4. SUBMISSION OF BIDS:

- (i) Bidder should log into the site well in advance for bid submission so that he/ she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay.
- (ii) Bidder should prepare the EMD as per the instructions specified in the NIT/ tender document. The details of the DD/BC/BG/ others 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.
- (iii) While submitting the bids online, the bidder shall read the terms & conditions (of CPP portal) and accepts the same to proceed further to submit their bid.
- (iv) Bidders shall select the payment option as offline to pay the EMD and enter details of the DD/BC/BG/others.
- (v) Bidder shall digitally sign and upload the required bid documents one by one as indicated in the tender document.
- (vi) Bidders shall note that the very act of using DSC for downloading the tender document and uploading their offers is deemed to be a confirmation that they have read all sections and pages of the tender document without any exception and have understood the complete tender document and are clear about the requirements of the tender document.
- (vii) Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. For the file size of less than 1 MB, the transaction uploading time will be very fast.
- (viii) If price quotes are required in XLS format, utmost care shall be taken for uploading Schedule of quantities & Prices and any change/ modification of the price schedule shall render it unfit for bidding.

Bidders shall download the Schedule of Quantities & Prices i.e. Schedule-A, in XLS format and save it without changing the name of the file. Bidder shall quote their rate in figures in the appropriate cells, thereafter, save and upload the file in financial bid cover (Price bid) only.

If the template of Schedule of Quantities & Prices file is found to be modified/corrupted in the eventuality by the bidder, the bid will be rejected and further dealt as per provision of clause no 23.0 of ITB including forfeiture of EMD.

The bidders are cautioned that uploading of financial bid elsewhere i.e. other than in cover 2 will result in rejection of the tender.

- (ix) Bidders shall submit their bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.
- (x) After the bid submission (i.e. after Clicking "Freeze Bid Submission" in the portal), the bidders shall take print out of system generated acknowledgement number and keep it as a record of evidence for online submission of bid, which will also act as an entry pass to participate in the bid opening.
- (xi) Bidders should follow the server time being displayed on bidder's dashboard at the top of the tender site, which shall be considered valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system.
- (xii) All the documents being submitted by the bidders would be encrypted using PKI (Public Key Infrastructure) 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.
- (xiii) Bidder will get all benefits under Rule 153 GFR-2017.

#### **5. ASSISTANCE TO BIDDERS:**

- (i) 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. **Contact information, for any queries:** email:contact@emciitk.com.
- (i) 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. The 24 x 7 Help Desk Number 0120-4200462, 0120-4001002 and 0120-4001005. The helpdesk email id is <a href="mailto:support-eproc@nic.in">support-eproc@nic.in</a>

#### (B)

#### **INSTRUCTION FOR e-PROCUREMENT**

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

- **a.** The detailed tender documents may be downloaded from <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a> till the last date of submission of tender. The Tender may be submitted online through CPP Portal <a href="http://eprocure.gov.in/eprocure/app">http://eprocure.gov.in/eprocure/app</a>
- **b.** 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 ".XIs" should be upload online in cover-2

#### 2. SUBMISSION OF THE BID:

All interested eligible bidders are requested to submit their bids online on CPP Portal: <a href="http://eprocure.gov.in/eprocure/appas">http://eprocure.gov.in/eprocure/appas</a> per the criteria given in this document:

- a. Technical Bid should be upload online in cover-1.
- b. Financial Bid should be upload online in cover-2

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

#### 3. TECHNICAL BID:

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:-
  - (i) Bank details.
  - (ii) a) List of organizations (with contact information) within India and abroad, where a similar type of large EMI/ EMC test facility has been established by the bidder in the last 5 years.
    - b) Work completion Certificate provided by the respective organizations.
  - (iii) Certificate of GST (GSTIN of Indian Agent in case of Import Shipments).
  - (iv) Specifications or brochures of each item and complete list of equipment/ item that will be used in establishing this EMI/EMC test facility and Compliance sheet against the specification mentioned in technical bid
  - (v) Brief summary of annual report, audited balance sheet, and profit and loss account for preceding three years from the date of tender opening.
  - (vi) Tender acceptance letter on Appendix 1-3
  - (vii) Declaration for local content, Country of Origin of goods and Bid Security on Appendix 4-5.
    - a. For The tender value upto Rs. 10 Crores Self-Certificate for local content from the bidder.
    - b. For the tender value above Rs. 10 Crores Certificate for local content from Statutory Auditor/Cost Auditor/Cost Accountant/CA.
- b. For Import Shipments Shipping Terms Ex-Works/FOB are preferred.

## NOTE - no indication of the rates/amounts be made in any of the documents submitted with the TC-BID.

#### 4. FINANCIAL BID

- **a.** The currency of all quoted rates shall be Indian Rupees. All payment shall be made in Indian Rupees.
- **b.** The final tender will however be awarded to the bidder quoting the lowest total price, which is the sum of prices of all the items listed in the BOQ excel file.
- **c.** The price quoted shall include the warranty and calibration charges as specified in the technical bid.
- d. 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 ".XIs" format i.e. Price Bid Excel sheet attached as '.XIs' 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.
- **e.** 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:

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

#### 6. BID VALIDITY

- **a.** 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.
- **b.** A bid valid for a shorter period shall be declared as non-responsive.
- c. 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:

- a. No Bid shall be modified, substituted or withdrawn by the Bidder after the Bid's due Date.
- **b.** 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:

The bid submitted shall become invalid and tender fee shall not be refunded if:-

- a. The bidder is found ineligible.
- b. The bid does not meet the selection criteria mentioned in clause 9 of this section.
- c. The bidder does not upload all the documents as stipulated in the bid document.

#### 9. SELECTION CRITERIA:

#### Phase-I: Technical Evaluation & Sample Approval

Technical evaluation will be done on the basis of information given by technical bid submitted by the bidders. Bid containing partial, incomplete, uncleared and superfluous and unwanted information will be summarily rejected.

Technical declaration must be supported with relevant document. Discrepancy in relevant supporting document and technical compliance sheet shall lead to rejection of technical bids.

#### **Sample Approval:**

Bidders should have to display their samples (if asked) at the Central Store & Purchase Section of IIT Kanpur. Non-display of sample shall be considered as non-responsive technical bids.

#### Phase-II

- a. Financial bids of technically qualified and approve samples 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. Late Delivery:

Delivery must be completed within the period mentioned in tender document from the date of receipt of the order. Penalty @ 1% per week or part thereof subject to a maximum of 10% of the delivery price will be deducted from the balance payment if supply is not completed within stipulated period.

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

- I. 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).
- II. "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.

- **III.** "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
- IV. The beneficial owner for the purpose of (iii) above will be as under:
  - 1. 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-**

- **a.** "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company.
- **b.** "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.
- 2. 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;
- 3. 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;
- **4.** 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.
- **5.** 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.
- **V.** An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- VI. 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 .

**12.** 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-ul 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.

#### (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:

- a. "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;
- **b.** "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;
- c. "Day" means any calendar day;
- **d.** "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;
- e. "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, labor 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;
- **f.** "Goods" means all of the goods to be supplied to the IITK by the Contractor under the Contract;
- g. "IITK" means the Indian Institute of Technology Kanpur;
- h. "IITK Purchase Order" means the IITK's official Purchase Order document;
  - (i) "Party" means the IITK or the Contractor and "Parties" means the IITK and the Contractor; and
  - (ii) "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

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.

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

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 provide a sample and undertake, certify, and guarantee that all Goods delivered shall be of the same quality and characteristics as the sample(s) provided.

#### 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 or samples, 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 and/or samples. Nothing in this clause shall in any way release the Contractor from any warranty or other obligations under the Contract.

#### 7. SHIPPING AND INSURANCE

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

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

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.

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

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 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

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 of time 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**

If, in accordance with clause 15, the IITK imposes penalties on the Contractor, such penalties shall amount to One percent (1%) 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

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

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

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

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

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

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**

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

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 shall have full powers 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

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**

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

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**

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

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.

#### **SECTION IV**

#### **Tender document**

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

Enquiry date: March 12, 2021 Enquiry No: IITK/EE/MJA/2021/01

Online bids are invited to "Establishment of RF Shielded Semi-Anechoic Chamber, RF Shielded Amplifier Room and RF Shielded Control Room for EMI/EMC Testing of Medical and Electronic Devices". The detailed specifications are given in Section V.

Bidder shall be responsible for design, supply, construction, testing, integration, installation and commissioning of the RF Shielded semi-anechoic chamber, RF Shielded amplifier room, RF Shielded control room conforming to the standards specified below which can then get accredited by appropriate agencies.

The facility including the test equipment should provide the capability to test products as per the following standards (latest versions): IEC 60601-1-2, IEC 61000-4-3, IEC 61000-4-6, CISPR 11, 13, 14, 15, 22, 32, CISPR 16-1-1, CISPR 16-1-4, CISPR 16-1-2 and FCC standards, as applicable.

The compliance should be in the form of YES or NO. Compliance declaration in any other form will not be accepted. The bidder shall write the specifications in each row in addition to YES or NO in the following table. The specification of each line item should exclusively be written in the table, and mere referring to technical proposal/brochure is not adequate.

#### **SECTION V**

## TECHNICAL SPECIFICATION OF RF SHIELDED SEMI-ANECHOIC CHAMBER, RF SHIELDED AMPLIFIER ROOM, AND RF SHIELDED CONTROL ROOM

S. No	Parameter	Required Specification	Bidder's	Compliance
_			specification	(Yes or No)
1.		MI-ANECHOIC CHAMBER	· ·	
1.1		Anechoic Shielded Chamber (Modular Pan Type)		
1.1.1	Type of Chamber	3-meter EMC Semi Anechoic S	hielded Chamb	er (Modular
1.1.2	Standards	Pan Type) Standards:		
1.1.2	Standards	IEC 60601-1-2 Edition 4,		
		<i>'</i>		
		2014-02, CISPR 11, CISPR		
		13, CISPR 14, CISPR 15,		
		CISPR 22, CISPR 32, CISPR		
		16-1-1, CISPR 16-1-4, CISPR		
		16-1-2, ANSI C63.4, FCC		
		Part-18, EN 50147-1		
		Immunity: IEC 61000-4-3,		
		IEC 61000-4-6		
1.1.3	Equipment to be	Medical devices, IT		
	tested	equipment, and other		
		electronic devices, as per		
1 1 4	D.C.	standards.		
1.1.4	Measurement	3 m; For both immunity and emission tests		
1.1.5	distance Quiet zone	For radiated immunity as per		
1.1.5	Quiet zone	standard IEC 61000-4-3,		
		CUBICAL:		
		1.5 m X 1.5 m X 1.5 m		
		For radiated emission as per		
		CISPR 16-1-4,		
		CYLINDRICAL:		
		Diameter: 2 m, Height: 2 m		
1.1.6	Frequency	Radiated immunity:		
	range	80 MHz – 6 GHz		
		Radiated emission:		
1.1.7	Power	30 MHz – 18 GHz  Power and utilities for the		
1.1./		Equipment Under Test		
	and utilities for the	(EUT):		
	Equipment Under	Maximum power supply		
	Test (EUT)	rating EUT:		
		AC: 230 V, 20 A, 50 Hz, 1 Ø		
		and 440 V, 50 A, 50 Hz, 3 Ø.		

		Gas supply should provide the	
		provision for medical gas	
		(e.g., O2, N2, N2O, and Air)	
		inside the chamber. Four pipes	
		of 12 mm diameter.	
		Provision for taking in and	
		bringing out liquid. The liquid	
		will pass through a tube which	
		passes through the specified	
		pipe of diameter 12mm.	
		Connection panel is required.	
1.1.8	Chamber	<b>Shielding Effectiveness (SE):</b>	
	Performance		
		Magnetic Field:	
	Criteria		
		$10 \text{ kHz} - 100 \text{ kHz} \ge 60 - 80$	
		dB	
		$100 \text{ kHz} - 1 \text{ MHz} \ge 80 - 100$	
		dB	
		1 MHz-30 MHz: $\geq$ 100 dB	
		Electric Field: -	
		10 kHz -100 kHz: 50 -70 dB	
		1 MHz- 5 MHz: $\geq$ 90 -100	
		dB	
		5 MHz -100 MHz: ≥ 100 dB	
		<u> </u>	
		Plane wave field:	
		$10 \text{ MHz} - 1 \text{ GHz} \ge 100 \text{ dB}$	
		Microwave Field:	
		$1 \text{ GHz} - 40 \text{ GHz} \ge 100 \text{ dB}$	
		As per EN 50147-1 and IEEE	
		299	
		Normalized	
		Site Attenuation (NSA):	
		$NSA = \pm 4.0 \text{ dB}$	
		It should be applied for the	
		full span as per standard	
		CISPR 16-1-4	
		and as per ANSI C63.4.	
		Site Voltage Standing Wave	
		Ratio (SVSWR):	
		< 6 dB for 1 GHz – 18 GHz,	
		as per CISPR 16-1-4, ANSI C	
		63.4	
		Field Uniformity (FU):	
		Radiated Susceptibility Test:	
		Field uniformity as per IEC	
		* *	
		61000-4-3 as per Table -2	
		Frequency Range 80 MHz to	
		1 GHz	
		Test Level: 30 V/m (54 V/m	
		CW), Test Distance: 3 m,	

Window Size: 1.5 m x 1.5 m, 16 Points Frequency Range: 1 GHz to 6 **GHz** Test Level: 30 V/m (54 V/m CW), Test Distance: 1 m, Window Size: 0.5 m x 0.5 m, 4 Points 0 to +6 dB at 80 MHz -6GHz (75% points in 16 points) as per IEC 61000-4-3 As per IEC 61000-4-3, the analytical result should be provided conforming to the given standards EN 50147-1, 2, IEEE 299, ANSI 63.4, CISPR 16-1-4, IEC 61000-4-3.

Table 2 – Requirements for uniform field area for application of full illumination, partial illumination and independent windows method

Frequency range	Requirements of UFA size and calibration when the EUT fits completely within UFA (Full Illumination, the preferred method)	Requirements of UFA size and calibration when the EUT does not fit completely within UFA (Partial Illumination and Independent Windows, the alternative methods)
Less than 1 GHz	Minimum UFA size 0,5 m × 0,5 m	PARTIAL ILLUMINATION
	UFA size in 0,5 m grid size steps (e.g., 0,5 m $\times$ 0,5 m; 0,5 m $\times$ 1,0 m; 1,0 m $\times$ 1,0 m; etc)  Calibration in 0,5 m $\times$ 0,5 m grid steps	Minimum UFA size 1,5 m $\times$ 1,5 m UFA size in 0,5 m grid size steps (e.g., 1,5 m $\times$ 1,5 m; 1,5 m $\times$ 2,0 m; 2,0 m $\times$ 2,0 m; etc)
	75 % of calibration points within specifications if UFA is larger than 0,5 m $\times$ 0,5 m. 100 % (all 4 points) must be in specifications for 0,5 m $\times$ 0,5 m UFA.	Calibration in 0,5 m × 0,5 m grid steps  75 % of calibration points within specifications

Frequency range	Requirements of UFA size and calibration when the EUT fits completely within UFA (Full Illumination, the preferred method)	Requirements of UFA size and calibration when the EUT does not fit completely within UFA (Partial Illumination and Independent Windows, the alternative methods)
Greater than 1 GHz	Minimum UFA size 0,5 m × 0,5 m	INDEPENDENT WINDOWS METHOD
	UFA size in 0,5 m grid size steps (e.g., 0,5 m × 0,5 m; 0,5 m × 1,0 m;	0,5 m × 0,5 m window (See Annex H)
	1,0 m × 1,0 m; etc)	PARTIAL ILLUMINATION
	Calibration in 0,5 m × 0,5 m grid steps	1,5 m × 1,5 m and larger size windows in 0,5 m increments (e.g., 1,5 m × 2,0 m;
	75 % of calibration points within specifications if UFA is larger than 0,5 m	2,0 m × 2,0 m; etc)
	$\times$ 0,5 m. 100 % (all 4 points) must be in specifications for 0,5 m $\times$ 0,5 m UFA.	Calibration in 0,5 m × 0,5 m grid steps
		75 % of calibration points within specifications if UFA is larger than 0,5 m $\times$ 0,5 m. 100 % (all 4 points) must be ir specifications for 0,5 m $\times$ 0,5 m UFA.

1.1.9	Dimensions	Dimensions: Minimum	
1.1.9	Difficusions		
		internal dimension:(Absorber	
		tip to tip /internal clear	
		dimension)	
		8 m x 5 m x 5m (L X W X H)	
		Building site is an existing	
		laboratory.	
		Floor plan is given in	
		Appendix 6.	
		Suggested modifications to	
		the building for optimum	
		placement of the chamber	
		should be mentioned by the	
		bidder. The suggested	
		modifications to the building	
		will be carried out by IIT	
		Kanpur.	
	Shielding Material	Pan type Shielding panels	
	for side walls and	with ferrite tiles on all side	
	ceiling	walls and ceiling.	
		Fully dismantlable and	
		transferable.	
		Supporting steel structure for	
		the chamber	
		Panels to be made of single	
		sheet of steel (at least 2 mm	
		thick) with environmental	
		coating (e.g. zinc)	
		Proper RF shielding gasket to	
		be used between panels	
1.1.11	Hybrid pyramidal	Hybrid pyramidal absorbers	
	absorbers	Full coverage non-drooping	
		with polystyrene/polyurethane	
		foam/latest thin film	
		technology absorbers	
		• High Field withstand	
		capacity (at least 200 V/m)	
		• Fire retardant as per	
		UL/DIN/IEC as per DIN	
		4102	
		<ul> <li>Removable and replaceable</li> </ul>	
		• Clean room compatible	
		absorbers according to ISO	
		14644-1 class 5	
		/ class 100000	
		• RF Testing as per EN	
		13501-1 and IEEE1128	
1.1.12	Floor absorbers	Movable type partially	
		covering absorbers	

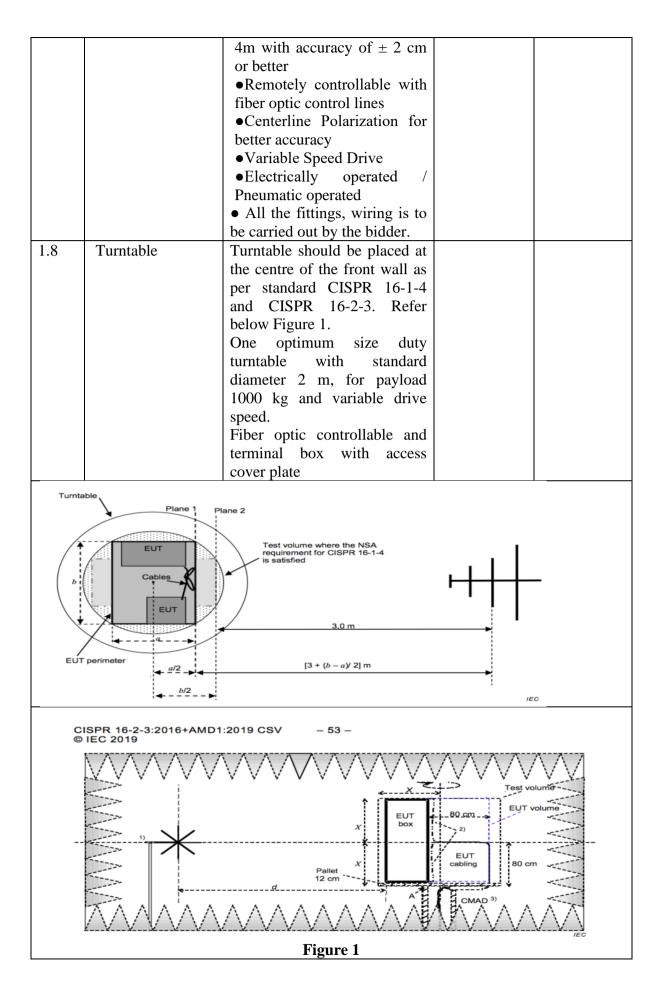
		Immunity togting byheid	
		Immunity testing – hybrid	
		absorber with ferrite 16 pieces	
		of 2 ft x 2 ft absorbers on	
		sixteen floor carts	
		Emission testing – 28 pieces	
		of 2 ft x 2 ft removable	
		pyramidal absorber placed in	
		front of the quiet zone and	
		three rolling nonconductive	
		platforms with integrated	
		casters.	
1.1.13	Floor and ground	Raised floor of required	
	plane	height with load bearing	
		capacity of at least 1000	
		kg/m <sup>2</sup> with floor entry panels	
		included.	
		• Anti-moisture mat should	
		also be included under the	
		shielded floor.	
		• Multi sheeted mat located	
		inside the main door and it	
		has the same width as that of	
		the shielded door.	
		Suitable below floor clearance	
		for turntable installation	
1.1.14	Cable ducting	Provide a suitable ducting to	
	C	run RF and Power cables	
		separately below the floor	
1.1.15	Ventilation	Honeycomb Waveguide air	
		vents with cut off frequency	
		of 18 GHz (100 dB shielding	
		Effectiveness at 18 GHz)	
		Size and quantity are to be	
		recommended by the bidder	
		for proper AC tonnage and	
		heat load to maintain the	
		required environmental	
		conditions inside the chamber.	
1.1.16	Lighting	Lighting Sign board can be	
1.1.10	Ligiting	fluorescent illumination EMI-	
		Free LED lights (minimum 5	
		in number) of (60 W-100 W)	
		and with electrical distribution	
		and filtering. Capable of	
		withstanding the produced	
		field strength.	

		Test in Progress Lights over	
		SAC door and CR door;	
		EMI Free Emergency lighting	
		system with rechargeable	
		battery backup to be provided	
		above the exit door. Signal	
		lights over SAC, CR and AR	
		doors. Ladder provided for	
		lighting maintenance. All	
		lighting, Indicator lights and	
		Safety Signs compliant as per	
		standard IEC 60601-1	
1.1.17	Ground stud	Threaded ground stud along	
		with earth cable. Dedicated	
		earth pit is the responsibility	
		of the bidder.	
1.1.18	Connector panels	Appropriate size panels	
	and penetration	containing the following	
	between SAC and	connectors with RF shielded	
	amplifier room	connector caps N type(F),	
	<b></b>	SMA, 7/16 DIN connectors	
		Quantity: 4 each	
1.1.19	Connector panels	Appropriate size panels	
1.1.17	and penetration on	containing the following	
	SAC between SAC	connectors with RF shielded	
	and control room	connector caps.	
		BNC (F), SMA (F), 7/16 DIN	
		(F) (Quantity- 4 each)	
		N type(F)- Quantity 6	
		Fiber optic (FO) cables,	
		connectors, adaptors: as per	
		requirement 1 ½ pipe	
		penetration with cap	
		6-way Fiber optic feed	
		through – 1 number.	
		RS232, RS485, USB, LAN	
		1Gbps shielded optical	
		converter - 1 set each	
1.1.20	Access hatches	Essential number of access	
1.1.20		hatches on raised ground floor	
		and near turntable and antenna	
		mast with Power outlets and	
		RF Connectors	
1.1.21	Electrical	Power distribution box with	
	Distribution panel	MCB/MCCB and RCCB – 1	
	whom paner	Number or	
		as per requirement	
		•Light ON/OFF switches as	
		per requirement.	
		•ON/OFF control switches	
L			

		for turntable and antenna mast EUT outlets 32 A - 3 phase with neutral and single phase	
1.1.22	Chamber design	Chamber design will be suggested by the bidder and work may be started after approval from Indian Institute of Technology Kanpur (IITK). If IITK suggests any changes in the chamber design such as, location of the chamber, control room, amplifier room, doors, etc., they will be carried out by the bidder at no extra cost.	
1.2	RF Shielded Door (Main)	<ul> <li>2.1 m (W) x 2.1 m (H) (clear opening size), double leaf pneumatically operated</li> <li>"Test in progress" Display with Interlock Switch.</li> <li>Easy to operate, light weight with standard sealing.</li> <li>Should be able to shut off the RF in the event of door being opened during Immunity Testing</li> <li>Should provide door maintenance kit</li> <li>Should provide moving ramp</li> </ul>	
		• Provide compressor in case of pneumatic door	

1.3	EUT Monitoring system	Two EMI-shielded full HD digital cameras one mounted on the chamber wall and other one on a tripod having 30x optical zoom and 10x digital zoom with minimum 330° pan tilt, built-in Audio system.  One rack control should be provided to select cameras for various types of controls: -joystick control, Pan/tilt control and audio Monitoring (built-in speaker);  Video Recording capability with 1TB hard disk and one LED monitor of 42" min.  Audio monitoring / Intercom system between SAC and Control Room and Control Room and AR.	
1.4	Reference radiator	Frequency 9 kHz – 18 GHz  Frequency Spacing 1 MHz, 5 MHz, 10 MHz  Output level, 50 Ω 90 dBμV @ 10 MHz, 60 dBμV @ 6 GHz  Frequency stability < 1 ppm (0°C to +50°C)  RF- output connector N, female, 50 Ω  Power supply Battery – rechargeable, changeable  Antennas for radiation Suitable Physically small antennas from 9 kHz – 18 GHz.	
1.5	RF Filters	RF Filters Power line Filters as per CISPR17	

	1	T	-
		Frequency: 14 kHz -18 GHz, (100 dB insertion loss)	
		For EUT - 1 Ø, 230 V AC, 50 Hz, 20 A, 2 lines (1 Ø + neutral) - 2 number - 3 Ø, 4 Line, 440 V, 50 Hz, 50 A – 2 number - DC, 2 line, 300 V, 25A – 2 number Filters are to be provided as	
		per requirement of Lighting, Antenna mast, Turntable, Fire detection system, CCTV, Intercom, VOIP phone and Ethernet.	
1.6	Device controller, software, and PC	The device controller, being operated using software residing in the PC located at the control room, should be able to control the antenna mast and turntable.  This software should also be compatible with other commercially available EMI/EMC measurement software.  Provision should be there to control the devices manually.  The configuration of the PC is as follows:  Desktop PC- Quantity: 02 i9 10th generation, 24" LED monitor (full HD), 16 GB RAM, 1 TB HDD,	
1.7	Antenna mast	Windows 10 Professional  Boresight Antenna Mast  The mast should have the capability to orient the antenna boresight towards EUT during vertical	
		movement of the antenna.  •Provision to control a Tilt angle automatically (compliant as per CISPR 16-1-4 Boresight)  •Scanning range from 1m to	



2.	RF SHIELDED CO	ONTROL ROOM (CR)		
2.1	Modular Pan Type Shielded Control Room.			
2.1.1	Type of Chamber	Modular Pan Type Shielded		
	and Dimension	Control Room.		
		Hot galvanised sheet steel /		
		conductive material		
		Zinc galvanisation on every		
		side of the shielding to resist		
		corrosion.		
		Corners of the shielded room		
		should be secured properly		
		Aesthetically pleasing floor		
		tiles applied with adhesive		
		over the exposed steel surface		
		Suitable size 4.0 m (L) x 7.0		
		m (W) x 3.0 m (H)		
2.1.2	Connector panels	Appropriate size panels		
	and Penetration	containing the following		
	panels between	connectors with RF shielded		
	Control Room	connector caps.		
	and outside	BNC(F), SMA(F), N type(F)		
		Quantity: 4 each		
		Fiber optic (FO) cables,		
		connectors, adaptors: as per		
		requirement		
		1½" diameter pipe penetration		
2.1.2	C 1	with cap		
2.1.3	Connector panels	Appropriate size panels		
	and Penetration	containing the following		
	panels between Control Room	connectors with RF shielded		
		connector caps.		
	and Amplifier Room	7/16 DIN (F) Quantity: 2		
	Room	N type (F) Quantity: 6		
		Fiber optic (FO) cables,		
		connectors, adaptors: as per		
		requirement		
		1½" diameter pipe penetration		
		with cap		
2.1.4	Lighting	LED light as per requirement		
		Emergency lighting system		
		the CR door.		
2.1.5	Ventilation			
_		= -		
2.1.6	Electrical	Electrical Distribution panel		
	Distribution panel	for CR		
	Electrical	backup to be provided above the CR door. Test in progress and signal lights over CR door Size and quantity are to be recommended by the bidder Electrical Distribution panel		

	f CD	D	
	for CR	Power distribution box with	
		MCB/MCCB or RCCB – 1	
		Number or as per requirement.	
		Power points (1 Ø, 230 V -	
		5/15 A) with switch - as	
		decided by the bidder for the	
		instruments supplied by the	
		bidder.	
		•Light ON/OFF switches as	
		per requirement.	
		●Power points (1 Ø, 230 V -	
		5/15 A) switch along the wall	
		of the CR.	
		Power points (1 Ø, 230 V -	
		5/15 A) with switch - as	
		decided by the bidder for the	
		instruments supplied by the	
		bidder.	
		Quantity: Total Number	
		(approx.) for SAC, CR, AR	
		1 Ø, 230 V -5/15 A with	
		switch - 20 Number (approx.)	
		as per standard IEC 60601-1	
		•3 Ø outlets at specific	
		locations	
2.2	RF shielded Door	RF shielded Door between	
	between Outside	Outside and CR:	
	and CR	Size: 1.2 m (W) x 2.1 m (H)	
		(clear opening size)	
		Manual door, single leaf,	
		"Test in progress" Display	
2.3	Power line filters	RF Power line RF Power line	
		Filters with	
		14 kHz to 18 GHz (100 dB	
		insertion loss)	
		• For Instrumentation,	
		Lighting and other	
		accessories: 3 Ø, 4 Line,	
		440 V, 50 Hz, 25 A – 1	
		Number.	
		• Shielded optical converter	
		for Ethernet - 1 each	
2.4	EUT Table	EUT Table:	
		Size: Length: 2 m; Width: 1	
		m; Height: 0.8 m	
		Styrofoam /PVC Table as per	
		standard IEC 61000-4-3 and	
		CISPR 11	
	Î.	1	j l

3.	RF SHIELDED AN	MPLIFIER ROOM (AR)		
3.1	Modular Pan Type Shielded Amplifier Room.			
3.1.1	Type of Chamber	Type of Chamber and		
	and Dimension	Dimension		
		Size: 4.0 m (L) x 2.0 m (W) x		
		3.0 m (H) minimum		
		Modular Pan Type Shielded		
		Amplifier Room.		
		• Hot galvanised sheet steel /		
		conductive		
		• Zinc material galvanisation		
		on every side of the shielding		
		to resist		
		corrosion.		
		• Corners of the shielded		
		room should be secured		
		properly		
		Aesthetically pleasing floor		
		tiles applied with adhesive		
		over		
		the exposed steel surface		
3.1.2	Ventilation	Size and quantity are to be		
		recommended by the bidder		
3.1.3	Lighting	Proper EMI free LED lighting		
		to be provided.		
3.1.4	Electrical	Electrical Distribution panel		
	Distribution panel	for AR		
	for AR	Power distribution box with		
		MCCB, and RCCB – 1		
		Number.		
		• Light ON/OFF switches as		
		per requirement.		
		ON/OFF switches for		
		instruments with at least 3		
		extra for future.		
3.1.5	Connector panels	Connector panels and		
	and penetration on	penetration on amplifier room		
	amplifier room	Appropriate size panels		
		containing the following		
		connectors with RF		
		shielded connector caps.		
		• BNC (F), SMA (F), 7/16		
		DIN (F) (Quantity- 4 each)		
		• N type(F)- Quantity 6		
		• 1½" diameter pipe		
		penetration with cap		
		• 6-way Fiber optic feed		
		through – 1 Number		
		• Fiber optic (FO) cables,		
		ST penetration for FO cables		

	_	1		
		– 4 Number		
		FSMA penetration for FO		
		cables – 4 Number		
		Adaptors : 6 Number		
		(Approx) bidder can decide as		
		per		
		requirement		
		• RS232-1 Number		
		RS485-1 Number		
		• Connector panel: Required		
		FO shielded		
3.2	RF shielded Door	RF shielded Door between		
	between Outside	Outside and AR		
	and AR	Manual, single leaf door,		
		Size -: 1.2 m (W) x 2.1 m (H)		
		(clear opening size)		
		(Treat spenning size)		
3.3	Power line filters	Power line filters		
		14 kHz-18 GHz (100 dB		
		insertion loss)		
		• For Instrumentation /		
		Lighting and Others: 3 Ø - 4		
		Line, 440 V,		
		50 Hz, 50 A – 1 number		
		30 112, 30 11 11 11 11 11 11 11		
4.	COMMON MODU	JLES AND ACCESSORIES	<u>l</u>	
<b>4.</b> 4.1	COMMON MODU Fire detection and			
		Complete Fire detection		
	Fire detection and fire	Complete Fire detection system for SAC, CR, and AR		
	Fire detection and fire extinguishing	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR		
	Fire detection and fire extinguishing system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors		
	Fire detection and fire extinguishing	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and		
	Fire detection and fire extinguishing system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut		
	Fire detection and fire extinguishing system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off.		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers)		
	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers)		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR) Air conditioning system to be		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international environment guidelines.		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international environment guidelines.  Capacity: 15 TR or above		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international environment guidelines.  Capacity: 15 TR or above  Temperature: 24 ± 2 °C		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international environment guidelines.  Capacity: 15 TR or above  Temperature: 24 ± 2 °C Humidity: 50% ± 5%		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international environment guidelines.  Capacity: 15 TR or above  Temperature: 24 ± 2 °C Humidity: 50% ± 5% or as per the requirement of		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international environment guidelines.  Capacity: 15 TR or above  Temperature: 24 ± 2 °C Humidity: 50% ± 5% or as per the requirement of the instrument and chamber,		
4.1	Fire detection and fire extinguishing system for SAC, CR, AR  Air conditioning system	Complete Fire detection system for SAC, CR, and AR Fire extinguishers outside CR and AR doors Provision for hooter and Manual/Automatic power shut off. CO <sub>2</sub> cylinders (2 numbers) Air conditioning system (SAC, CR, AR)  Air conditioning system to be installed as per the latest international environment guidelines.  Capacity: 15 TR or above  Temperature: 24 ± 2 °C Humidity: 50% ± 5% or as per the requirement of		

	T	Γ .		
		account the heat load inside		
		the various		
		rooms considering rating of RF power amplifiers, filter		
		rating, lighting system, typical		
		EUT requirement and all		
		measurement systems, etc.		
		measurement systems, etc.		
		Ductable packaged A/C unit		
		from reputed brands to be		
		used.		
		Bidders should advise the		
		recommended tonnage for AC		
		by considering the		
		temperature and humidity		
		factors. System shall provide		
		effective humidity control		
		Duct noise should be within		
		the required safe level. The duct should have adequate		
		internal acoustic lining and		
		thermal insulation. Return		
		duct to package A/C unit		
		should be provided.		
		Adequate arrangement for		
		treated fresh air inside the		
		chamber to be considered in		
		the design of air conditioning		
		systems.		
4.3	Audio Intercom	The bidder has to provide		
	System	audio intercom system		
		between SAC and CR and		
4.4	Accessories	between and CR Any other accessory shall be		
'''	11000001100	included in the offer and		
		optional accessories shall be		
		quoted separately.		
		- • •		
5.	WARRANTY			
5.1	Standard Warranty	D ( 10	<u> </u>	
5.1.1	Warranty for SAC	Performance: 10 years		
		minimum  Material workmanship: 10		
		Material workmanship: 10 years minimum Shielding		
		effectiveness:		
		10 years minimum		
		Absorber reflectivity: 10 years		
		minimum		
5.1.2	Warranty for	Material workmanship:		

	shielded amplifier	10 years minimum	
	and control rooms		
5.1.3	Warranty for other	1-year standard warranty	
	accessories		
	including		
	turntable, antenna		
	mast, device		
	controller,		
	computers,		
	Ventilation, fire		
	safety system,		
	filters, cameras, doors, etc.		
5.2	Additional Warranty	,	
5.2.1	Warranty for other	2 years additional warranty	
3.2.1	accessories	2 years additional warranty	
	including		
	turntable, antenna		
	mast, device		
	controller,		
	computers,		
	Ventilation, fire		
	safety system,		
	filters, cameras,		
	doors, etc.		
	l		
6.	INSTALLATION A	AND COMMISSIONING	
<b>6.</b> 6.1	Installation,	The bidder will be responsible	
		The bidder will be responsible for the installation and	
	Installation,	The bidder will be responsible for the installation and commissioning of the	
	Installation,	The bidder will be responsible for the installation and	
6.1	Installation, Commissioning	The bidder will be responsible for the installation and commissioning of the chamber.	
6.1 7.	Installation, Commissioning OTHER SPECIFIC	The bidder will be responsible for the installation and commissioning of the chamber.	
6.1	Installation, Commissioning	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best	
6.1 7.	Installation, Commissioning OTHER SPECIFIC	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the	
6.1 7.	Installation, Commissioning OTHER SPECIFIC	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the	
6.1 7.	Installation, Commissioning  OTHER SPECIFIC Chamber Design	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval	
7. 7.1	Installation, Commissioning OTHER SPECIFIC	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR  For SAC, CR and AR: IITK	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR  For SAC, CR and AR: IITK will provide the building	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR  For SAC, CR and AR: IITK will provide the building space required for the	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR  For SAC, CR and AR: IITK will provide the building space required for the chamber with a rough concrete platform.	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR  For SAC, CR and AR: IITK will provide the building space required for the chamber with a rough concrete platform.  All necessary chasing,	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR: IITK will provide the building space required for the chamber with a rough concrete platform.  All necessary chasing, drilling and allied works for	
7. 7.1	Installation, Commissioning  OTHER SPECIFIC Chamber Design  Interior Finishing for CR, and AR	The bidder will be responsible for the installation and commissioning of the chamber.  CATIONS  Bidder should provide best possible design along with the 3-D drawing and layout of the chamber for approval  Should provide proper interior finishing for CR, and AR  For SAC, CR and AR: IITK will provide the building space required for the chamber with a rough concrete platform.  All necessary chasing,	

		carried out by the bidder.	
		·	
		The appropriate flooring works around the chamber	
		should also be carried out by	
		the bidder	
7.4	Electrical Wiring	Bidder shall provide and carry	
	(SAC, CR, and AR)	out the wiring for lighting, CCTV system, air	
	Cit, and Tit)	conditioning system.	
		TYTTYZ 'II 'I I	
		IITK will provide the required power distribution board	
		nearer to the chamber.	
		All the wiring from board to chamber, control room,	
		amplifier room is the	
		responsibility of the bidder.	
7.5	Data sheets	The bidder shall provide all	
		the details regarding country of manufacturing, model and	
		year of manufacturing of all	
		the instruments/materials	
		Datasheets, technical	
		literature, operational manuals and brochures should be	
		enclosed with the offer	
7.6	Experience	The bidder should have at	
		least 5 years of experience in the installation of similar	
		types of EMI/EMC test	
		facility in various	
		organizations.	
		OEMs of all the products	
		including test equipment,	
		ferrite-based absorbers,	
		accessories etc. quoted by the bidder to establish this facility	
		should also have at least 5	
		years of experience in the	
		supply of such products to various organizations.	
		various organizations.	
		The bidder should have	
		completed a similar work with a value of at least Rs. 2	
		Crores.	

		The hidder should provide a	
		The bidder should provide a	
		list of organizations (with	
		contact information) within	
		India and abroad, where such	
		a facility has been established	
		by the bidder in the last 5	
		years. This should be	
		supported with relevant	
		documents.	
7.7	Chamber	The performance testing of	
	performance	the chamber shall be carried	
	testing by the	out by the bidder using the	
	bidder	procedure established in	
	biddei	1 =	
		accordance with the latest	
		edition of the test standard	
		(EN 50147-1, 2, IEEE 299,	
		ANSI 63.4, CISPR 16-1-4,	
		IEC 61000-4-3).	
		The bidder would be	
		responsible to provide the	
		required calibrated measuring	
		instruments including	
		antennas and other accessories	
		etc. for the evaluation of the	
		performance of the chamber.	
		performance of the chamber.	
		The validation of the chamber	
		performance would be	
		independently carried out by	
		, -	
		IIT Kanpur using an external	
		ISO/IEC 17025 accredited	
		agency. The bidder should	
		ensure that the chamber	
		conforms to the standards.	
7.8	Safety	The test facility shall conform	
		to the safety standards	
		Bidder shall provide	
		appropriate signages	
		indicating RF hazards, shock	
		hazards, hazardous smoke, gas	
		etc. and also display boards	
		showing instructions /	
		precautions to be taken during	
		testing and in case of	
		emergency/accident.	
		_ •	
		Fire exits in the facility should	
7.0	Laca	be clearly marked.	
7.9	Logo	Both FACILITY and IITK	

		logos to be fixed on the wall.	
7.10	Documentation	Technical, safety, operational,	
		maintenance and service	
		manuals should be provided in	
		hard copy along with the	
		electronic versions.	

## **SECTION VI**

## **Additional Terms and Conditions:**

- 1. Your quotation should contain Authorization Letter from the manufacturer, if you are not manufacturer of the machine / software.
- 2. Bidder has to complete work within 01 years from date of tender allotment or within 06 months of building Handover, whichever is later.
- 3. The bidder will be responsible for the installation and commissioning of the Semi-Anechoic chamber including all the equipment and software.
- 4. Bidder will share floor planning, layout and draft for Semi Anechoic chamber, control room, amplifier room and auxiliary room. It must include the 3D drawing of the entire facility.
- 5. Bidder should provide a complete list of equipment with its specification as per test defined in the tender.
- 6. Bidder will provide demonstration, and complete training at IIT Kanpur for the installed system including software.
- 7. IIT Kanpur reserves the right to remove any item/equipment that is listed in technical specification of tender.
- 8. The Institute reserves the right of accepting / rejecting any quotations without assigning any reason thereof.
- 9. The final tender will however be awarded to the bidder quoting the lowest price, which is the sum of overall prices quoted of all the items.
- 10. The bidder should completely fill the compliance sheet as per the given format.

### 11. Patent Rights:

The bidder shall, at all times, indemnify and keep indemnified IIT Kanpur, free of cost, against all claims which may arise in respect of goods and services to be provided by the bidder under this contract for infringement of any intellectual property rights or any other rights protected by patent, registration of designs or trademarks. In the event of any such claim in respect of alleged breach of patent, registered designs, trademarks etc. being made against IIT Kanpur, it shall be brought to the notice of the bidder and the bidder shall, at his/her own expenses, take care of the same for settlement without any liability to the institute.

### 12. Packing and Marking:

The bidder shall ensure that the proper packing is used while shipping the goods, so that they arrive at IIT Kanpur in good working condition and without any damage.

### 13. Warranty, Calibration, Service and Maintenance:

- a. Warranty as specified in sections 5.1, 5.2
- b. On site calibration, comprehensive service, and maintenance should be for a minimum period of three years.

- c. Warranty must start from the date of installation (including calibration and verification) at IITK.
- d. Warranty, calibration, comprehensive service, and maintenance should cover both labour and spares.
- e. The technical maintenance personnel of the company responsible for supervision and maintenance should reach the site within 3 working days after getting the request for support. Troubleshooting and rectification of failure or maintenance issues should not be extended beyond one week.
- f. If the performance of any individual equipment or system is not satisfactory, the same shall be replaced/repaired by the bidder free of cost.
- g. Installation, testing, commissioning, operation, and maintenance, will be carried out in the presence of IIT Kanpur personnel.
- f. In the event of any rectification of a defect or replacement of any defective goods during the warranty period, the warranty for the rectified/replaced goods shall be extended till the completion of the original warranty period of the main equipment.
- g. All software and firmware updates should be provided free of cost during the warranty period.

## 14. Payment:

- **A. On delivery:** Seventy percent (70%) payment of the value of the delivered goods
- **B.** Installation and Commissioning: Twenty percent (20%) payment of the price of the delivered goods shall be paid on installation and commissioning.
- **C. On Acceptance:** Balance ten percent (10%) payment of the value of the delivered goods would be made against Final Acceptance.

#### 15. Performance Guarantee:

As a contract security, bidder shall be required to furnish a Bank Guarantee for an amount equal to 5% of total bid value from any Nationalized Bank in prescribed form, in favour of "The Registrar, Indian Institute of Technology Kanpur" within 30 days from the date of Letter of Acceptance/work order. The Performance Guarantee shall remain valid for a period of 180 days beyond the date of completion of the work (on final acceptance). It shall be the guarantee for the faithful and due performance of the contract by the bidder in accordance with the terms and conditions specified in this tender. The Performance Guarantee will be returned to the bidder without any interest after its expiry subject to fulfilment of all contractual obligations by the bidder.

Prof. M. Jaleel Akhtar Professor ACES-326, Department of Electrical Engineering Indian Institute of Technology, Kanpur, Kanpur, U.P., INDIA-20801

# TENDER ACCEPTANCE LETTER

(To be given on Company Letter Head)

	Date:
To,	
<del></del>	
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 (Tender/Work' from the web site(s) namely:	mentioned
advertisement, given in the above mentioned website(s).	as per your
2. I / We hereby certify that I / we have read the entire terms and codocuments from Page No to (including all documents like a etc .,), which form part of the contract agreement and I / we shall abide conditions / clauses contained therein.	nnexure(s), schedule(s),
3. The corrigendum(s) issued from time to time by your department/ organisen taken into consideration, while submitting this acceptance letter.	anisation too have also
4. I / We hereby unconditionally accept the tender conditions of abounders(s) / corrigendum(s) in its totality / entirety.	ove mentioned tender
5. I / We do hereby declare that our Firm has not been blacklisted/ debarre by any Govt. Department/Public sector undertaking.	d/ terminated/ banned
6. I / We certify that all information furnished by our Firm is true & correct an information is found to be incorrect/untrue or found violated, then your deshall without giving any notice or reason therefore or summarily reject the contract, without prejudice to any other rights or remedy including the forearnest money deposit absolutely.	partment/ organisation e bid or terminate the
	Yours Faithfully,

(Signature of the Bidder, with Official Seal)

# <u>Certificate for Tender</u> (To be given on Company Letter Head)

	Date:	
То,		
Sub: Certificate of compliance as per Rule 144 (xi) GFR's 2017		
Tender Reference No:		
Name of Tender / Work: -		

"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.]"

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

# Certificate for Tender for Works involving possibility of sub-contracting (To be given on Company Letter Head)

	Date:	
To,		
Sub: Certificate of compliance as per Rule 144 (xi) GFR's 2017		
Tender Reference No:		
Name of Tender / Work: -		
	_	

"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 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)

## **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 Director, Indian Institute of Technology Kanpur, GT Road, Kalyanpur, Kanpur -208016	
Sub: Declaration of Local content	
Tender Reference No:	
Name of Tender / Work: -	
<ul><li>4. Country of Origin of Goods being offered:</li></ul>	
"Local Content" means the amount of value added in India which shall, be the the item being offered minus the value of the imported content in the item (item customs duties) as a proportion of the total value, in percent.	
"*False declaration will be in breach of Code of Integrity under Rule 17: General Financial Rules for which a bidder or its successors can be debarre years as per Rule 151 (iii) of the General Financial Rules along with such other be permissible under law."	d for up to two
(Signature of the Bidder, wi	ours Faithfully, ith Official Seal)

## Appendix - 5

# <u>Bid Security Declaration</u> (To be given on Company Letter Head)

	Date:
To,	
The Assistant Registrar	
Central Stores	
IIT Kanpur-208016	
Sub: Certificate for bid	curity declaration
Tender Reference No	<del></del>
Tender ID	
Name of Tender / Worl	
"I/We have read the cl	se regarding Bid Security Declaration/Earnest Money Deposit and I/We are
fully aware that if I/We	ithdraw or modify the bid during the period of validity I may be suspended
for a period of 3 years.	
,	
	Yours Faithfully,
	(Signature of the Bidder, with Official Seal)

## SCHEMATIC OF THE BUILDING FOR THE PROPOSED FACILITY

