



Tender For

“Supply, Installation, Testing & Commissioning of Field Emission Scanning Electron Microscope with Energy Dispersive X-ray Spectroscopy Analyzer”

(Revised Technical Specifications after the Pre-bid conference)

By

Central Manufacturing Technology Institute
Tumkur Road, Bangalore-560022

सेन्ट्रल मैन्युफेक्चरिंग टेक्नोलॉजि इंस्टिट्यूट 

**CENTRAL MANUFACTURING
TECHNOLOGY INSTITUTE**

CMTI - CENTRAL MANUFACTURING TECHNOLOGY INSTITUTE

Tumkur Road, Bengaluru - 560022, Karnataka, INDIA

INVITATION FOR BIDS

No. CMTI/PUR/0201/2022-23

Date: 30.12.2022

1. CMTI - Central Manufacturing Technology Institute, Tumkur Road, Bengaluru - 560022, Karnataka, India, invites sealed Bids from Wholly-Owned Subsidiary of OEM in India or OEM's own Branch/Sales Office in India, for purchase of items listed below.

Sl. No.	Tender No.	Description of items	Qty	Two Bid	Bid Security (EMD) (Rs.)
1	CMTI/PUR/0201/2022-23/BS/SMPM	Supply, Installation, Testing & Commissioning of Field Emission Scanning Electron Microscope with Energy Dispersive X-ray Spectroscopy Analyzer	One No.	Two Bid System [Techno - Commercial	INR 9,00,000.00

2. Interested Bidders may obtain further information from the office of the Group Head, Purchase & Stores, CMTI - Central Manufacturing Technology Institute, Tumkur Road, Bengaluru - 560022, Karnataka, India, mail: purchase@cmti.res.in
3. The Bidding Documents can be downloaded at www.tenderwizard.com/CMTI.
4. The Director, CMTI- Bengaluru, reserves the right to accept any or all tenders either in part or in full or to split the order without assigning any reasons there for.

SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH ENERGY DISPERSIVE X-RAY SPECTROSCOPE ANALYZER

BID REFERENCE	CMTI/PUR/0201/2022-23/BS/SMPM
PRE- BID CONFERENCE WAS HELD ON	11-01-2023 @ 11.00 hrs.
DEADLINE FOR RECEIPT OF BIDS	27.01.2023 - 12:00 hrs.
DATE AND TIME OF OPENING OF BIDS (TECHNICAL BID ONLY)	27.01.2023 - 14:00 hrs.
DATE AND TIME OF OPENING OF PRICE BIDS	Will be intimated to Technically Qualified Bidders only.
VENUE FOR BID OPENING	E-Tender online opening
ADDRESS FOR COMMUNICATION	Group Head, (Purchase & Stores) Central Manufacturing Technology Institute, Tumkur Road, Bengaluru-560022, Karnataka, India Email ID: purchase@cmti.res.in

N.B.:

1. All the pages of the Bidding Document should be signed, stamped and submitted with the offer.
2. This Bidding Document is non-transferable.
3. Bidding Document can be downloaded free of cost from our website www.cmti.res.in

CHAPTER - 1

INSTRUCTIONS TO BIDDER

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A-Introduction

1.1 Eligible Bidders

1.1.1 (a) Vendor shall be Wholly-Owned Subsidiary of OEM in India or OEM's own Branch/Sales Office in India, (b) vendor shall have service center with trained service engineers in India preferably in Bangalore (c) vendor shall have supplied and installed at least 5 similar equipment's in India and (d) who fulfill the eligibility criteria mentioned in the Chapter-4:Part-A:Sl.No.19 is eligible to participate in this tender.

1.1.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting Services for the preparation of the design, specifications, and other documents to be used for the procurement of the Goods to be purchased under this Invitation For Bids.

1.2 Cost of Bidding

1.2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser, will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

1.3 Fraud and corruption

1.3.1 The Purchaser requires that the Bidders, Suppliers and Contractors observe the highest standard of Ethics during the procurement process and execution of such contracts. In pursuit of this policy, the following are defined:

“Corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;

“Fraudulent practice” means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;

“Collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of the Purchaser, designed to establish bid prices at artificial, non- competitive levels; and

“Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

1.3.2 The Purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question.

B - The Bidding Documents

1.4 Cost of Bidding Documents

1.4.1 The Bidding Documents can be downloaded from Purchaser's website as indicate in the Invitation for Bids [IFB] free of cost.

1.5 Content of Bidding Documents

1.5.1 The Goods required, bidding procedures and contract terms are prescribed in the Bidding Documents which should be read in conjunction. The Bidding Documents, apart from the Invitation For Bids have been divided into 8 chapters as under:

Chapter 1:	Instructions to Bidder (ITB)
Chapter 2:	General Conditions of Contract (GCC) and Special Conditions of Contract (SCC)
Chapter 3:	Schedule of Requirements
Chapter 4:	Specifications and Allied Technical Details PART A: Technical Specifications PART B: Acceptance Criteria
Chapter 5	Price Schedule Forms
Chapter 6	Contract Form
Chapter 7:	Other Standard Forms comprising: (a) Integrity Pact; (b) Bidder Information Form; (c) Bid Security Form; (d) Performance Statement Form; (e) Deviation Statement Form; (f) Service Support details Form; (g) Bid Form; (h) Performance Security Form; (i) Acceptance Certificate Form; (j) Eligibility Certificate Form; (k) Non-Black-Listed Self Certification Form

1.5.2 The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Documents. Failure to furnish all information required by the Bidding Documents or submission of a bid not substantially responsive to the Bidding Documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

1.6 Clarification of Bidding Documents

1.6.1 A prospective Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing at the Purchaser's address specified in the Special Conditions of Contract (SCC). The Purchaser will respond in writing to request for clarification, provided that such request is received not later than ten (10) days prior to the deadline for submission of Bids. The Purchaser shall forward copies of its response to all those who have acquired the Bidding Documents directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Documents as a result

of a clarification, it shall do so following the procedure under clause relating to amendment of Bidding Documents and Clause relating to Deadline for Submission of Bids. The clarifications and amendments issued would also be hosted on the website of the Purchaser for the benefit of the other prospective Bidders.

1.7 Amendment of Bidding Documents

- 1.7.1 At any time prior to the deadline for submission of Bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by an amendment.
- 1.7.2 All prospective Bidders who have received the Bidding Documents will be notified of the amendment in writing or by cable or by fax, or by e mail and the said amendment will be binding on them. The same would also be hosted on the website of the Purchaser and all prospective Bidders are expected to surf the website before submitting their Bids to take cognizance of the amendments.
- 1.7.3 In order to allow prospective Bidders reasonable time to take the amendment into account, while preparing their Bids, the Purchaser, at its discretion, may extend the deadline for the submission of Bids and host the changes on the website of the Purchaser.

C - Preparation of Bids

1.8 Language of Bid

- 1.8.1 The Bidder shall bear all costs of translation, if any, to the English language and all risks of the accuracy of such translation, for documents provided by the Bidder.

1.9 Documents Comprising the Bid

- 1.9.1 The Offer is to be submitted in two parts. One part will be the Un-Priced Techno-Commercial Bid and the other shall be the Priced Bid in the manner described at ITB Clause 1.18.
- 1.9.2 The Un-Priced Techno-Commercial Bid prepared by the Bidder shall include, among other Documents [like Technical Literature, brochures, drawings, all relevant commercial terms, data sheets etc.] the following:
- (a) Bidder Information Form;
 - (b) Bid Security as specified in the Invitation For Bids;
 - (c) Service support details form;
 - (d) Deviation Statement Form;
 - (e) Performance Statement Form;
 - (f) Documentary evidence establishing that the Bidder is eligible to bid and is qualified to perform the contract if its bid is accepted;
 - (g) Documents establishing Good eligibility and conformity to Bidding Documents;
 - (h) Current solvency certificate
 - (i) Eligibility Certificate
 - (j) Non-Blacklisted self-certificate
- 1.9.3 The Price Bid prepared by the Bidder shall include, among other Documents the following:
- (a) Bid form.
 - (b) Applicable Price Schedule Form (this forms shall be mandatorily be uploaded in the

price bid)

1.10 Bid Form and Price Schedule Form

1.10.1 The Bidder shall complete the Bid Form and the appropriate Price Schedule Form furnished in the Bidding Documents. These forms must be completed without any alterations to its format and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.

1.11 Bid Prices

1.11.1 The Bidder shall indicate on the appropriate Price Schedule Form, the unit prices and total bid prices of the Goods it proposes to supply under the contract.

1.11.2 Prices indicated on the Price Schedule Form shall be entered separately in the following manner:

(a) For Goods manufactured within India

- (i) The price of the Goods quoted ex - works including taxes already paid.
- (ii) GST and other taxes & duties which will be payable on the Goods if the contract is awarded.
- (iii) The charges for inland transportation, insurance and other local Services required for delivering the Goods at the desired destination.
- (iv) The installation, commissioning and training charges including any incidental Services, if any.

(b) For Goods manufactured abroad

- (i) The price of the Goods, quoted on EXW/ FCA (named place of delivery abroad) or FOB (named port of shipment), as specified in the Price Schedule Form.
- (ii) The charges for insurance and transportation of the Goods to the port/place of destination. The agency commission charges, if any.
- (iii) The installation, commissioning and training charges including any incidental Services, if any

1.11.3 The terms FOB, FCA, CIF, CIP etc. shall be governed by the rules prescribed in the current edition of the INCOTERMS published-by the International Chambers of Commerce, Paris.

1.11.4 Where there is no mention of packing, forwarding, freight, insurance charges, taxes etc. such offer shall be rejected as incomplete.

1.11.5 The price quoted shall remain fixed during the contract period and shall not vary on any account.

1.11.6 All lots and items must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Lots or items not listed in the Price Schedule shall be assumed to be not included in the bid.

1.12 Bid Currencies

- 1.12.1 Prices shall be quoted in **Indian Rupees** for offers received for supply within India and in freely convertible foreign currency in case of offers received for supply from foreign countries.

1.13 Documents Establishing Bidder's Eligibility and Qualifications

- 1.13.1 The Bidder shall furnish as part of its bid, documents establishing the Bidder's eligibility to bid and its qualification to perform the contract if its bid is accepted.
- 1.13.2 The documentary evidence of the Bidder's qualification to perform the contract if the bid is accepted shall establish to the Purchaser's satisfaction that; Bidder meets the qualification/eligibility Criteria listed in Bidding Documents, if any.
- 1.13.3 Conditional tenders shall not be accepted.

1.14 Documents Establishing Goods Eligibility and Conformity to Bidding Documents

- 1.14.1 To establish the Goods eligibility, the documentary evidence of the Goods and Services eligibility shall consist of a statement on the country of origin of the Goods and Services offered which shall be confirmed by a certificate of origin issued by a local chamber of commerce at the time of shipment.
- 1.14.2 To establish the conformity of the Goods and Services to the specifications and schedule of requirements of the Bidding Documents, the documentary evidence of conformity of the Goods and Services to the Bidding Documents may be in the form of literature, drawings and data, and shall consist of:
- (a) A detailed description of the essential technical and performance characteristics of the Goods;
 - (b) A list giving full particulars, including available sources and current prices, of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods following commencement of the use of the Goods by the Purchaser in the Priced - bid; and
 - (c) An item-by- item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the Goods and Services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.
- 1.14.3 For purposes of the commentary to be furnished pursuant to above, the Bidder shall note that standard workmanship, material and equipment, designated by the Purchaser in its Technical Specifications are intended to be descriptive only not restrictive The Bidder may substitute these in its bid, provided that it demonstrates to the Purchaser's satisfaction that the Substitutions ensure substantial equivalence to those designated in the Technical Specifications.

1.15 Bid Security (BS) / Earnest Money Deposit (EMD)

- 1.15.1 The Bidder shall furnish, as part of its bid, a Bid Security (BS) / Earnest Money Deposit [EMD] for an amount as specified in the Invitation for Bids.
- 1.15.2 The Bid Security is required to protect the Purchaser against the risk of Bidder's conduct,

which would warrant the security's forfeiture.

1.15.3 The Bid Security shall be in Indian Rupees for offers received for supply within India and denominated in the currency of the bid or in any freely convertible foreign exchange in the case of offers received for supplies from foreign countries in equivalent Indian Rupees. The Bid Security shall be in one of the following forms at the Bidder's option:

- (a) A Bank Guarantee [BG] issued by a Nationalized/Scheduled bank in the form provided in the Bidding Documents and valid for 45 days beyond the validity of the bid. In case a Bidder desires to submit a BG issued from a foreign bank, then the same should be confirmed by a Nationalized/Scheduled Indian bank, with all confirmation charges to Bidder's account. Purchaser reserves the right to verify the authenticity of the Bank Guarantees from the issuing/confirming/controlling bank; or
- (b) Fixed Deposit Receipt pledged in favour of the Purchaser ; or
- (c) Online payment in favour of the Purchaser.

1.15.4 The Bid Security shall be payable promptly upon written demand by the Purchaser in case the conditions listed in the ITB Sub-Clause 1.15.8 are invoked.

1.15.5 The Bid Security should be submitted in its original form. Copies shall not be accepted.

1.15.6 The Bid Security of unsuccessful Bidder will be discharged / returned as promptly as possible positively within a period of 30 days after the expiration of the period of bid validity or placement of order whichever is later, without any interest.

1.15.7 The successful Bidder's Bid Security will be discharged upon the Bidder furnishing the Performance Security, without any interest. Alternatively, the BS could also be adjusted against PS, if it is paid through DD/BC.

1.15.8 The Bid Security may be forfeited:

- (a) If a Bidder withdraws or amends or impairs or derogates its bid during the period of bid validity specified by the Bidder on the Bid Form; or
- (b) In case of a successful Bidder, if the Bidder fails to furnish Order Acknowledgement within 15 days of the order or fails to sign the contract and/or fails to furnish Performance Security within 21 days from the date of contract/ order.

1.16 Period of Validity of Bids

1.16.1 Bids shall remain valid for a minimum period of 180 days after the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

1.16.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by cable, telex, fax or e-mail). The Bid Security provided shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request will not be required nor permitted to modify its bid.

1.16.3 Bid evaluation will be based on the bid prices without taking into consideration the above

corrections.

1.17 Format and Signing of Bid

- 1.17.1 Bids are invited on two-bid system, the Bidder shall submit the Bids in two separate parts. One part will be the Un-Priced Techno - Commercial Bid and the other shall be the Price Bid.

D – Submission of Bids

1.18 Submission of Bids

- 1.18.1 The Bidders may submit their Bids in Tender Wizard portal as two separate bids.

E - Opening and Evaluation of Bids

1.19 Opening of Bids by the Purchaser

- 1.19.1 The Purchaser will open all Bids at a time in Tender portal. The Price Bid shall be opened only after technical evaluation.

1.20 Confidentiality

- 1.20.1 Information relating to the examination, evaluation, comparison, and post qualification of Bids, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until publication of the Contract Award.
- 1.20.2 Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post qualification of the Bids or contract award decisions may result in the rejection of its Bid.

1.21 Clarification of Bids

- 1.21.1 To assist in the examination, evaluation, comparison and post qualification of the Bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. However, no negotiation shall be held except with the lowest Bidder, at the discretion of the Purchaser. Any clarification submitted by a Bidder in respect to its bid which is not in response to a request by the Purchaser shall not be considered.

1.22 Preliminary Examination

1.22.1 The Purchaser shall examine the Bids to confirm that all documents and technical documentation requested in ITB Clause 1.9 have been provided, and to determine the completeness of each document submitted.

1.22.2 The Purchaser shall confirm that the following documents and information have been provided in the Bid. If any of these documents or information is missing, the offer shall be rejected.

- (a) Bid Form and Price Schedule Form, in accordance with ITB Clause 1.10. This condition pertains to opening of Price Bid only;
- (b) All the Bids received will first be scrutinized to see whether the Bids meet the basic requirements as incorporated in the Invitation for Bids [IFB]. The Bids, which do not meet the basic requirements, are to be treated as unresponsive and ignored. The following are some of the important points, for which a tender may be declared as unresponsive and to be ignored, during the initial scrutiny:
 - (i) The Bid is unsigned.
 - (ii) Bid Security/ Earnest Money Deposit has not been furnished
 - (iii) The Bidder is not eligible.
 - (iv) The Bid validity is shorter than the required period.
 - (v) The Bidder has quoted for Goods manufactured by a different firm without the required authority letter from the proposed Manufacturer.
 - (vi) Bidder has not agreed to give the required Performance Security.
 - (vii) The Goods quoted are sub-standard, not meeting the required specification etc.
 - (viii) Against the schedule of Requirement (incorporated in the tender enquiry), the Bidder has not quoted for the entire requirement as specified in that schedule.
 - (ix) The Bidder has not agreed to some essential condition(s) incorporated in the tender enquiry.
 - (x) Bidder has not mentioned charges related to packing, forwarding, freight, insurance charges, taxes etc. as required under Instructions to Bidders Clause 1.11 thus rendering such offers as incomplete.

1.23 Responsiveness of Bids

1.23.1 Prior to the detailed evaluation, the Purchaser will determine the substantial responsiveness of each bid to the Bidding Documents. For purposes of this clause, a substantive responsive bid is one, which conforms to all terms and condition of the Bidding Documents without material deviations, reservations or omissions. A material deviation, reservation or omission is one that:

- (a) Affects in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or
- (b) Limits in any substantial way, inconsistent with the bidding documents, the purchase's rights or the bidder's obligations under the contract; or
- (c) If rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.

1.23.2 The purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

- 1.23.3 If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation or omission.

1.24 Non-Conformity, Error and Omission

- 1.24.1 Provided that a Bid is substantially responsive, the Purchaser may waive any non-conformities or omissions in the Bid that do not constitute a material deviation.
- 1.24.2 Provided that a bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 1.24.3 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:
- (a) If there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
 - (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
- 1.24.4 Provided that a bid is substantially responsive, the Purchaser may request that a Bidder may confirm the correctness of arithmetic errors as done by the Purchaser within a target date. In case, no reply is received then the bid submitted shall be ignored and its Bid Security may be forfeited.

1.25 Examination of Terms & Conditions, Technical Evaluation

- 1.25.1 The Purchaser shall examine the Bid to confirm that all terms and conditions specified in the GCC and the SCC have been accepted by the Bidder without any material deviation or reservation.
- 1.25.2 The Purchaser shall evaluate the technical aspects of the Bid submitted in accordance with ITB Clause 1.14, to confirm that all requirements specified in Schedule of Requirements of the Bidding Documents have been met without any material deviation or reservation.
- 1.25.3 If, after the examination of the terms and conditions and the technical evaluation, the Purchaser determines that the Bid is not substantially responsive in accordance with ITB Clause 1.23, it shall reject the Bid.

1.26 Conversion to Single Currency

- 1.26.1 To facilitate evaluation and comparison, the Purchaser will convert all bid prices expressed in the amounts in various currencies in which the bid prices are payable to Indian Rupees at

the selling exchange rate established by any bank in India as notified in the Newspapers on the date of bid opening in the case of single part bidding and the rates prevalent on the date of opening of the Price Bids in the case of two - part bidding. For this purpose, exchange rate notified in www.xe.com or www.rbi.org or any other website could also be used by the Purchaser.

1.27 Evaluation and comparison of Bids

1.27.1 The Purchaser shall evaluate each bid that has been determined, up to this stage of the evaluation, to be substantially responsive.

1.27.2 To evaluate a Bid, the Purchaser shall only use all the factors, methodologies and criteria defined below. No other criteria or methodology shall be permitted.

1.27.3 The Bids shall be evaluated on the basis of final landing cost which shall be arrived as under:
For Goods manufactured in India.

- a. The price of the Goods quoted ex -works including all taxes already paid.
- b. GST and other taxes & duties like excise duty etc. which will be payable on the Goods if the contract is awarded.
- c. Charges for inland transportation, insurance and other local Services required for delivering the Goods the desired destination.
- d. The installation, commissioning and training charges including incidental Services, if any.

For Goods manufactured abroad

- a. The price of the Goods, quoted on EXW [duly packed] / FCA (named place of delivery abroad) or FOB (named port of shipment), as specified in the Bidding Documents.
- b. The charges for insurance and transportation of the Goods to the port/place of destination.
- c. The agency commission etc., if any.
- d. The installation, commissioning and training charges including incidental Services, if any.

1.27.4 The comparison between the indigenous and the foreign offers shall be made on FOR destination basis and CIF/ CIP basis respectively. However, the CIF/CIP prices quoted by any foreign Bidder shall be loaded further as under:

- a. Towards customs duty and other statutory levies as per applicable rates.
- b. Towards custom clearance, inland transportation etc.

Note: Where there is no mention of packing, forwarding, freight, insurance charges, taxes etc. such offers shall be rejected as incomplete

1.27.5 In the case of Purchase of many items against one tender, which are not inter-dependent or, where compatibility is not a problem, normally the comparison would be made on ex works, (in case of indigenous items) and on FOB / FCA (in the case of imports) prices quoted by the firms for identifying the lowest quoting firm for each item.

1.27.6 Orders for imported stores need not necessarily be on FOB/FCA basis. Rather it can be on

the basis of any of the INCOTERMS specified in ICC INCOTERMS 2020 as may be amended from time to time by the ICC

1.27.7 Wherever the price quoted on FOB/FCA and CIF/CIP basis are the same, the Contract would be made on CIF / CIP basis only.

1.27.8 The GCC and the SCC shall specify the mode of transport i.e. whether by air/road/rail.

1.27.9 In case optional items are specified in the tendered specifications, the Purchaser reserves the right to buy or not to buy the optional items. In case the option is exercised to buy the optional items after Bid opening, then the cost of optional items would be included to ascertain the Lowest Evaluated Responsive Bid. In case, the option is exercised not to buy the optional items, then the cost of the optional items would not be included in ascertaining the Lowest Evaluated Responsive Bid.

NOTE: Bidders not quoting the optional items entail the risk of their offer being summarily ignored in the event of the Purchaser deciding to buy the optional items after Bid opening.

1.28 Comparison of Bids

1.28.1 The Purchaser shall compare all substantially responsive Bids to determine the lowest-evaluated responsive bid, in accordance with ITB Clause 1.27.

1.29 Contacting the Purchaser

1.29.1 Subject to ITB Clause 1.21, no Bidder shall contact the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded.

1.29.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.

1.30 Post qualification

1.30.1 In the absence of pre - qualification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB Clause 1.13.

1.30.2 The determination will take into account the eligibility criteria listed in the Bidding Documents and will be based up on Examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as the Purchaser deems necessary and appropriate.

1.30.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the bidder's bid.

F- Award of Contract

1.31 Negotiations

1.31.1 There shall not be any negotiation normally. Negotiations, if at all, shall be an exception and only in the case of items with limited source of supply. Negotiations shall be held with the lowest evaluated responsive Bidder. Counter offers tantamount to negotiations and shall be treated at par with negotiations in the case of one time purchases.

1.32 Award Criteria

- 1.32.1 Subject to ITB Clause 1.34 the Purchaser will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined to be the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily.

1.33 Purchaser's right to vary Quantities at Time of Award

- 1.33.1 The Purchaser reserves the right at the time of Contract award to increase or decrease the quantity of Goods and Services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions. Further, at the discretion of the Purchaser, the quantities in the contract may be enhanced by 30% within the delivery period.

1.34 Purchaser's right to accept any Bid and to reject any or All Bids

- 1.34.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders.

1.35 Notification of Award

- 1.35.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder in writing by registered letter or by cable or telex or fax or e-mail that the bid has been accepted and a separate Purchase Order shall follow through post.
- 1.35.2 Until a formal contract is prepared and executed, the notification of award shall constitute a binding contract.
- 1.35.3 Upon the successful bidder's furnishing of the signed contract form and performance security pursuant to ITB clause 1.38, the purchaser will promptly notify each unsuccessful bidder and will discharge its bid security

1.36 Signing of Contract

- 1.36.1 Promptly after notification, the Purchaser shall send the successful Bidder the Agreement/Purchase Order.
- 1.36.2 Within twenty - one (21) days of date of the Agreement / Purchase Order, the successful Bidder shall sign, date, and return it to the Purchaser.

1.37 Order Acknowledgement

- 1.37.1 The successful Bidder should submit Order Acknowledgement within 15 days from the date of issue of the Purchase Order / Contract, failing which it shall be presumed that the Supplier is not interested and his Bid Security is liable to be forfeited pursuant to clause 1.15.11 of ITB.
- 1.37.2 The Order Acknowledgement must be received within 15 days. However, the Purchaser has the powers to extend the time frame for submission of Order Acknowledgement and submission of Performance Security (PS). Even after extension of time, if the Order Acknowledgement /PS are not received, the contract shall be cancelled and limited tenders irrespective of the value shall be invited from the responding firms after forfeiting the Bid

Security of the defaulting firm, where applicable, provided there is no change in specifications. In such cases the defaulting firm shall not be considered again for re-tendering in the particular case.

1.38 Performance Security

- 1.38.1 Within 21 days of receipt of the notification of award/PO, the Supplier shall furnish Performance Security in the amount specified in SCC, valid till 60 days after the warranty period. Alternatively, the PS may also be submitted at the time of release of final payment in cases where part payment is made against delivery & part on installation. The PS, where applicable, shall be submitted in advance for orders where full payment is to be made on Letter of Credit (LC) or on delivery. In this case, submission of PS at the time of negotiation of documents through Bank would be stipulated as a condition in the LC and the BS should be kept valid till such time the PS is submitted.
- 1.38.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 1.38.3 The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries.
- 1.38.4 In the case of imports, the PS may be submitted either by the Principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the Manufacturer or their authorized dealer/Bidder.
- 1.38.5 The Performance Security shall be in one of the following forms:
- a. A Bank Guarantee [BG] or Stand- by Letter of Credit [SLC] issued by a Nationalized/Scheduled bank located in India or a Foreign bank [i.e. a bank located outside India] with preferably its operating branch in India. The BG shall be issued in the form provided with the Bidding Documents. In case of Performance Security being furnished in the shape of Bank Guarantee or Stand - by Letter of Credit issued by any foreign bank, the said BG/SLC shall have to be confirmed. All confirmation and other bank charges in this respect shall be borne by the Supplier. Purchaser shall independently verify the authenticity of the BGs from the issuing / confirming / controlling banks. Or;
 - b. Online payment in favour of the purchaser, or;
 - c. A Fixed Deposit Receipt pledged in favour of the Purchaser.
- 1.38.6 The Performance Security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.
- 1.38.7 In the event of any contract amendment, the Supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the Performance Security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.
- 1.38.8 The Order Acknowledgement should be received within 15 days from the date of

notification of award. However, the Purchaser has the powers to extend the time frame for submission of Order Acknowledgement and submission of Performance Security (PS). Even after extension of time, if the Order Acknowledgement /PS are not received, the contract shall be cancelled and limited tenders irrespective of the value would be invited from the responding firms after forfeiting the Bid Security of the defaulting firm, where applicable provided there is no change in specifications. In such cases the defaulting firm would not be considered again for re- tendering in the particular case.

CHAPTER - 2

CONDITIONS OF CONTRACT

A. GENERAL CONDITIONS OF CONTRACT (GCC)

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2.1. Definitions

2.1.1. The following words and expressions shall have the meanings hereby assigned to them:

- (a) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (b) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.
- (c) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments
- (d) "Day Means" calendar day
- (e) "Completion" means the fulfillment of the related services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (f) "GCC" means the General Conditions of Contract
- (g) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (h) "Related Service", means the services incidental to the supply of the Goods, such as transportation, insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.
- (i) "SCC" means the Special Conditions of Contract.
- (j) "Subcontractor" means any natural person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
- (k) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
- (l) The "Institute" means CMTI, Central Manufacturing Technology Institute registered under the Societies Registration Act, 1860 of Govt. Of India having its registered office at Tumkur Road, Bengaluru - 560022, Karnataka, India and the "Purchaser" also means the above Institute situated at the above address in India as specified in SCC.
- (m) "Final Destination", where applicable, means the place named in the SCC.

2.2. Contract Documents

Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

2.3. Fraud and Corruption

2.3.1. The Purchaser requires that Bidders, Suppliers, contractors and consultants, if any, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy,

- (a) The terms set forth below are defined as follows:

- (i) **"Corrupt practice"** means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution;
 - (ii) **"Fraudulent practice"** means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
 - (iii) **"Collusive practice"** Means a scheme or arrangement between two or more Bidders, with or without the knowledge of the Borrower, designed to establish bid prices at artificial, noncompetitive levels; and
 - (iv) **"Coercive practice"** means harming or threatening to harm, directly or indirectly, persons or their Property to influence their participation in the procurement process or affect the execution of a contract;
- (b) The Purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question.

2.4. Joint Venture, Consortium or Association

2.4.1. If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

2.5. Scope of Supply

2.5.1. The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

2.6. Suppliers' Responsibility

2.6.1. The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with Scope of Supply Clause of the GCC, and the Delivery and Completion Schedule, as per GCC Clause relating to delivery and document.

2.7. Contract price

2.7.1. Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.

2.8. Copyright

2.8.1. The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including Suppliers of materials, the copyright in such materials shall remain vested in such third party

2.9. Application

2.9.1. These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

2.10. Standards

2.10.1. The Goods supplied and Services rendered under this Contract shall conform to the standards mentioned in the Technical Specifications and Schedule of requirements, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

2.11. Use of Contract Documents and Information

2.11.1. The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.

2.11.2. The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated above except for purposes of performing the Contract.

2.11.3. Any document, other than the Contract itself, enumerated above shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract, if so required by the Purchaser.

2.12. Patent Indemnity

2.12.1. The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 2.12.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) The installation of the Goods by the Supplier or the use of the Goods in India; and
- (b) The sale in any country of the products produced by the Goods.

2.12.2. If any proceedings are brought or any claim is made against the Purchaser, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may as its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claims.

2.13. Performance Security

2.13.1. Within 21 days of receipt of the notification of award / PO, the Supplier shall furnish

Performance Security in the amount specified in SCC, valid till 60 days after the warranty period. Alternatively, the PS may also be submitted at the time of release of final payment in cases where part payment is made against delivery & part on installation. The PS, where applicable, shall be submitted in advance for orders where full payment is to be made on Letter of Credit (LC) or on delivery. In this case, submission of PS at the time of negotiation of documents through Bank would be stipulated as a condition in the LC and the BS should be kept valid till such time the PS is submitted.

- 2.13.2. The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 2.13.3. The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries.
- 2.13.4. In the case of imports, the PS may be submitted either by the principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the Manufacturer or their authorized dealer/Bidder.
- 2.13.5. The Performance Security shall be in one of the following forms:
 - (a) A Bank Guarantee [BG] or Stand - by Letter of Credit [SLC] issued by a Nationalized/Scheduled bank located in India or a Foreign bank with preferably its operating branch in India. The BG shall be issued in the form provided with the Bidding Documents. In case of Performance Security being furnished in the shape of Bank Guarantee or Stand - by Letter of Credit issued by any foreign bank, the said BG/SLC shall have to be confirmed by any nationalized bank of India. All confirmation and other bank charges in this respect shall be borne by the Supplier. Purchaser shall independently verify the authenticity of the BGs from the issuing / confirming / controlling banks. Or;
 - (b) Online payment in favour of the Purchaser. Or;
 - (c) A Fixed Deposit Receipt pledged in favour of the Purchaser.
- 2.13.6. The Performance Security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.
- 2.13.7. In the event of any contract amendment, the Supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the Performance Security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.
- 2.13.8. The order confirmation should be received within 15 days from the date of notification of award. However, the Purchaser has the powers to extend the time frame for submission of order confirmation and submission of Performance Security (PS). Even after extension of time, if the order confirmation /PS are not received, the contract shall be cancelled and limited tenders irrespective of the value would be invited from

the responding firms after forfeiting the Bid Security of the defaulting firm, where applicable provided there is no change in specifications. In such cases the defaulting firm would not be considered again for re-tendering in the particular case.

2.14. Inspections and Tests

- 2.14.1. The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in the SCC or as discussed and agreed to during the course of finalization of contract.
- 2.14.2. The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser. The Technical Specifications and SCC shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes.
- 2.14.3. The inspections and tests may be conducted on the premises of the Supplier or its subcontract or(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the Purchaser.
- 2.14.4. Whenever the Supplier is ready to carry out any such test and inspection, it shall give reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or Manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 2.14.5. Should any inspected or tested Goods fail to conform to the specifications, the Purchase or may reject the Goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 2.14.6. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 2.14.7. The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 2.14.8. With a view to ensure that claims on insurance companies, if any, are lodged in time, the Bidders and /or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the Bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the Purchaser on the event of the

delay.

2.15. Packing

- 2.15.1. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.
- 2.15.2. The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser.

2.16. Delivery and Documents

- 2.16.1. Delivery of the Goods and completion and related Services shall be made by the Supplier in accordance with the terms specified by the Purchaser in the contract. The details of shipping and/ or other documents to be furnished by the Supplier are specified in SCC.
- 2.16.2. The terms FOB, FCA, CIF, CIP etc. shall be governed by the rules prescribed in the current edition of the INCOTERMS published by the International Chambers of Commerce, Paris.
- 2.16.3. The mode of transportation shall be as specified in SCC.

2.17. Insurance

- 2.17.1. Should the Purchaser elect to buy on CIF/CIP basis, the Goods supplied under the Contract shall be fully insured in Indian Rupees against any loss or damage incidental to manufacture or acquisition, transportation, Storage and delivery in the manner specified in SCC.
- 2.17.2. Where delivery of the Goods is required by the Purchaser on CIF or CIP basis the Supplier shall arrange and pay for Cargo Insurance, naming the Purchaser as beneficiary and initiate & pursue claims till settlement, on the event of any loss or damage.
- 2.17.3. Where delivery is on FOB or FCA basis, insurance would be the responsibility of the Purchaser.
- 2.17.4. With a view to ensure that claims on insurance companies, if any, are lodged in time, the Bidders and /or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the Bidder/Indian Agent would be

viewed seriously and he shall be directly responsible for any loss sustained by the Purchaser on the event of the delay.

2.18. Transportation

2.18.1. Where the Supplier is required under the Contract to deliver the Goods FOB, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price. Where the Supplier is required under the Contract to deliver the Goods FCA, transport of the Goods and delivery into the custody of the carrier at the place named by the Purchaser or other agreed point shall be arranged and paid for by the supplier, and the cost thereof shall be included in the Contract price.

2.18.2. Where the Supplier is required under the Contract to deliver the Goods CIF or CIP, transport of the Goods to the port of destination or such other named place of destination in the Purchaser's country, as shall be specified in the Contract shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

2.18.3. In the case of supplies from within India, where the Supplier is required under the Contract to transport the Goods to a specified destination in India, defined as the Final Destination, transport to such destination, including insurance and storage, as specified in the Contract, shall be arranged by the Supplier, and the related costs shall be included in the Contract Price.

2.19. Incidental Services

2.19.1. The Supplier may be required to provide any or all of the Services, if any, specified in SCC.

2.20. Spare Parts

2.20.1. The Supplier shall be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

- (a) Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
- (b) In the event of termination of production of the spare parts:
 - (i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
 - (ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.
- (c) In case of OEM Supplier companies merges, amalgamation, take over or bifurcation etc., it is the responsibility of the Original Supplier to maintain the spare parts requirements for 10 years with the new Entity. Failing which Performance Security will be forfeited.

2.21. Warranty

- 2.21.1. The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 2.21.2. The Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.
- 2.21.3. Unless otherwise specified in the SCC or technical specifications, the warranty shall remain valid as specified in the contract.
- 2.21.4. The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 2.21.5. Upon receipt of such notice, the Supplier shall, within a reasonable period of time, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 2.21.6. If having been notified, the Supplier fails to remedy the defect within the reasonable period of time, the Purchaser expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.
- 2.21.7. Goods requiring warranty replacements must be replaced on free of cost basis to the Purchaser at Purchaser site.

2.22. Terms of Payment

- 2.22.1. The method and conditions of payment to be made to the Supplier under this Contract shall be as specified in the SCC.
- 2.22.2. The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to Delivery and document Clause of the GCC and upon fulfillment of other obligations stipulated in the contract.
- 2.22.3. Payments shall be made promptly by the Purchaser within a reasonable time after submission of the invoice or claim by the Supplier.
- 2.22.4. Payment shall be made in currency as indicated in the contract.

2.23. Change Orders and Contract Amendments.

- 2.23.1. The Purchaser may at any time, by written order given to the Supplier pursuant to Clause on Notices of the GCC make changes within the general scope of the Contract in any one or more of the following:
 - (a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (b) The method of shipping or packing;
 - (c) The place of delivery; and/or

- (d) The Services to be provided by the Supplier.
- (e) The delivery schedule.

2.23.2. If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within fifteen (15) days from the date of the Supplier's receipt of the Purchaser's change order.

2.23.3. No variation or modification in the terms of the contract shall be made except by written amendment signed by the parties.

2.24. Assignment

2.24.1. The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

2.25. Sub contracts

2.25.1. The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or duties or obligation under the Contract.

2.26. Extension of time

2.26.1. Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser.

2.26.2. If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may, at its discretion, extend the suppliers time for performance with or without penalty, in which case the extension shall be ratified by the parties by amendment of the Contract.

2.26.3. Except as provided under the Force Majeure clause of the GCC, a delay by the Supplier in the performance of its delivery Obligations shall render the Supplier liable to the imposition of penalty pursuant to Penalty Clause of the GCC unless an extension of time is agreed upon pursuant to above clause without the application of penalty clause.

2.27. Penalty clause

2.27.1. Subject to GCC Clause on Force Majeure, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services or contract value for each week or part thereof of delay until actual delivery or performance, up

to a maximum deduction of the Percentage specified in SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause on Termination for Default. The SCC shall also indicate the basis for ascertaining the value on which the penalty shall be applicable.

2.28. Termination for Default

2.28.1. The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part

- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause on Extension of Time; or
- (b) If the Supplier fails to perform any other obligation(s) under the Contract; or
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent or collusive or coercive practices as defined in GCC Clause on Fraud or Corruption in competing for or in executing the Contract.

2.28.2. In the event the Purchaser terminates the contract in whole or in part, he may take recourse to any one or more of the following action:

- (a) The Performance Security is to be forfeited;
- (b) The Purchaser may procure, upon such terms and in such manner as it deems appropriate, stores similar to those undelivered, and the Supplier shall be liable for all available actions against it in terms of the contract.
- (c) However, the Supplier shall continue to perform the contract to the extent not terminated.

2.29. Force Majeure

2.29.1. Notwithstanding the provisions of GCC Clauses relating to extension of time, penalty and Termination for Default the Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

2.29.2. For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

2.29.3. If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within 21 days of its occurrence. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

2.29.4. If the performance in whole or in part or any obligations under the contract is prevented or delayed by any reason of force majeure for a period exceeding 60

days, either party may at its option terminate the contract without any financial repercussions on either side.

2.30. Termination for Insolvency

2.30.1. The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

2.31. Termination for Convenience

2.31.1. The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

2.31.2. The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

- (a) To have any portion completed and delivered at the Contract terms and prices
- (b) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.

2.32. Settlement of Disputes

2.32.1. The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

2.32.2. If, after twenty - one (21) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.

2.32.3. The dispute settlement mechanism/arbitration proceedings shall be concluded as under:

- (a) In case of Dispute or difference arising between the Purchaser and a domestic Supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re - enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director, Central Manufacturing Technology Institute and if he is unable or unwilling to act, to the sole arbitration of some other

person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.

- (b) In the case of a dispute between the Purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub - clause (a) above. But if this is not acceptable to the Supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

2.32.4. The venue of the arbitration shall be the place from where the purchase order or contract is issued.

2.32.5. Notwithstanding any reference to arbitration herein,

- (a) The parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
(b) The Purchaser shall pay the Supplier any monies due the Supplier.

2.33. Governing Language

2.33.1. The contract shall be written in English language which shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the English language only.

2.34. Applicable Law

2.34.1. The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction as specified in SCC.

2.35. Notices

2.35.1. Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX, e-mail or and confirmed in writing to the other party's address specified in the SCC.

2.35.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

2.36. Taxes and Duties

2.36.1. For Goods manufactured outside India, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside India.

2.36.2. For Goods Manufactured within India, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred till its final manufacture/production.

2.36.3. If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in India, the Purchaser shall make its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

2.37. Right to use Defective Goods

2.37.1. If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the Goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such Goods until rectifications of

defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the purchaser's operation.

2.38. Protection against Damage

2.38.1. The system shall not be prone to damage during power failures and trip outs. The normal voltage and frequency conditions available at site as under:

- a) Voltage 230 -V Single phase/ 415 V Three phase ($\pm 10\%$)
- b) Frequency 50 Hz.

2.39. Integrity Pact

As per directive of CVC all organizations have to adopt an Integrity Pact (IP) to ensure transparency, equity and competitiveness in major Public procurement activities. The integrity Pact envisages an agreement between the prospective Bidders/Vendors with the buyer committing the persons/officials of both the parties with the aim not to exercise any corrupt influence on any aspect of the contract. Only these Bidders/Vendors who are willing to enter into such an Integrity Pact with the buyer i.e, CMTI would be competent to participate in the bidding.

B. SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 2.1(l)	The <i>Purchaser</i> is: CMTI - Central Manufacturing Technology Institute, Tumkur Road, Bengaluru - 560022, Karnataka, India
GCC 2.1 (m)	The <i>Final Destination</i> is: CMTI - Central Manufacturing Technology Institute, Tumkur Road, Bengaluru - 560022, Karnataka, India,
GCC 2.14.1	<p><i>Inspection and Acceptance Tests at Final Destination:</i></p> <p>The Inspection and Tests prior to shipment of Goods and at final acceptance are as follows:</p> <p>After the Goods are manufactured and assembled, Pre-dispatch Equipment Audit and testing of the Goods shall be carried out at the Supplier’s plant by the Supplier in the Presence of purchaser, prior to shipment to check whether the goods are in conformity with the technical specifications and acceptance criteria. Manufacturer’s Test Certificates, test plots with data sheet shall be issued to this effect and submitted along with the delivery documents. The Technical Specifications shall specify whether any Pre-dispatch Equipment Audit is required and the nature of such inspection.</p> <p>The Inspection and Acceptance Tests at Buyer’s site (Final Destination) are as follows:</p> <p>The acceptance test will be conducted after the equipment is installed at Purchaser’s site by Supplier’s representatives to check conformity with the technical specifications and acceptance criteria. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified. In the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserves the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser. Successful conduct and conclusion of the acceptance test for the installed Goods and equipments shall also be the responsibility and at the cost of the Supplier. Before the Goods and equipments are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the Goods and equipments built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications. The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract. Unless and otherwise agreed, the Goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser. On successful completion of acceptability test, receipt of deliverables, etc. and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment.</p>
GCC 2.15.2	<p><i>Packing</i></p> <p>The marking and documentation within and outside the packages shall be: Each package should have a packing list within it detailing the part No.(s), description, quantity etc.</p>

	<p>Outside each package, the contract No., the name and address of the Purchaser and the final destination should be indicated on all sides and top.</p> <p>Each package should be marked as 1/x, 2/x, 3/x.....x/x, where “x” is the total no of packages contained in the consignment.</p> <p>All the sides and top of each package should carry an appropriate indication / label / stickers indicating the precautions to be taken while handling / storage</p>
<p>GCC 2.16.1</p>	<p><i>Shipping/Dispatch documents</i></p> <p>Details of Shipping and other Documents to be furnished by the Supplier are</p> <p><u>A. For Goods manufactured within India</u></p> <p>Within 24 hours of dispatch, the Supplier shall notify the Purchaser the complete details of dispatch and also supply following documents by registered post / speed post and copies thereof by FAX/ E-mail.</p> <p>(a) Two copies of Supplier’s Invoice indicating, inter - alia description and specification of the Goods, quantity, unit price, total value;</p> <p>(b) Packing list;</p> <p>(c) Certificate of country of origin;</p> <p>(d) Insurance certificate, if required under the contract;</p> <p>(e) Railway receipt/Consignment note;</p> <p>(f) Manufacturer’s guarantee certificate and in- house inspection certificate;</p> <p>(g) Inspection Certificate issued by Purchaser’s inspector, if any and</p> <p>(h) Any other document(s) as and when required in terms of the contract.</p> <p>Note: 1. The nomenclature used for the item description in the invoices(s), packing list(s) and the delivery note(s) etc. Should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s)</p> <p>Note: 2. The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses</p> <p><u>[B] For Goods manufactured abroad</u></p> <p>Within 24 hours of dispatch, the Supplier shall notify the Purchaser the complete details of dispatch and also supply following documents by Registered Post/courier and copies thereof by FAX.</p> <p>(a) Two copies of Supplier’s Invoice giving full details of the Goods including quantity, value, etc.;</p> <p>(b) Packing list;</p> <p>(c) Certificate of country of origin issued by a local chamber of commerce;</p> <p>(d) Manufacturer’s guarantee and Inspection Certificate;</p> <p>(e) Inspection certificate issued by the Purchaser’s Inspector, if any;</p> <p>(f) Insurance Certificate, if required under the contract;</p> <p>(g) Name of the Vessel/Carrier</p> <p>(h) Port of Loading;</p> <p>(i) Date of Shipment;</p> <p>(j) Port of Discharge & expected date of arrival of Goods and</p> <p>(k) Any other document(s) as and when required in terms of the contract</p>

Bidding Document for Supply, Installation, Testing and Commissioning of Field Emission Scanning Electron Microscope with Energy Dispersive X-ray Spectroscopy Analyzer

	<p>Note: 1.The nomenclature used for the item description in the invoices(s), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s)</p> <p>Note: 2. The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses</p>
GCC 2.16.3	<p>Transportation/ Dispatch</p> <p>In case of supplies from within India, the mode of transportation shall be by Air/Rail/Road. In case of supplies from abroad, the mode of transportation shall be by Air. For supplies from abroad, Supplier shall ensure that the Goods are transported through the authorized freight forwarder of Purchaser, whose name and other contact details shall be made available to Purchaser.</p> <p>Purchaser shall not accept dispatch / transportation of Goods through any other forwarder. Payment by L/C shall only be released against presentation of the House Air Way Bill issued by the authorized freight forwarder of Purchaser.</p>
GCC 2.17.1	<p>Insurance</p> <p>The Insurance shall be for an amount equal to the 110% of the CIF or CIP value of the contract from within “warehouse to warehouse (final destination)” on “ALL- RISKS basis including strikes, riots and civil commotion”</p>
GCC 2.19.1	<p>Incidental Services</p> <p>The Incidental Services to be provided are:</p> <ol style="list-style-type: none"> 1. Pre-dispatch Equipment Audit. 2. Installation and Commissioning of Goods / Equipment. 3. Training on use/application. 4. Warranty Support [to be effective from the date of final acceptance at site, [CMTI - Central Manufacturing Technology Institute, Tumkur Road, Bengaluru, Karnataka, India- 560022] <p>The Cost of the above incidental services shall be included in the Contract Price and a Price Break-up shall also be given</p>
GCC 2.21.3	<p>Warranty</p> <p>The period of validity of Warranty shall be effective from the date of acceptance of the Goods to the entire satisfaction of the Purchaser. The Warranty shall be Comprehensive in nature. The warranty period shall be for the period as stipulated in the Technical Specifications</p>
GCC 2.22.1	<p>Payment</p> <p>The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:</p> <p>Payment for Goods supplied from abroad:</p> <p>Payment of foreign currency portion shall be made in the currency of the contract in the following manner:</p> <ol style="list-style-type: none"> (i) On Shipment: 80% (Eighty) percent of the Contract Price of the Goods shipped shall be paid through irrevocable letter of credit opened in favour of the Supplier in a bank in its country, upon submission of shipping documents specified in GCC Clause 2.16.1 (ii) On Acceptance: 20% (Twenty) percent of the Contract Price of Goods received shall be paid after successful installation & commissioning at CMTI upon submission of acceptance certificate.

GCC 2.22.1	<p>The L/ C will be confirmed at the Suppliers cost, if requested specifically by the Supplier. All bank charges abroad shall be to the account of the beneficiary i.e. Supplier and all bank charges in India shall be to the account of the opener i.e. Purchaser. If L/C is requested to be extended/ reinstated for reasons not attributable to the Purchaser, the charges thereof would be to extended/ reinstated for reasons not attributable to the Purchaser; the charges thereof would be to the Suppliers' account. Payment of local currency portion shall be made in Indian Rupees within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed. The LC for 100% value of the contract shall be established after deducting the agency commission payable if any, to the Indian agent from the FOB/FCA/CIF value.</p> <p>[B] Payment for Goods and Services supplied from India:</p> <p>Payment for Goods and Services supplied from within India shall be made in Indian Rupees, as follows:</p> <p>On shipment: 80% (Eighty) percent of the Contract Price shall be paid on receipt of the Goods and upon submission of the documents specified in GCC Clause 2.16.1</p> <p>On Acceptance: The remaining 20% (Twenty) percent of the Contract value shall be paid to the Supplier upon submission of the acceptance certificate.</p>
GCC 2.27.1	<p>Liquidated Damages</p> <p>(i) The penalty shall be: [0.5%] Percent per week or part of a week towards late delivery and towards delay in installation and commissioning.</p> <p>(ii) The maximum amount of liquidated damages shall be: [10%] TEN Percent. The liquidated damages shall be levied on the delivered price of the delayed Goods or unperformed Services or contract value.</p>
GCC 2.34.1	<p>The place of jurisdiction is BENGALURU [KARNATAKA]</p>
GCC 2.35.1	<p>For notices, the Purchaser's address is:</p> <p>Attention: Group Head (Purchase & Stores)</p> <p>CMTI - Central Manufacturing Technology Institute, Tumkur Road, Bengaluru - 560022, Karnataka, India</p> <p>Email : purchase@cmti.res.in</p>

CHAPTER - 3

SCHEDULE OF REQUIREMENTS

TO BE FILLED BY BIDDER AND ENCLOSED WITH THE TECHNO- COMMERCIAL BID

Brief Description of Goods and Services	Quantity
Supply, Installation, Testing and Commissioning of Field Emission Scanning Electron Microscope with Energy Dispersive X-ray Spectroscopy Analyzer [Technical Specifications and Other Details as per Chapter 4 of this Bidding Documents]	One No.
Final Destination	CMTI - Central Manufacturing Technology Institute, Tumkur Road, Bengaluru - 560022, Karnataka, India
Period of Delivery shall count from	< TO BE FILLED BY BIDDER>
Time period by which the goods shall be ready at manufacturer's site for pre-dispatch Equipment Audit	< TO BE FILLED BY BIDDER>
Delivery Period [Goods to be delivered in one lot at final destination CMTI-Central Manufacturing Technology Institute, Tumkur Road, Bengaluru, Karnataka, India-560022]	< TO BE FILLED BY BIDDER>
Time frame required for conducting installation, commissioning of the Goods etc. after arrival of the Goods at Final destination	< TO BE FILLED BY BIDDER>

NOTE: The party has to offer their product/equipment strictly based on the specifications asked in the Bidding Documents.

CHAPTER - 4

Part-A: Technical Specifications

Field Emission Scanning Electron Microscope (FESEM) with Energy Dispersive X-ray Spectroscopy (EDS) Analyzer

Important Notes to Vendor: Merely stating, “comply” does not constitute sufficient information. Exact numerical values are to be specified wherever applicable. **Specified technical data should be supported by OEM product catalogues, manuals, test procedures, test plots, etc. and demonstrated at site. In case of insufficient technical data / false claims, the quote will be summarily rejected without seeking any clarifications.**

Sl. No.	Features Description	Technical Specification	CMTI Requirements	Information needed from Vendors	Vendor Compliance
Indented Primary Use: Research and Development, quality control, failure analysis, etc of various materials - conducting, non-conducting, magnetic and non-magnetic - including and not limited to Metal-Alloys-Composites, Insulators, Semiconductor Electronics, MEMS & NEMS, 3D Printed Parts, Batteries, Pharmaceuticals, Automobiles, Biomedical, Coatings & Thinfilms, Ceramics, Casting & Forging, FMCG, Powders, Polymers & PMCs, Hard Biological Tissues, etc.					
1	Advanced Stable Electron Optical Engine- Latest Version – Highest Analytical Performance and Continuous Operation				
1.1	Electron beam source	Highly Stable Schottky Field Emitter.	Essential	Provide OEM Document.	
		Useful Emitter Life: > 15,000 Hrs. Field Emitter shall prove following technical parameters mentioned everywhere in these specifications at any point of time throughout useful life.	Essential	Specify useful life in hours. Provide OEM Document.	
		Electron beam energy spread.	Specify	Energy spread: __ eV. Provide OEM Document.	

1.2	Electron Beam Acceleration Voltage Range	Minimum: 200 V or less (Landing energy shall be 20 eV or less) Maximum: 30 kV or more Minimum step size: 10 V	Essential	Specify range	
1.3	Electron Beam Current Range (on sample) Stable electron optics should deliver optimized beam at all beam currents with minimum aberrations for ultra-high-resolution imaging and optimized convergence angle to ensure minimum focus change. Electron optics should be computer controlled provides the smallest probe diameter with the optimum probe geometry at low beam currents as well as high beam currents for high resolution analytical performance.	Minimum: 5 pA or less Maximum: 100 nA or more	Essential	Specify range. Specimen current Monitor (SCM) for real time probe current (true value) measurement on sample to be provided.	
		Beam current stability should be < 0.2% for 1 - 2 hours or 0.4% for 10 hours or better for continuous operation.	Essential	Specify stability for 4, 8, 16 & 24 hours	
		Probe Size at 30 µm aperture & 1 nA probe current (or) size of probe which is using for equipment calibration and fulfil <i>Sl.No. 1.4</i> .	Essential	Specify size with corresponding analytical working distance.	
		Arbitrary probe current settings.	Essential	...	
		System should have appropriate hardware to correct/minimize aberrations (spherical & chromatic) and adjust probe current with software interface. High Resolution should be demonstrated without condition.	Essential	Specify in detail.	
1.4	Resolution	≤ 0.7 nm at 15 kV	Essential	Specify resolutions	

	<p>All claims should be determined and demonstrated at the site during the installation using appropriate high resolution standards (conductive, non-conductive and magnetic samples).</p> <p>Image sharpness shall be evaluated as per latest <i>ISO 24597</i>.</p> <p>Vendor shall demonstrate following best achievable resolution at accelerating voltage of</p>	<p>≤ 1.2 nm at 1 kV</p>	<p>Essential</p>	<p>at 15 kV, 1 kV, 0.5 kV and 0.2 kV with & without sample bias and corresponding analytical working distance. Claims shall be demonstrated during acceptance test.</p> <p>The definition of resolution and the method used to determine the resolution should be clearly specified.</p> <p><i>Stable resolution standard</i> shall be supplied by vendor.</p>	
<p>1.5</p>	<p>Useful Magnification</p>	<p>Minimum: 30X or less. Maximum: 20,00,000X or more.</p>	<p>Essential</p>	<p>Specify range</p>	

		<p>Measurement calibration with uncertainty of measurement (UOM) should be performed using mentioned standard (MRS-6) at various magnifications (like 50X; 100X; 500X; 1,000X; 10,000X; 1,00,000X and 10,00,000X) as per latest ISO 16700 guidelines.</p>	Essential	<p>MRS-6 Magnification Reference Standard (stub mounted) <i>certified reference Standard along with Calibration certificate from an accredited laboratory with NIST-USA or NPL-UK traceability</i> shall be used and supplied by vendor.</p>	
		<p>Scan Speed per pixel: 25 ns or better</p>	Essential	Specify Maximum Speed: __ns	
1.6	Optics features	<p>The microscope should employ an auto-alignment correcting procedure that automatically optimize all the lens parameters of electron optics like auto - focus, stigmation, wobbling brightness/contrast and gun alignment, etc for ultimate imaging, analytical performance and full-fill <i>Sl.No.1.7</i>.</p>	Essential	Specify auto magnification range	
		<p>Optics lens assembly shall be the latest version of electromagnetic-electrostatic lens/super hybrid lens/compound lens or equivalent lens assembly [non-immersion/field free optics] for getting high resolution imaging of various nature of samples including magnetic and non-conductive materials with shorter working distance. The lens assembly should be water cooled. Electron Optics column shall be bakeable.</p>	Essential	Specify Provide OEM documents.	

		Feature for Complete System Self-Diagnosis.	Essential	...	
		System Reset Option.	Essential	...	
1.7	Analysis features	System should have feature to perform distortion and noise free high throughput automated large area (full travel range of stage having image store resolution capability of upto 32k × 32k pixels or more) imaging and analysis. Following features shall be provided, <ul style="list-style-type: none"> i. Simultaneous multiple signal (SE, BSE, EDS, WDS, EBSD, etc) acquisition and analysis according to user-specific pre-defined conditions. ii. 2D & critical dimensional measurement with sub-nanometer resolution. iii. Data review, resume and reacquisition. iv. Video generation. 	Essential	Specify in detail. Materials analysis features with compliance of International Standards like ISO or ASTM and images overlay with CAD	
		<ul style="list-style-type: none"> v. Ability to do auto-focus, auto-stigmation, auto-wobbling and auto-brightness/ contrast of full area data acquisition. vi. Ability to do auto quantification of filling factors like material coverage & distribution, multiphase, voids / porosity, grain sizes, particle size, etc. vii. Shape selection: Polygon-arbitrary, elliptical, rectangular, etc. viii. Multi-list job, sequence creation, time estimation ix. Can embedded with other modules like EDS, EBSD, etc. x. Automatic integration of large area stitching without overlap. 		designs (comparisons) are highly preferred.	
		Artificial Intelligent (AI) algorithms for unattended / unsupervised and continuous operation.	Essential	...	

		System should deliver data at the highest performance in all respect. Software should have features for analysis of the data at any time during or after the measurement.	Essential	...	
		Operation of microscope in various modes including data acquisition, data analysis, daily microscope maintenance, etc should be controlled by the software.	Essential	...	
		Complete flexible software architecture package (both Own and Third Party) with multi user (different hierarchy) GUI environment and multi monitor supports. Measurement and processing tools, annotations, etc shall available in GUI.	Essential	...	
1.8	Field of View (FOV) without distortion	Maximum image FOV / Area Under View at analytical working distance where will get best EDS signals, secondary electron and backscattered electron signals.	Essential	Specify X= ___mm Y= ___mm Analytical Working Distance: ___(in mm)	
1.9	Apertures	Motorized Apertures – Shall have perfect circularity made-up of hard material suitable high-resolution imaging and analytical measurement. Should be controlled and auto-alignment by software.	Essential	specify all available apertures and sizes.	
2	Field upgradable Chamber Configuration supports maximum analytical operations	FESEM platform must support onsite/field upgradation of EBSD, STEM, WDS, μ-XRF, Cathodoluminescence, E-beam Lithography, In-situ Tensile Tester with Heating/ Cooling module, Micro-manipulators, Electrical Probing, Plasma Cleaner, etc.	Essential	...	
3	High Resolution Analytical Detectors with Seamless Interfaces have an Excellent Signal-to-Noise Ratio and Detection Efficiency				

3.1	Imaging Detectors	Geometrical positions of the high-resolution detectors should be well-arranged to perform imaging and analytical measurement simultaneously and analysis of the data at any time during or after the measurement.	Essential	...	
		System should have following detectors (A & B) including all other standard detectors optimized for best performance at high and low kV artifacts free imaging having pixel store resolution capability from 1kx1k to 6kx4k pixels or more including beam sensitive, non-conductive and magnetic samples. Detectors should be compatible for in-situ plasma cleaner.	Essential	Specify minimum and maximum image store resolution	
		A. Secondary Electron Detectors (a) In column/lens detectors and (b) Chamber/wall mounted detectors	Essential	Specify analytical working distance range (in mm)	

		<p>B. Back Scattered Electron detector should have features for</p> <ol style="list-style-type: none"> 1. Non-contact complete 2D and 3D surface profile measurement & height maps of following analysis with accuracy of the height measurement is $\leq 1\%$ of Field of View and reports with NIST metrological traceability. <ul style="list-style-type: none"> (a) Surface Texture analysis as per latest ISO 25178 (b) Surface Roughness/ waviness analysis as per latest ISO 16610 2. High speed nanoscale topographical contrast and compositional/material contrast images with energy filters during high and low kV operation. 3. Certified 3D calibration standard with NIST or equivalent traceability shall be provided. 	Essential	<p>Measurement accuracy grade of $> 3\sigma$ is preferred.</p> <p>Estimation of Uncertainty of Measurement (UOM) as per latest ISO/GUM.</p> <p>Specify analytical working distance range (in mm)</p> <p>Provide OEM documents.</p>	
		<p>Features for mixing of different signals mentioned above at any ratio, color imaging, 3D chemical mapping with EDS.</p>	Essential	...	
		<p>Artifacts free imaging of non-conductive and magnetic samples shall be demonstrated.</p>	Essential	<p>Specify in details about appropriate Charge Balancing and Drift Compensation techniques.</p> <p>Provide OEM Document.</p>	
		<p>IR and color CCD cameras for sample navigation and top-down images.</p>	Essential	...	

3.2	Energy Dispersive X-ray Spectroscopy (EDS) Detector	<p>Automated LN₂ free, latest, proven high throughput SDD detector with 100 mm² or larger active crystal area with advanced electronic processors and suitable software optimized for high and low atomic number, high kV and low kV (≤ 3.5 kV) analysis with maximum live functionalities.</p> <p>Detector geometry designed such a way that detects only X-rays from the area being excited by the electron beam without stray peaks.</p> <p>Detector shall be equipped with suitable electron trap and robust (mechanical/chemical) window with superior transmission during high & low kV operations. Compatible for in-situ plasma cleaner.</p>	Essential	<p>Software controlled motorized insertion and retraction.</p> <p>Specify Take-Off Angle</p> <p>Provide OEM Document</p>	
		<p>Option should be provided for both automatic and manual indexing of possible true energy lines with correction.</p>	Essential	...	
		<p>Following published energy resolution at high-speed acquisition and high-performance stable electronic processors (drift corrected) to be guaranteed as per latest ISO 15632 at site:</p> <p>Mn-kα: < 127 eV at count rate of $\geq 1,30,000$ cps F-kα: < 64 eV at count rate of $\geq 1,30,000$ cps C-kα: < 56 eV at count rate of $\geq 1,30,000$ cps</p> <p>Preferred:</p> <p>Mn-kα: < 125 eV at count rate of $\geq 1,30,000$ cps F-kα: < 60 eV at count rate of $\geq 1,30,000$ cps C-kα: < 50 eV at count rate of $\geq 1,30,000$ cps</p>	Essential	<p>Specify analytical working distance for the best signal collection.</p> <p>Overall $\geq 70,00,000$ counts per minute.</p> <p>Peak shift and resolution should < 1 eV between < 5,000 cps and > 1,00,000 cps.</p>	
			Specify minimum dwell time.		

	Detector Sensitivity: Range from Be (4) to Cf (98) .	Essential	Li (3) detection is preferred	
	Number of Channels .	Essential	Specify Range of Channels and its selections.	
	Analytical Accuracy: ± 1% or Better.	Essential	Specify. Analytical accuracy grade of > 3σ is preferred. Provide OEM documents.	
	Concentration Detection Limit (Map and Spectra): ≤ 1000 ppm / ≤ 0.001 % mass fraction / ≤ 0.1 wt %.	Essential	Specify minimum possible limit. Provide OEM documents.	
	Estimation of Uncertainty of Measurement (UOM) as per ISO/GUM using NIST SRM 482 (Au-Cu alloy) or similar standard.	Essential	Specify in detail.	
	Automated large area (full travel range of stage) unattended analysis with drift corrected high resolution datasets (8kx8k pixels or more of images and maps) of (a) large area acquisition (b) multiple samples (c) different stage locations and (d) multiple regions of interest on a single sample data acquisition and report generation. System should have following features,	Essential	Specify in detail.	

		<p>i. Large number of individual fields can be acquired during each large area mapping.</p> <p>ii. Simultaneous imaging and analysis.</p> <p>iii. Individual images of 8Kx8K pixels or more resolution.</p> <p>iv. Individual X-ray maps of 4Kx4K pixels or more resolution.</p> <p>v. Pause and resume job any time.</p> <p>vi. Automatic alignment of images and X-ray maps.</p> <p>vii. Automatic focus, brightness and contrast of images.</p> <p>viii. Montaged image and map data of 64 million pixels or more.</p> <p>ix. Shape selection: Polygon-arbitrary, elliptical, rectangular, etc.</p> <p>Software should have Image Registration, sample location features and do simultaneously data collection and analysis of the data at any time during or after the measurement.</p>	Essential	Specify in detail.	
		<p>Navigator based Standard and Standard-less most accurate True Quantitative Analysis at high kV and low kV based on latest ZAF, $\phi\rho z$ with XPP matrix corrections (k ratio, peak deconvolution, background correction and matrix correction algorithms): The EDS system shall capable of drift corrected high resolution automatic live imaging with spectrum, live phase mapping, live chemical mapping, selective element mapping, live line scan, selected area analysis, particle analysis, multi-point analysis, Data comparison, etc. Live features should have HD video quality.</p>	Essential	Features for calculation of true quantification - Apparent Concentration, Weight%, Atomic%, Oxide%, nitride%, sulfide% and qualitative analysis with discrete colour code shall be provided .	
		<p>EDS which is coplanar to SE, EBSD and other analytical detectors and can be used simultaneously.</p>	Essential	...	

		Chemical Composition Analysis: Built-in latest library/database shall support high and low atomic number & high kV and low kV (≤ 3.5 kV) elements analysis of Apparent Concentration, Weight %, Atomic %, Oxide %, nitride %, sulfide %, element by difference, stoichiometric binary-ternary-quaternary, ionic compounds, minerals, etc.	Essential	Provide OEM Document	
		Binning factor – pre & post acquisition	Essential	Specify available selection	
		Should have provision to do regular calibration with software interface	Essential	...	
		The software should have provision to add user's standards for improved quantitative Analysis.	Essential	...	
		The EDS system should have a feature to separate the mapping information when recorded from overlapped peaks.	Essential	...	
		Mapping with spectral imaging to reconstruct EDS spectrums from stored Map data	Essential	...	
4	Multi-Axis Precision Stage	High precision 5 axis motorized Eucentric stage with stage travel range equivalent to or better than X: 100 mm or higher Y: 100 mm or higher Z: 45 mm or higher Tilt: $\leq -4^\circ$ to $\geq 70^\circ$ (and appropriate for EBSD) Rotation: 360° (continuous) Position Repeatability: within $\pm 3 \mu\text{m}$ (narrow range is better) Minimum Step movement in all axis: < 100 nm	Essential	Specify in details Backlash error should be less than position repeatability and compensated automatically during analysis. Readouts/display for both stage set and current position for	

		Payload: 500 g or more at any tilt position (Stage drift not accepted)		each axis. Provide OEM Documents. Specify payload with & without tilt.	
		Continuous movement with the speed linked to magnification.	Essential	...	
		Click centre and zoom.	Essential	...	
		Stage returns to location of any stored image.	Essential	...	
		Stage controlled through Joystick as well as software.	Essential	...	
		Stage should accommodate sample having diameter of 150 mm (6 inches) or wider and height of 40 mm or taller of any shape.	Essential	specify	
5	High Vacuum System	Heavy duty, robust and highly performance vacuum system.	Essential	...	
		System should free from oil, noise & vibration . Working vacuum (1x10⁻⁵ mbar) should build in < 4 minutes .	Essential	Specify	
		Fully automatic PC controlled vacuum system with status display on computer GUI.	Essential	Should display column vacuum, chamber vacuum, etc.	
		Vacuum system shall have Turbo Molecular Pump inline with oil free Secondary Pump and minimum two Sputter Ion/Ion Getter Pumps for FE Gun.	Essential	Specify Provide OEM documents	

		Automatic protection of vacuum system against failures of power, water supply and pump.	Essential	Provide OEM documents	
6	User Interface	Keyboard, Mouse, Joystick, Multifunctional Control Panel for control and adjustment of frequently used SEM parameters like focus, magnification, stigmation, wobbling, scan rotation, scan speed, image capture, brightness, contrast, stage all axis control , etc.	Essential	...	
		By pressing an AUTO button, the user should be able to auto-focus, auto-stigmation, auto-wobbling and automatically adjust the brightness/ contrast ratio of the image, etc.	Essential	All these auto functions preferably available in multi-functional control panel. Auto function shall applicable for entire range of magnification mentioned in <i>Sl.No. 1.5</i> .	
7	Computer Workstations A latest high-end proven computer workstations shall be provided for high-speed & high-volume data acquisition and real time data processing. Workstation should have following minimum features for both Microscope and EDS separately are:	Latest OS software, multi-tasking high performance reliable processors having Storage Capacity: 4 TB or more . Workstation shall have CD&DVD read and write option, multipoint LAN, multiple USB ports, a separate ether net card for data transfer via LAN network. Preferred Configuration: Base Clock Speed: > 3.1 GHz RAM: ≥ 64 GB Cores: 24 or higher Caches: 33 MB or better Graphics Card: ≥ 16 GB	Essential	Specify in details.	

		Feature for remote diagnosis of the microscope and EDS.	Essential	...	
		Suitable and separate ultra-high-definition (UHD) resolution wide screens (32" or 34") for FESEM and EDS shall be provided. Screen shall display maximum control menus for quick optimization of analysis.	Essential	Specify	
		All workstations should interactive each other and connected with high-speed and high bandwidth communication devices.	Essential	Specify in details.	
8	Site Preparation	Supplier shall provide essential accessories with proper isolations like compressor, chiller, computer tables, work tables, etc with suitable cables, tubes and fittings.	Essential	...	
		The supplier shall indicate all site requirements for stable uninterrupted equipment operation.	Essential	...	
		Supplier shall visit well in advance before arriving system to the site and involve to prepare site and provide necessary suggestions to install new system.	Essential	...	
		EMF/EMI/EMC, NVH, etc testing and validation shall be carried out by supplier before arriving system at the site free of cost.	Essential	...	
		Electrical Power: Provide required power connections (as per Indian standard) with ratings.	Essential	Specify	
9	Installation, Testing, Commissioning and Training	<p>Unloading, unpacking, installation, testing and commissioning to be carried out by a factory trained engineers at CMTI must done by supplier free of cost.</p> <p>Following pre-dispatch equipment audit, comprehensive training to ensure the equipment specifications, smooth daily operation and maintenance shall be provided at free of cost by the manufacturer,</p>	Essential	...	

		<ul style="list-style-type: none"> • Basic Training: For a batch of CMTI personals for 5 business days at site immediate after installation. • Advance Training: For a batch of CMTI personals for 5 business days at site after 3 months from installation. • Pre-dispatch Equipment Audit: Manufacturer shall arrange free pre-dispatch equipment audit for two CMTI personals on verification of specifications, hardware & software and training on operation, maintenance, application and safety at manufacturer place includes transport, accommodation & hospitality for period of one business week. 			
		Advance level training on FESEM and EDS calibration (with estimation of uncertainty) shall be provided. Software should have calibration feature with restricted Log-in for laboratory manager.	Essential	...	
10	Spares and Reference Standards (CRMs) with valid Traceability Certificates	Field Emitter electron Gun including Installation cost - 1 No. Supply Against CMTI request on <u>as and when</u> basis.	Essential	Against request.	CMTI
		<p>Supplier should provide necessary reference standards which are required to demonstrate manufacturer-claims and acceptance criteria/technical specifications, periodic calibration, performance check, etc including following standards, spares and consumables for smooth operations.</p> <p>Source of supply and calibration laboratory contact details shall be provided.</p> <p>Vendor should assist during re-calibration.</p>	Essential	...	

	<p>FESEM: High & Ultra High Resolution Standard such as MRS-6 Magnification Reference Standard (<i>as per Sl.No. 1.5</i>), 3D calibration standard (<i>as per Sl.No. 3.1.B.3</i>), Gold on carbon (<i>Sl.No. 1.4</i>), Faraday cup, Brass duplex standard for BSE calibration, etc.</p>	Essential	CRMs, Standards, etc with Valid traceability Certificate shall be provided.	
	<p>EDS: To prove and demonstrate EDS parameters specified in Sl.No.3.2 (Resolution, Sensitivity, Accuracy, Detection Limit, etc), Universal Certified Reference Material (CRMs/SRMs) standard for high kV and low kV analysis comprising sets of pure elements, oxides, nitrides, sulfide, stoichiometric binary-ternary-quaternary, ionic compounds, minerals, etc standards covering most analytical applications shall be provided. (For Example: NIST SRM 482, 1874, 1875; Low Carbon Analysis Block (NIST source) & Universal Standard Block, Minerals Blocks including Corundum, Quartz, Albite, Orthoclase, etc from NIST-USA, MAC-UK or Equivalent Laboratory).</p>	Essential	All Certificates should be latest and preferably not be older than 45 days from the date of FESEM+EDS dispatch.	
	<p>Essential spares and consumables like apertures and kits, metal sealers & rings, O-rings, fuses, etc for down-time free and trouble-free operation of the microscope for 3 years.</p>	Essential	...	
	<p>An essential tool kits for handling samples and maintenance of the microscope and accessories shall be provided.</p>	Essential	...	
	<p>The supplier should guarantee that all spares and services (both hardware and software) should be available for 7 years from the date of discontinuation of the model.</p>	Essential	Guarantee for 10 years or more is preferred. Provide letter.	

11	Materials to be Used	Overall hardware's including third party components should be made-up of highest-grade & proven material guarantee that satisfy specifications mentioned everywhere in this tender, radiational shield, minimal wear & tear, better accuracy and stability, improved life expectancy of equipment and accessories.	Specify	Specify materials details with support of OEM Documents.	
		Cleanroom Compatibility: System hardware's and parts should be compatible for cleanroom class 1000 .	Essential	Provide OEM Document	
12	Manuals and Documents (in English)	<p>2 hard copies and one soft copy of appropriate operational and maintenance manuals of the quoted model, accessories & attachments shall be provided.</p> <p>Following documents should be provided along with equipment's:</p> <ul style="list-style-type: none"> • Trouble shootings manual: Should provide appropriate solutions/guide for each error with codes assist during trouble shootings. • Service manual • Programming Manual • Spare parts – List with price and source of supply • Description of control and interfaces • Manuals of bought out items incorporated in the system • Custom made third-party components, ICs and their sources • Circuit diagram & test charts • Foundation Plan 	Essential	...	
13	Software and Backup	Software's (both OEM and third parties) shall be a professional versions and perpetual licences shall be provided.	Essential	...	

		One set of complete softwares (both OEM and third party) should be provided in suitable permanent store media.	Essential	Backup shall be used in the event of software failure, data corruption, etc	
		Software help feature should available for instant reference during analysis.	Essential	...	
14	Safety	All form radiation shield, beam blower and high voltage shield should be provided. Occupational radiation exposure level shall not exceed the AERB/US-FDA/ICRP recommended limit.	Essential	Produce Certificate	
		All Safety interlock should be provided.	Essential	...	
		Noticeable hazardous warning labels should be pasted at appropriate parts.	Essential	...	
		Touch alarm safety detector for specimen stage and detectors.	Essential	Contactless alarm is preferred	
		All necessary safety and protection of operators and equipment's should be provided.	Essential	...	

15	Comprehensive warranty and after sales service support (applications & technical)	<p>Complete equipment's including FE-Gun source, third party systems/parts/components, attachments and utilities shall carry 3 years of comprehensive warranty. Warranty starts from the date of issue of final acceptance certification.</p> <p>During every year of warranty period minimum TWO scheduled services & any number of emergency request from CMTI, Bangalore shall be arranged by supplier at free of cost which includes:</p> <ul style="list-style-type: none"> • Turnaround Time: 48 hours from the time of reporting • Routine Maintenance • Performance Checks • Re-alignment and calibration • Repair & Replacement of defective components and parts. • Time-to-Time Software updates and patches 	Essential	...	
		<p>Any parts and spares replaced during failure in the warranty period must be supplied and installed within 48 hours from the time of reporting without any cost implication to CMTI.</p>	Essential	If parts and spares come from factory, Vendor should arrange the same within 2 weeks and installed from the time of reporting at free of cost	

		<p>Local Service Support: Supplier shall have service center with trained service engineers in India. Service center address, contact person details, phone/fax numbers, email shall be provided by vendor.</p> <p>Unless unavoidable circumstances (act-of-God, national emergency, pandemic, etc), guarantee that equipment should not down for 10 continuous working days.</p>	Essential	Preferably in Bangalore Provide Letter	
		CMTI should be intimated in advance if the quoted model is discontinued.	Essential	...	
16	Delivery Period	24-28 weeks from the date of Letter of Acceptance	Essential	Early delivery is highly preferred	
17	Delivery of Equipment	The vendor should quote the final price on the basis of delivery of equipment to Central Manufacturing Technology Institute (CMTI), Bangalore (final destination) which includes all charges including logistics, insurance, customs and shipping charges.	Essential	...	
18	Other Terms	Quote must be complete in all respect (hardware & software) with state of art latest technology available in the market.	Essential	...	
		The quoted model should be latest version (hardware & software) and support in all respect for specified tasks and future upgradation.	Essential	Provide Documental proof.	
		Free software enhancement, upgradation and support should be provided for 7 years where no hardware change is required.	Essential	Support for 10 years is preferred. Provide letter	
		Date of manufacturing of the equipment should be after the placement of purchase order and all the integrated parts should be brand new.	Essential	...	

		All necessary items to demonstrate the specifications even if not explicitly mentioned here shall be included in the scope of the supply.	Essential	...	
		All relevant technical notes and model brochures shall be provided along with the hard copy of tender document.	Essential	...	
19	Eligibility Criteria	Vendor shall be Wholly-Owned Subsidiary of OEM in India or OEM's own Branch/Sales Office in India and who can fulfill after sales service as per <i>Sl.No. 15</i> is eligible to participate in this tender.	Essential	Vendor who is operating in Bangalore is preferred. Provide Letter.	
		All the listed software and hardware items in tender, that vendor quotes should be preferably be a catalogue product and reflected in OEM official document like brochure.	Essential	...	
		The vendor should meet all the technical specifications to qualify the bid. The vendor has to furnish the values/units/parameters against each CMTI requirement in the compliance column. Offer without this information or false claims will be rejected without any further reference.	Essential	...	
		The bidder provides all necessary technical information documents/data sheets & filled compliance column as per the technical specifications.	Essential	...	
		The manufacturer has to sign and stamp (company seal) on all the pages of technical compliance sheet.	Essential	...	
		The vendor should provide proof of after sales- service and availability of spares and accessories.	Essential	...	
		Only models launched most recently as on date of publishing this tender that provide the latest technology should be quoted.	Essential	...	

		The supplier branch must provide the release note from the principal.	Essential	...	
		The vendor should submit the list of last three years equipment's of same specifications or similar installations (minimum 5) from government organizations with date, equipment performance & post installation service support certificates from the organizations with complete contact details along with the quotations, so that CMTI scientists and committee members may visit these installations and evaluate the system as part of tender evaluation. This is criteria will be used for evaluation of the quoted system for technical suitability and offers without this information will be rejected without any further reference.	Essential	All five Equipment's should have completed at least 12 months of satisfactory performance and same as certified by the organizations.	
20	Additional Information for valuation purpose only As on date of quotation	Cost for One-Time Field Emitter Gun Replacement including installation	Essential	Quote separately	
		Service AMC cost per year	Essential	Quote separately	
		Cost for one time visit of service engineer per person per day	Essential	Quote separately	
		Spare parts availability in India	Essential	Yes/No	
		System up-time from FE Gun replacement (in hours)	Essential	Specify	
		Total Power Consumption for 24 hours in kWh	Essential	Specify	
		Rate of Heat Dissipation	Essential	Specify in details. List-out components with Rate	

<p>21</p> <p>Optional Items</p> <p>Only quote appropriate difference amount, if the optional item needs to be replaced with basic configuration/existing elements in the equipment.</p>	<p>Optional material standards, spares and consumables with self-life for smooth operation of the microscope for at least five years should be listed and prices of the same shall be listed.</p>	Optional	Quote separately	
	<p>Scanning Transmission Electron Microscope (STEM) (Retractable-motorized) - Resolution: ≤ 0.7 nm @ 30kV – 2D & 3D - BF, ABF, ADF, HAADF, etc.</p>	Optional	Quote separately	
	<p>High Resolution Electron Back Scattered Diffraction (EBSD) (Retractable-motorized) with FSDs Module, insertion & elevation control -CMOS-drift corrected-indexing rates of > 4000 patterns per second-ISO 24173 & 13067 compliances- image resolution:1244x1024 pixel, simultaneously operation with EDS, WDS, etc, Best fit and refinement: Phase identification-fractions-distributions- transformation, Grain boundary characterisation, CSL boundary characterisation, Global & local texture, Recrystallised/deformed fractions, Substructure analysis, Orientation & misorientation relationships between grains/phases, twin domain analysis. High Speed Angular Resolution: $\leq 0.01^\circ$</p>	Optional	Quote separately	
	<p>Variable/Low Pressure chamber environment: Chamber Pressure: ≥ 300 Pascal; Image Resolution: ≤ 1.4 nm @ 30 Pascal, 15kV. Suitable software controlled dry vacuum system, apertures, valves, compatible detectors [secondary electron detectors, back scattered detector(s), EDS] and other necessary hardware shall be provided.</p>	Optional	Quote separately	
	<p>In-situ Micro-Nano (Pico-Nano-Micro indentation, tensile) Tester with Heating/Cooling Module ($\leq -80^\circ$ C to $\geq 1000^\circ$ C. Specify in details about load range and fixtures.</p>	Optional	Quote separately	

	Plasma Cleaner module for sample & chamber cleaning. Specify in details about load range and fixtures. Specify gas/ plasma selectivity	Optional	Quote separately	
	Electrical Multi-Probing (I-V) module with Controller (Minimum two probes) Specify minimum to maximum supply measurement range for I & V. Specify details about probes and number of probes.	Optional	Quote separately	
	Large Stage X/Y travel range of ≥ 150 mm with Z: ≥ 45 mm	Optional	Quote separately	
	Sample Load Lock and transfer Module Accommodate sample of 150 mm X 150 mm or wider and height of 40 mm or taller of any shape.	Optional	Quote separately	
	μ -XRF Module: Detection limit ≤ 10 ppm, Spot Size: ≤ 40 μ m, Resolution: <135 eV, Excitation Energy: upto 30 kV, simultaneously operation with EDS, EBSD, WDS, etc, in built latest standard database with background correction and algorithm for automated & manual identification of elements, true quantification & mapping, large area (navigation through SEM stage) including thin film and multi-layer analysis, unattended/automated work flow - to do list/queue. Preferred: ISO compliance of detector and analysis.	Optional	Quote separately Specify Resolution, Detection Range, Detection Limit, Spot Size, Analytical Working Distance, etc.	
	Non-destructive multilayer thickness measurement by EDS technique	Optional	Quote separately	
	Impurity and inclusion analysis as per ISO 4967/ ASTM E2142	Optional	Quote separately for FESEM and EDS	
	Technical Cleanliness as per latest ISO 16232	Optional	Quote separately for FESEM and EDS	

Part-B: Acceptance Criteria

Field Emission Scanning Electron Microscope with Energy Dispersive X-ray Spectroscopy Analyzer

Important Notes to Vendor:

- (i) Purchased equipment should meet all the technical specification mentioned in the tender document and acceptance criteria.
- (ii) Complete technical specifications (both Essential by CMTI & Vendor Specified) in the tender document and acceptance criteria shall undergo physical verification, functionality/performance check, demonstration, verification of certificates and documents at manufacturer place and at installation site CMTI.
- (iii) **International standards** like ISO, ASTM, scientifically proven and globally accepted test procedures/guidelines shall be followed during calibration, functionality check and demonstration.
- (iv) **CMTI requested material standards with valid traceability certificate** - traceable to SI units (*refer PART-A:SI.No.10*) and **CRMs and SRMs from NIST-USA** or equivalent organizations recommended material standards with **valid traceability certificate** from accredited laboratory shall be accepted during calibration, functionality check and demonstration.
- (v) All forms of **Certificates, Documents, Letters**, etc shall be **in English** and should not be older than **45 calendar days** from the date of dispatch of complete system.
- (vi) This is tentative Acceptance Criteria and Final Acceptance Criteria will be shared along with Purchase Order

Sl. No.	Features Description	Technical Specification	Acceptance Criteria
1	Advanced Stable Electron Optical Engine - Latest Version – Highest Analytical Performance and Continuous Operation		
1.1	Electron beam source	Highly Stable Schottky Field Emitter .	Factory Certificate
		Useful Emitter Life: > 15,000 Hrs. Field Emitter shall prove following technical parameters mentioned everywhere in these specifications at any point of time throughout useful life.	Factory Certificate

		Electron beam energy spread: ___ eV.	Factory Certificate	
1.2	Electron Beam Acceleration Voltage Range	Minimum: 200 V or less (Landing energy shall be 20 eV or less) Maximum: 30 kV or more Minimum step size: 10 V	Demonstration	
1.3	Electron Beam Current Range (on sample) Stable electron optics should deliver optimized beam at all beam currents with minimum aberrations for ultra-high-resolution imaging and optimized convergence angle to ensure minimum focus change. Electron optics should be computer controlled provides the smallest probe diameter with the optimum probe geometry at low beam currents as well as high beam currents for high resolution analytical performance.	Minimum: 5 pA or less Maximum: 100 nA or more	Specimen current Monitor (SCM) for real time (actual) probe current measurement on sample.	Demonstration
		Beam current stability should be < 0.2% for 1 - 2 hours or 0.4% for 10 hours or better for continuous operation.	Stability for 4, 8, 16 & 24 hours	Demonstration
		Probe Size at 30 µm aperture & 1 nA probe current (or) size of probe which is using for equipment calibration and fulfil <i>Sl.No. 1.4</i> .		Factory Certificate
		Arbitrary probe current settings.		Demonstration
		System should have appropriate hardware to correct/minimize aberrations (spherical & chromatic) and adjust probe current with software interface. High Resolution should be demonstrated without condition.		Demonstration
1.4	Resolution All claims should be determined and demonstrated at the site during the	≤ 0.7 nm at 15 kV	Resolutions at 15 kV, 1 kV, 0.5 kV and 0.2 kV with & without sample bias and corresponding analytical working distance. The definition of resolution and the method	Demonstration and OEM document.
		≤ 1.2 nm at 1 kV		

	<p>installation using appropriate high resolution standards (conductive, non-conductive and magnetic samples).</p> <p>Image sharpness shall be evaluated as per latest ISO 24597.</p> <p>Vendor shall demonstrate following best achievable resolution at accelerating voltage of</p>		<p>used to determine the resolution should be clearly specified.</p> <p><i>Stable resolution standard</i> shall be supplied by vendor.</p>	
1.5	<p>Useful Magnification</p>	<p>Minimum: 30X or less Maximum: 20,00,000X or more.</p>	<p>MRS-6 Magnification Reference Standard (stub mounted) <i>certified reference Standard along with Calibration certificate from an accredited laboratory</i> with NIST-USA or NPL-UK traceability shall be used and supplied by vendor.</p>	<p>Demonstration</p> <p>a) Calibration at manufacturer place and installation site using certified standard with traceability.</p> <p>b) Detailed step by step equipment calibration procedure shall be provided.</p> <p>c) Advance level training on FESEM calibration (with estimation of uncertainty) shall be</p>
<p>Measurement calibration with uncertainty of measurement (UOM) should be performed using mentioned standard (MRS-6) at various magnifications (like 50X; 100X; 500X; 1,000X; 10,000X; 1,00,000X and 10,00,000X) as per latest ISO 16700 guidelines.</p>				

				provided. Software should have calibration feature having restricted Log-in for laboratory manager.
		Scan Speed per pixel: 25 ns or better	Maximum Speed: ___ ns	Factory Documents
1.6	Optics features	The microscope should employ an auto-alignment correcting procedure that automatically optimize all the lens parameters of electron optics like auto - focus, stigmatism, wobbling and brightness/contrast, gun alignment , etc for ultimate imaging, analytical performance and full-fill <i>Sl.No.1.7</i> .		Demonstration
		Optics lens assembly shall be the latest version of electromagnetic-electrostatic lens/super hybrid lens/ compound lens or equivalent lens assembly [non-immersion/field free optics] for getting high resolution imaging of various nature of samples including magnetic and non-conductive materials with shorter working distance. The lens assembly should be water cooled . Electron Optics column shall be bakeable.		Factory Documents
		Complete System Self-Diagnosis		Demonstration
		System Reset Option		Factory Documents
1.7	Analysis features	System should have feature to perform distortion free high throughput automated large area (full travel range of stage having image store resolution capability of upto 32k × 32k pixels or more) imaging and analysis. Following features shall be provided, <ul style="list-style-type: none"> i. Simultaneous multiple signal (SE, BSE, EDS, WDS, EBSD, etc) acquisition and analysis according to user-specific pre-defined conditions ii. 2D & critical dimensional measurement with sub-nanometer resolution iii. Data review, resume and reacquisition iv. Video generation v. Ability to do Auto-focus, auto-stigmatism, auto-wobbling and auto-brightness/contrast of full area data acquisition. 		Demonstration with suitable metrological artifacts.

		<ul style="list-style-type: none"> vi. Ability to do auto quantification of filling factors like material coverage & distribution, multiphase, voids & porosity, grain sizes, particle size, etc. vii. Shape selection: Polygon-arbitrary, elliptical, rectangular, etc. viii. Multi-list job and sequence creation ix. Can embedded with other modules like EDS, EBSD, etc. x. Automatic integration of large area stitching without overlap. 	
		System should deliver data at the highest performance in all respect. Software should have features for analysis of the data at any time during or after the measurement.	Demonstration
		Artificial Intelligent (AI) algorithms for unattended / unsupervised and continuous operation.	Factory Documents and Demonstration
		Operation of microscope in various modes including data acquisition, data analysis, daily microscope maintenance, etc should be controlled by the software.	Software Functionality check and Demonstration
		Complete flexible software architecture package (both Own and Third Party) with multi user (different hierarchy) GUI environment and multi monitor supports. Measurement and processing tools, annotations, etc shall available in GUI.	Software Functionality check and Demonstration
1.8	Field of View (X&Y) without distortion	<p>Maximum image FOV / Area Under View at analytical working distance where will get best EDS signals, secondary electron and backscattered electron signals.</p> <p>X= ___mm Y= ___mm Analytical Working Distance: ___(in mm)</p>	Demonstration with suitable metrological artefact
1.9	Apertures	<p>Motorized Apertures – Shall have perfect circularity made-up of hard material suitable high-resolution imaging and analytical measurement.</p> <p>Should be controlled and auto-alignment by software.</p> <p>Available aperture sizes: 1. ___, 2. ___, 3. ___,</p>	Factory Document and Demonstration
2	Field upgradable configuration supports maximum analytical operations	FESEM platform must support onsite/field upgradation of EBSD, STEM, WDS, μ-XRF, Cathodoluminescence, E-beam Lithography, In-situ Tensile Tester with Heating/Cooling module, Micro-manipulators, Electrical Probing, Plasma Cleaner, etc.	Factory Design Document and Physical Verification

3	High Resolution Analytical Detectors with Seamless Interfaces have an Excellent Signal-to-Noise Ratio and Detection Efficiency			
3.1	Imaging Detectors	Geometrical positions of the high-resolution detectors should be well-arranged to perform imaging and analytical measurement simultaneously and analysis of the data at any time during or after the measurement.	Physical Verification and Demonstration	
		System should have following detectors (A & B) including all other standard detectors optimized for best performance at high and low kV artifacts free imaging having pixel store resolution capability from 1kx1k to 6kx4k pixels or more including beam sensitive, non-conductive and magnetic samples. Detectors shall be compatible for in-situ plasma cleaner.	Demonstration	
		A. Secondary Electron Detectors (a) In column/lens detectors and (b) Chamber/wall mounted detectors	Physical Verification, Functionality check and Demonstration	
		B. Back Scattered Electron detector should have features for 1. Non-contact complete 2D and 3D surface profile measurement of following analysis with accuracy of the height measurement is $\leq 1\%$ of Field of View and reports with NIST metrological traceability . (a) Surface Texture analysis as per latest ISO 25178 (b) Surface Roughness/ waviness analysis as per latest ISO 16610 2. High speed nanoscale topographical contrast and compositional/ material contrast images with energy filters during high and low kV operation. 3. Certified 3D calibration standard with NIST or equivalent traceability shall be provided	Measurement accuracy grade of > 3σ is preferred. Analytical Working Distance: _mm	Document, Physical Verification, Functionality check and Demonstration
		Features for mixing of different signals mentioned above at any ratio, color imaging, 3D chemical mapping with EDS.	Demonstration	

		Artifacts free imaging of non-conductive and magnetic samples shall be demonstrated.		Demonstration with appropriate Charge Balancing and Drift Compensation techniques.
		IR and color CCD cameras for sample navigation and top-down images.		Physical Verification and Functionality check
3.2	Energy Dispersive X-ray Spectroscopy (EDS) Detector	<p>Automated LN₂ free, latest, proven high throughput SDD detector with 100 mm² or larger active crystal area with advanced electronic processors and suitable software optimized for high and low atomic number, high kV and low kV (≤ 3.5 kV) analysis with maximum live functionalities.</p> <p>Detector geometry designed such a way that detects only X-rays from the area being excited by the electron beam without stray peaks.</p> <p>Detector shall be equipped with suitable electron trap and robust (mechanical/chemical) window with superior transmission during high and low kV operations.</p> <p>Compatible for in-situ plasma cleaner.</p>	Motorized insertion and retraction	Documents, Physical Verification, Functionality check and demonstration
		Option should be provided for both automatic and manual indexing of possible true energy lines with correction.		Demonstration
		Following published energy resolution at high-speed acquisition and high-performance stable electronic processors (drift corrected) to be guaranteed as per latest ISO 15632 at site:	Overall ≥ 70,00,000 counts per minute. Peak shift and	a) Demonstration resolution test with suitable CRM

	<p>Mn-α: < 127 eV at count rate of $\geq 1,30,000$ cps F-α: < 64 eV at count rate of $\geq 1,30,000$ cps C-α: < 56 eV at count rate of $\geq 1,30,000$ cps Preferred: Mn-α: < 125 eV at count rate of $\geq 1,30,000$ cps F-α: < 60 eV at count rate of $\geq 1,30,000$ cps C-α: < 50 eV at count rate of $\geq 1,30,000$ cps</p>	<p>resolution should < 1 eV between < 4,000 cps and > 4,00,000 cps. Minimum dwell time: _____</p>	<p>b) Best practice guide/ procedure shall be provided.</p>
	<p>Detector Sensitivity: Range from Be (4) to Cf (98)</p>	<p>Li (3) detection is highly preferred</p>	<p>Demonstration with suitable CRM</p>
	<p>Number of Channels</p>	<p>1. __, 2. __, 3. __,</p>	<p>Demonstration</p>
	<p>Analytical Accuracy: $\pm 1\%$ or Better</p>	<p>Analytical accuracy grade of $> 3\sigma$ is highly preferred.</p>	<p>a) Demonstration with suitable CRM/SRM with NIST traceability. b) Best practice guide/ procedure shall be provided.</p>
	<p>Concentration Detection Limit (Map and Spectra): ≤ 1000 ppm / ≤ 0.001 % mass fraction / ≤ 0.1 wt %</p>		<p>a) Demonstration with suitable CRM/SRM with NIST traceability. b) Best practice guide/ procedure shall be provided.</p>
	<p>Estimation of Uncertainty of Measurement (UOM) as per ISO/GUM.</p>		<p>Demonstration on NIST SRM 482 (Au-Cu alloy) or similar standard</p>
	<p>Automated large area (full travel range of stage) unattended analysis with high resolution datasets (8kx8k pixels or more of images and maps) of (a) large area acquisition (b) multiple samples (c) different stage locations and (d) multiple regions of interest on a single sample data acquisition and report generation. System should have following features,</p>		<p>Demonstration with suitable metrological artefacts.</p>

		<ul style="list-style-type: none"> i. Large number of individual fields can be acquired during each large area mapping. ii. Simultaneous imaging and analysis. iii. Individual images of 8Kx8K pixels or more resolution. iv. Individual X-ray maps of 4Kx4K pixels or more resolution. v. Pause and resume job any time. vi. Automatic alignment of images and X-ray maps. vii. Automatic focus, brightness and contrast of images. viii. Montaged image and map data of 64 million pixels or more. ix. Shape selection: Polygon-arbitrary, elliptical, rectangular, etc. <p>Software should have Image Registration, sample location features and do simultaneously data collection and analysis of the data at any time during or after the measurement.</p>		
		<p>Navigator based Standard and Standard-less most accurate True Quantitative Analysis high kV and low kV based on latest ZAF, $\phi\rho z$ with XPP matrix corrections (k ratio, peak deconvolution, background correction and matrix correction algorithms): The EDS system shall capable of drift corrected high resolution automatic live imaging with spectrum, live phase mapping, live chemical mapping, selective element mapping, live line scan, selected area analysis, particle analysis, multi-point analysis, Data comparison, etc.</p> <p>Live features should have HD video quality.</p>	<p>Features for calculation of true quantification like display in Apparent Concentration, Weight%, Atomic%, Oxide%, nitride%, sulfide% and qualitative analysis with discrete colour code shall be provided</p>	<p>Demonstration with suitable CRM</p>
		<p>EDS which is coplanar to SE, EBSD and other analytical detectors and can be used simultaneously.</p>		<p>Physical Verification and Demonstration</p>
		<p>Chemical Composition Analysis: Built-in latest library/database shall support high and low atomic number & high kV and low kV (≤ 3.5 kV) elements analysis of Apparent Concentration, Weight %, Atomic %, Oxide %, nitride %, sulfide %, element by difference, stoichiometric binary-ternary-quaternary, ionic compounds, minerals, etc.</p>		<p>Demonstration with suitable CRM</p>
		<p>Binning factor – pre & post acquisition</p>	<p>1.__, 2.__, 3.__,</p>	<p>Demonstration</p>

		Should have provision to do regular calibration with software interface		a) Calibration at installation site using certified standard with traceability. b) Detailed step by step equipment calibration procedure shall be provided with restricted Log-in for laboratory manager.
		The software should have provision to add user's standards for improved quantitative Analysis.		Demonstration
		The EDS system should have a feature to separate the mapping information when recorded from overlapped peaks.		Demonstration
		Mapping with spectral imaging to reconstruct EDS spectrums from stored Map data		Demonstration
4	Multi-Axis Precision Stage	<p>High precision 5 axis motorized Eucentric stage with stage travel range equivalent to or better than</p> <p>X: 100 mm or higher</p> <p>Y: 100 mm or higher</p> <p>Z: 45 mm or higher</p> <p>Tilt: $\leq -4^\circ$ to $\geq 70^\circ$ (and appropriate for EBSD)</p> <p>Rotation: 360° (continuous)</p>	<p>Backlash error should be less than position repeatability and compensated automatically during analysis.</p> <p>Readouts/display for both stage set and current position for each axis.</p>	Demonstration with suitable metrological artefact
		Position Repeatability: within $\pm 3 \mu\text{m}$ (narrow range is better)		Demonstrated using Laser Interferometer or by globally accepted test method

		Minimum Step movement in all axis: < 100 nm		Demonstrated using Laser Interferometer or by globally accepted test method
		Payload: 500 g or more at any tilt position (Stage drift not accepted)	Without Tilt: g With Tilt:.....g (Stage drift not accepted)	Demonstration
		Continuous movement with the speed linked to magnification.		Demonstration
		Click centre and zoom.		Demonstration
		Stage returns to location of any stored image.		Demonstration
		Stage controlled through Joystick as well as software.		Demonstration
		Stage should accommodate sample having diameter of 150 mm (6 inches) or wider and height of 40 mm or taller of any shape.		Demonstration
5	High Vacuum System	Heavy duty, robust and highly performance vacuum system.		Physical Verification and Functionality check
		System should free from oil, noise & vibration . Working vacuum (1x10⁻⁵ mbar) should build in < 4 minutes .		Physical Verification and Demonstration
		Fully automatic PC controlled vacuum system with status display on computer GUI.	Should display column vacuum, chamber vacuum, etc	Demonstration
		Vacuum system shall have Turbo Molecular Pump inline with oil free Secondary Pump and minimum two Sputter Ion/Ion Getter Pumps for FE Gun.		Physical Verification and Functionality check
		Automatic protection of vacuum system against failures of power, water supply and pump.		Documents and Demonstration

6	User Interface	Keyboard, Mouse, Joystick, Multifunctional Control Panel for control and adjustment of frequently used SEM parameters like focus, magnification, stigmatism, wobbling, scan rotation, scan speed, image capture, brightness, contrast, stage all axis control , etc.	Physical Verification and Functionality check
		By pressing an AUTO button, the user should be able to auto-focus, auto-stigmatism, auto-wobbling and automatically adjust the brightness/ contrast ratio of the image, etc.	Physical Verification and Functionality check
7	Computer Workstations A latest high-end proven computer workstations shall be provided for high-speed & high-volume data acquisition and real time data processing. Workstation should have following minimum features for both Microscope and EDS separately are:	Latest OS software, multi-tasking high performance reliable processors having Storage Capacity: 4 TB or more . Workstation shall have CD&DVD read and write option, multipoint LAN, multiple USB ports, a separate ether net card for data transfer via LAN network. Preferred Configuration: Base Clock Speed: > 3.1 GHz RAM: ≥ 64 GB Cores: 24 or higher Caches: 33 MB or better Graphics Card: ≥ 16 GB	Physical Verification and Functionality check
		Feature for remote diagnosis of the microscope and EDS.	Demonstration
		Suitable and separate ultra-high-definition (UHD) resolution wide screens (32" or 34") for FESEM and EDS shall be provided. Screen shall display maximum control menus for quick optimization of analysis.	Physical Verification and Functionality check
		All workstations should interactive each other and connected with high-speed and high bandwidth communication devices.	Physical Verification and Functionality check
8	Spares and Reference Standards (CRMs) with valid Traceability Certificates	Supplier should provide necessary reference standards which are required to demonstrate manufacturer-claims and acceptance criteria/technical specifications, periodic calibration, performance check, etc including following standards, spares and consumables for smooth operations. Source of supply and calibration laboratory contact details shall be provided. Vendor should assist during re-calibration.	Documents and Physical Verification

		FESEM: High & Ultra High Resolution Standard such as MRS-6 Magnification Reference Standard (as per <i>Sl.No. 1.5</i>), 3D calibration standard (as per <i>Sl.No. 3.1.B.3</i>), Gold on carbon (<i>Sl.No. 1.4</i>), Faraday cup, Brass duplex standard for BSE calibration , etc.	Certificate and Physical Verification
		EDS: To prove and demonstrate EDS parameters specified in <i>Sl.No.3.2</i> (Resolution, Sensitivity, Accuracy, Detection Limit, etc) Universal Certified Reference Material (CRMs/SRMs) standards for normal and low kV analysis comprising sets of pure elements, oxides, nitrides, sulfide, stoichiometric binary-ternary-quaternary, ionic compounds, minerals, etc standards covering all analytical applications shall be provided. (For Example: NIST SRM 482, 1874, 1875; Low Carbon Analysis Block (NIST source) & Universal Standard Block, Minerals Blocks including Corundum, Quartz, Albite, Orthoclase, etc from NIST-USA, MAC-UK or Equivalent Laboratory).	Certificate and Physical Verification
		All essential spares and consumables like apertures and kits, metal sealers & rings, O-rings, fuses, etc for down-time free and trouble-free operation of the microscope for 3 years .	Documents and Physical Verification
		Essential spares and consumables like apertures and kits, metal sealers & rings, O-rings, fuses, etc for down-time free and trouble-free operation of the microscope for 3 years .	Documents and Physical Verification
		An essential tool kits for handling samples and maintenance of the microscope and accessories shall be provided.	Documents and Physical Verification
		The supplier should guarantee that all spares and services (both hardware and software) should be available for 7 years (guarantee for >10 years is preferred) from the date of discontinuation of the model.	Letter from Factory
9	Materials Used	Overall hardware's including third party components should be made-up of highest-grade & proven material guarantee that satisfy specifications mentioned everywhere in this tender, radiational shield, minimal wear & tear, better accuracy and stability, improved life expectancy of equipment and accessories.	Factory Documents
		Cleanroom Compatibility: System hardware's and parts should compatible for cleanroom class 1000.	Factory Document

10	Manuals and Documents (in English)	<p>2 hard copies and one soft copy of appropriate operational and maintenance manuals of the quoted model, accessories & attachments shall be provided.</p> <p>Following documents should be provided along with equipment's:</p> <ul style="list-style-type: none"> • Trouble shootings manual: Should provide appropriate solutions/guide for each error with codes assist during trouble shootings. • Service manual • Programming Manual • Spare parts – List with price and source of supply • Description of control and interfaces • Manuals of bought out items incorporated in the system • Custom made third-party components, ICs and their sources • Circuit diagram & test charts • Foundation Plan 	Factory Documents and stored media verification
11	Software and Backup	<p>Software's (both OEM and third parties) shall be a professional versions and perpetual licences shall be provided.</p> <p>One set of complete softwares (both OEM and third party) should be provided in suitable permanent store media.</p> <p>Software help feature should available for instant reference during analysis.</p>	<p>Documents and Functionality check</p> <p>Verification of Stored media</p> <p>Demonstration</p>
12	Safety	<p>All form radiation shield, beam blanker and high voltage shield should be provided. Occupational radiation exposure level shall not exceed the AERB/US-FDA/ICRP recommended limit.</p> <p>All Safety interlock should be provided.</p> <p>Noticeable hazardous warning labels should be pasted at appropriate parts.</p> <p>Touch alarm safety detector for specimen stage and detectors.</p> <p>All necessary safety and protection of operators and equipment's should be provided.</p>	<p>Certificate and Physical Verification</p> <p>Physical Verification</p> <p>Physical Verification</p> <p>Factory Documents</p> <p>Factory Documents</p>

13	Comprehensive warranty and after sales service support (applications & technical)	Complete equipment's including FE-Gun source, third party systems/parts/components, attachments and utilities shall carry 3 years of comprehensive warranty. Warranty starts from the date of issue of final acceptance certification.		Letter from supplier
		During every year of warranty period minimum TWO scheduled services & any number of emergency request from CMTI, Bangalore shall be arranged by supplier at free of cost which includes: <ul style="list-style-type: none"> • Turnaround Time: 48 hours from the time of reporting • Routine Maintenance • Performance Checks • Re-alignment and calibration • Repair & Replacement of defective components and parts. • Time-to-Time Software updates and patches 		Letter from supplier
		Any parts and spares replaced during failure in the warranty period must be supplied and installed within 48 hours from the time of reporting without any cost implication to CMTI.	If parts and spares come from factory, Vendor should arrange the same within 2 weeks and installed from the time of reporting at free of cost	Letter from supplier
		Local Service Support: Supplier should have service center with trained service engineers in India. Service center address, contact person details, phone/fax numbers, email shall be provided by vendor. Unless unavoidable circumstances (act-of-God, national emergency, pandemic, etc), guarantee that equipment should not down for 10 continuous working days.	Preferably in Bangalore	Letter from supplier
		CMTI should be intimated in writing as soon as the quoted model is discontinued.		Letter from factory

14	Other Terms	Quote must be complete in all respect (hardware & software) with state of art latest technology available in the market.	Factory Documents
		The quoted model should be latest version (hardware & software) and support in all respect for specified tasks and future upgradation	Factory Documents
		Free software enhancement, upgradation and support should be provided for 7 years (Support for > 10 years is preferred) where no hardware change is required.	Letter from supplier
		Date of manufacturing of the equipment should be after the placement of purchase order and all the integrated parts should be brand new.	Factory Documents

CHAPTER - 5

PRICE SCHEDULE FORMS

PRICE SCHEDULE FOR GOODS BEING OFFERED FROM ABROAD

(Ignore if already filled in Bill of Quantity)

Name of the Bidder _____ TENDER No. _____

1	2	3	4	5	6	7		8		9
Sl. No.	Item Description	Country of origin	Unit	Quantity	Unit price	Total price (5x6)		Charges for Insurance & Transportation to port/place of destination		Total (7+8) CIF
						FOB (named port of shipment)	FCA (named place of delivery)	FOB (named port of shipment)	FCA (named place of delivery)	

Note: Total Bid price in foreign currency (in words) _____

Total Bid price in foreign currency (in figures) _____

- a. Indian agents name & address _____
- b. Installation, commissioning & training charges, if any _____

Signature of Bidder

Name:

Business Address

PRICE SCHEDULE FOR GOODS BEING OFFERED FROM INDIA

(Ignore if already filled in Bill of Quantity)

Name of the Bidder _____ TENDER No. _____

1	2	3	4	5	6	7	8	9	10	11
Sl	Item Description	Country of origin	Unit	Quantity	Ex-Works. Ex-warehouse Ex-show room off the shelf price (inclusive of all taxes already paid)	Total price Ex-Works. Ex-warehouse, Ex-show	GST	Packing & forwarding upto station of dispatch if any	Charges for Inland transportation, insurance up to Institute	Installation Commissioning and training charges If any

Total Bid price in Indian currency (in words) _____

Total Bid price in Indian currency (in figures) _____

Signature of Bidder

Name:

Business Address

CHAPTER - 6

CONTRACT FORM

Contract No. _____ Date: _____

THIS CONTRACT AGREEMENT is made
the [] day of [] month of, [] year

BETWEEN

The Central Manufacturing Technology Institute (CMTI), a registered Government of India Society under the administrative control of the Ministry of Heavy Industry and Public Enterprises, Government of India having its registered office at Tumkur Road, Bengaluru - 560022, Karnataka, India represented by _____ [Insert complete name and address of Purchaser (hereinafter called "the Purchaser"), and

[Insert name of Supplier], a corporation incorporated under the laws of [insert: country of Supplier] and having its principal place of business at [insert: address of Supplier] (hereinafter called "the Supplier").

WHEREAS the Purchaser invited Bids for certain Goods and ancillary Services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [insert Contract Price in words and figures, expressed in the Contract currency (ies)] (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract:
 - (a) This Contract Agreement
 - (b) Special Conditions of Contract
 - (c) General Conditions of Contract
 - (d) Technical Requirements (including Schedule of Requirements and Technical specifications)
 - (e) The Supplier's Bid and original Price Schedules
 - (f) The Purchaser's Notification of Award
 - (g) [Add here any other document(s)]
- 3 This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.
- 4 In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

- 5 The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Union of India on the day, month and year indicated above.

For and on behalf of the Central Manufacturing Technology Institute

Signed: [insert signature]

in the capacity of [insert title or other appropriate designation] in

the presence of [insert identification of official witness]

Signed: [insert signature]

in the capacity of [insert title or other appropriate designation]

in the presence of [insert identification of official witness]

For and on behalf of the Supplier

Signed: [insert signature of authorized representative(s) of the Supplier] in the capacity of [insert title or other appropriate designation] in the presence of [insert identification of official witness]

CHAPTER - 7

OTHER STANDARD FORM

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SL. No.	Name
1.	Integrity Pact
2.	Bidder Information form
3.	Bid Security Form
4.	Performance Statement Form
5.	Deviation Statement form
6.	Bid form
7.	Performance Security Form
8.	Acceptance certificate form
9.	Eligibility certificate form
10.	Non Black-listed Self certificate form

INTEGRITY PACT

Tender Ref. No.& Date:.....

1. This Integrity pact Agreement is made at..... on this.....day of.....20..... BETWEEN **Central Manufacturing Technology Institute (CMTI)** represented by its **Purchase Officer/ Executive Engineering Services/ Chief Administrative Officer**, Hereinafter referred as the Buyer/ Owner, which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns) AND **M/s** hereinafter referred to as the (Details of duly authorized signatory) “Bidder/Contractor” and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

2. Preamble

WHEREAS the Owner/ Buyer has floated the Tender under organizational procedures (hereinafter referred to as “Tender/Bid”) and intends to procure/ award contract for..... hereinafter referred to as the Goods/ Services/ works/ Contract. AND WHEREAS the Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s). AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as “Integrity Pact” or “Pact”), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties. NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

3. **Commitment of the Buyer/ Owner**

3.1 The Buyer/ Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

- a. No employee of the Buyer/ Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- b. The Buyer/ Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Buyer/ Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.
- c. The Buyer/ Owner shall endeavour to exclude from the Tender process all known prejudiced persons or any person, whose conduct in the past has been of biased nature.

3.2 If the Buyer/ Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or if there be a substantive suspicion in this regard, the Buyer/ Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

4. Commitment of the Bidder(s)/ seller(s)/ Contractor(s)

- 4.1 It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to CMTI all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.
- 4.2 The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution.
- a. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Buyer/ Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.
 - b. The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.
 - c. The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act Indian Legislation, Prevention of Corruption Act 1988 as amended from time to time. Further the Bidder(s)/ Contractor(s) will not use improperly, for the purpose of competition or personal gain, or pass on to others, any information or documents provided by the Buyer/ Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/ representatives in India, if any. Similarly Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign principals/ agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
 - e. The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.
 - f. The Bidder(s)/Contractor(s) have not sold and will not sell the same material/equipment at prices lower than the bid price.
- 4.3 The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 4.4 The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice (means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of CMTI's interests).
- 4.5 The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a

decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

- 4.6 The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/sub-vendors.
- a. The Buyer/ Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.
 - b. The Buyer/ Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Buyer/ Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process

5. Previous Transgression

- a. The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
- b. If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Buyer/ Owner.
- c. If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Buyer/ Owner may, at its own discretion, revoke the exclusion prematurely.

6. Consequences of Breach

Without prejudice to any rights that may be available to the Buyer/ Owner under law or the Contract or its established policies and laid down procedures, the Buyer/ Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Buyer/ Owner's absolute right:

- a. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Clause 4 & Clause 5 above, or in any other form such as to put his reliability or credibility in question, the Buyer/ Owner after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Buyer/ Owner. Such exclusion may be forever or for a limited period as decided by the Buyer/ Owner.
- b. Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Buyer/ Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the

entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

- c. Criminal Liability: If the Buyer/ Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Buyer/ Owner has substantive suspicion in this regard, the Buyer/ Owner will inform the same to law enforcing agencies for further investigation.

7. Compensation for Damages

- a. If the Buyer/ Owner has disqualified the Bidder(s) / Seller(s) from the tender process prior to the award according to Clause 8, the Buyer/ Owner is entitled to demand and recover the damages equivalent to Earnest Money Deposit in case of open tendering.
- b. If the Buyer/ Owner has terminated the contract according to Clause 6, or if the Buyer/ Owner is entitled to terminate the contract according to Clause 6, the Buyer/ Owner shall be entitled to encash the advance bank guarantee and performance bond/ warranty bond, if furnished by the Bidder(s)/Seller(s), in order to recover the payments, already made by the Buyer/ Owner for undelivered Goods and / or Services and / or Works.
- c. The Bidder(s)/Seller(s) shall also be liable to refund to the Buyer/ Owner, the Agency Commission / payments made by the Seller(s) / Bidder(s) along with interest at the rate of 2% per annum above LIBOR (London Inter Bank Offer Rate) (for foreign vendors) and Base Rate of SBI (State Bank of India) plus 2% (for Indian vendors).

8. Independent External Monitor(s)

- a. The Buyer/ Owner has appointed Independent External Monitor(s) for this Integrity Pact after approval by the Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- b. For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process or during execution of contract, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- c. The IEM is not subject to instructions by the representatives of the parties and performs his/ her functions neutrally and independently. The IEM would be provided access to all documents/ records pertaining to the contract for which a complaint or issue is raised before them, as and when warranted. However, the documents/ records/ information having national Security Implications and those documents which have been classified as Secret/ Top Secret are not to be disclosed. He/ she reports to the Director, CMTI.
- d. If any complaint with regard to violation of the IP is received by the Buyer/ Owner in a procurement case, the Buyer/ Owner shall refer the complaint to the Independent External Monitor(s) for their report. Contact details of IEMs are given in the bid/ tender documents as well as in the website of CMTI <https://cmti.res.in>
- e. The Bidder(s)/Contractor(s) accepts that the IEM has the right to access without restriction to all Project documentation of the Buyer/ Owner including that provided by the Contractor. The Contractor will also grant the IEM, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.
- f. The IEM is under contractual obligation to treat the information and documents of the

Bidder(s)/ Contractor(s)/ Sub-contractor(s) with confidentiality. The IEM has also signed declarations on 'Non-Disclosure of Confidential Information' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Director, CMTI and recuse himself / herself from that case.

- g. The Buyer/ Owner will provide to the IEM sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Buyer/ Owner and the Contractor. The parties offer to the IEM the option to participate in such meetings.
- h. As soon as the IEM notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Buyer/ Owner and request the Management to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- i. The IEM will submit a written report to the Director, CMTI, within 4 weeks from the date of reference or intimation to him by the Buyer/ Owner and, should the occasion arise, submit proposals for correcting problematic situations
- j. If the IEM has reported to the Director, CMTI, a substantiated suspicion of an offence under relevant IPC/ PC Act, and the Director, CMTI has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the IEM may also transmit this information directly to the Central Vigilance Commissioner.
- k. The word 'Monitor' would include both singular and plural.

9. Duration of the Pact

- a. This Pact will be effective from the date of issue of tender (NIT).It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other unsuccessful bidders, within 6 months from date of placement of order / finalization of contract against this tender till the Contract has been awarded.
- b. If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Director, CMTI.
- c. Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

10. Other Provisions

- a. Changes and supplements need to be made in writing. Side agreements have not been made.
- b. After award of work, the IEMs shall look into any issues relating to execution of contract, if specifically raised before them.
- c. The Bidder(s)/Seller(s) signing this IP shall not initiate any Legal action or approach any court of law during the examination of any allegations/complaint by IEM and until the IEM delivers the report.
- d. In the event of any dispute between the management and the Bidder(s)/Seller(s), relating to those contracts where Integrity Pact is applicable, the same will be settled through mediation before the panel of IEMs within 4 weeks. In case the dispute remains unsolved even after mediation by the panel of IEMs, CMTI will take further action as per the terms

and conditions of the contract in respect of dispute resolution/ arbitration.

- e. Nothing contained in this Integrity Pact shall be deemed to assure the Bidder(s)/ Seller(s) of any success or otherwise in the tendering process.
- f. If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
- g. Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- h. This Integrity pact is subject to Indian Laws, and exclusive Jurisdiction of Courts at Bangalore, India.
- i. The Parties hereby sign this Integrity Pact at _____ on _____ (Bidder(s)/contractor) and at _____ on _____ (Buyer/ Owner)

11. LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following

witnesses:

(For and on behalf of Buyer/ Owner) (For and on behalf of Bidder/Contractor)

WITNESSES: 1.....
(signature, name and address)

2.....
(signature, name and address)

Place:

Date

BIDDER'S INFORMATION FORM

a) [The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted. This should be done of the letter head of the firm]

Date: [insert date (as day, month and year) of Bid Submission] Tender No.: [insert number from Invitation for Bids]

Page 1 of ____ pages

1. Bidder's Legal Name [insert Bidder's legal name]
2. In case of JV, legal name of each party: [insert legal name of each party in JV]
3. Bidder's actual or intended Country of Registration: [insert actual or intended Country of Registration]
4. Bidder's Year of Registration: [insert Bidder's year of registration]
5. Bidder's Legal Address in Country of Registration: [insert Bidder's legal address in country of registration]
6. Bidder's Authorized Representative Information Name: [insert Authorized Representative's name] Address: [insert Authorized Representative's Address] Telephone/Fax numbers: [insert Authorized Representative's telephone/fax numbers] Email Address: [insert Authorized Representative's email address]
7. Attached are copies of original documents of: [check the box(es) of the attached original documents] Articles of Incorporation or Registration of firm named in 1, above.

Signature of Bidder _____ Name _____

Business Address

BID SECURITY FORM

Whereas (hereinafter called the tenderer") has submitted their offer dated for the supply of (Hereinafter called the tender")

Against the Purchaser's tender enquiry no. Know all men by these Presents that we of having our registered office at are bound unto (hereinafter called the "Purchaser")

In the sum of For which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this day of 20

THE CONDITIONS OF THIS OBLIGATION ARE:

- (1) If the tenderer withdraws or amends, impairs or derogates from the Tender in any respect within the period of validity of this tender.
- (2) If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity:
 - (a) If the tenderer fails to furnish the Performance Security for the due Performance of the contract.
 - (b) Fails or refuses to accept/execute the contract.

WE undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the authorized officer of the Bank)

Name and designation of the officer Seal, name & address of the Bank and address of the Branch

PERFORMANCE STATEMENT FORM (For a Period of last 3 years)

Name of the Firm: _____

Order placed by (full address of purchaser)	Order No and date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery as per contract	Date of actual completion of delivery	Remarks indicating reasons for late delivery, if any	Has the equipment been installed Satisfactory? (Attach a certificate from the purchaser/consignee)	Contact person along with telephone No: Fax No: And e-mail address

Signature and Seal of the Manufacturer/Bidder _____

Place:

Date:

DEVIATION STATEMENT FORM

The following are the particulars of deviations from the requirements of the tender specifications:

CLAUSE DEVIATION REMARKS (INCLUDING JUSTIFICATION)

Place:

Date:

Signature and seal of the
Manufacturer/Bidder

NOTE:

1. Where there is no deviation, the statement should be returned duly signed with an endorsement indicating "No Deviations".

BID FORM

[The Bidder shall fill in this Form in accordance with the instructions indicated No alterations to its format shall be permitted and no substitutions shall be accepted.]

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

Tender No.: [insert number from Invitation for Bids]

Invitation for Bid No.: [insert No of IFB]

To: [insert complete name of Purchaser]

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda No.: [insert the number and issuing date of each Addenda];
- (b) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules Specified in the Schedule of requirements the following Goods and Related Services [insert a brief description of the Goods and Related Services];
- (c) The total price of our Bid, excluding any discounts offered in item (d) below, is: [insert the total bid price in words and figures, indicating the various amounts and the respective currencies];
- (d) The discounts offered and the methodologies for their application are:
Discounts. If our bid is accepted, the following discounts shall apply. [Specify in detail each discount offered and the specific item of the Schedule of Requirements to which it applies.]
- (e) Our bid shall be valid for the period of time specified in ITB Sub-Clause 1.16.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If our bid is accepted, we commit to obtain a Performance Security in accordance with ITB Clause 1.38 and GCC Clause 2.13 for the due performance of the Contract;
- (g) The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract: [insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]

Name of Recipient	Address	Reason	Amount
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(If none has been paid or is to be paid, indicate "none.")

- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Signed: [insert signature of person whose name and capacity are shown]

In the capacity of [insert legal capacity of person signing the Bid Submission Form]

Name: [insert complete name of person signing the Bid Submission Form]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____

_____ [Insert date of signing]

PERFORMANCE SECURITY FORM

To: _____ (Name of Purchaser)

WHEREAS _____ (Name of Supplier) hereinafter called "the Supplier" has undertaken, in pursuance of Contract No. _____ dated, 20_____ to supply (Description of Goods and Services) hereinafter called "the order".

AND WHEREAS it has been stipulated by you in the said order that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the order

AND WHEREAS we have agreed to give the Supplier a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of (Amount of the Guarantee in Words and Figures and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the order and without cavil or argument, any sum or sums within the limit of (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until theday of20.

Signature and Seal of Guarantors

.....
.....
.....

Date 20

Address:

.....
.....

All correspondence with reference to this guarantee shall be made at the following address:

(Name & address of the Purchaser)

ACCEPTANCE CERTIFICATE FORM

No.

Dated:

M/s

Sub: Certificate of commissioning of equipment

1. This is to certify that the equipment as detailed below has/have been received in good condition along with all the Standard and special accessories (subject to remarks in Para 2). The same has been installed and commissioned.

(a) Contract No. _____ Date _____

(b) Description of the equipment _____

(c) Name of the consignee _____

(d) Scheduled date of delivery of the consignment to the Institute _____

(e) Actual date of receipt of consignment by the Institute _____

(f) _____ Scheduled date for completion of installation/commissioning _____

(g) Actual date of completion of installation/commissioning _____

(h) Penalty for late delivery Rs. _____

(i) Penalty for late installation at Institute Rs. _____

2. Details of accessories/items not yet supplied and recoveries to be made on that account: SI. No. Description Amount to be recovered

3. The acceptance test has been done to our entire satisfaction. The Supplier has fulfilled his contractual obligations satisfactorily or The Supplier has failed to fulfill his contractual obligations with regard to the following:

(a) _____

(b) _____

(c) _____

(d) _____

The amount of recovery on account of failure of the Supplier to meet his contractual obligations is as indicated above.

For supplier signature _____ Name _____ Designation _____ Name of Firm _____ Date _____

For purchase signature _____ Name _____ Designation _____ Name of the Institute _____ Date _____

ELIGIBILITY CERTIFICATE FORM

[To be provided on the letterhead of the Bidder and should be signed by a person with the proper authority to sign documents that are binding on the Bidder]

This is to certify that we are not associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting Services for the preparation of the design, specifications, and other documents to be used for the procurement of the Goods to be purchased under this Invitation of Bids /Tender No. _____ Dated _____

Authorized Signatory

Name: _____

Designation: _____

NON-BLACK LISTED SELF CERTIFICATION FORM

[To be provided on the letterhead of the Bidder and should be signed by a person with the proper authority to sign documents that are binding on the Bidder]

This is to certify that M/s. _____ [Name of Bidder] has not been blacklisted by any Indian Central / State Government Department / any other Purchasing authority /organization in last 3 years.

Authorized Signatory

Name: _____

Designation: _____