

Tender Document

FOR

Supply, Installation & Commissioning of Field Emission Scanning Electron Microscope and detectors/accessories for BGRL, Karad, Maharashtra

December 2021

SECTION – I
GENERAL INSTRUCTIONS

1. Introduction:

1.1 The Purchaser has issued this Tender Enquiry (TE) document for purchase of goods/stores/articles and related services as mentioned in Section “List of requirements / Technical specifications”, which also indicates, inter alia, the required stores, delivery schedule, terms and place of delivery etc. This section “General Instructions to Bidders” (GIB) provides the relevant information as well as instructions to assist the prospective Bidders in preparation and submission of tenders.

1.2 Bidders shall have to agree/accept all the terms and conditions of Tender document including payment terms etc. Acceptance shall be unconditional and Bidders shall have no claim and right in future on their terms, if any.

1.3 Whenever there is any conflict between the provision in the “General Instructions to Bidders” with regard to specific item/para/clause under this section and that in the “RFP”, the provision contained in the RFP shall have an over-riding effect and treated as final. Any special instructions as per “RFP” section will also apply for this purchase. The conditions (like qualification criteria, maintenance services, penalty charges, etc.) mentioned in “RFP” will also apply for this purchase.

2. Tender Language: The tender submitted by the Bidder and all subsequent correspondence and documents relating to the tender exchanged between the Bidder and the purchaser shall be written in English language.

3. Tender Currency: The Bidder should quote the price in US Dollar (US \$) for non-indigenous (or imported) items and in INR (₹) for indigenous (locally sourced) items.

4. Eligible Goods and services: All goods and related services to be supplied shall have their origin either in India or in any other country with which India has not banned the trade relations. The term “origin” used in this clause means the place where the goods are mined, grown, produced or manufactured or from where the related services are arranged and supplied.

5. Tender Validity:

5.1 The tenders shall remain valid for acceptance for a period of 180 days (one hundred eighty days) after the date of tender opening prescribed in the TE document.

5.2 Purchaser reserves the right to accept any tender and to reject any or all tenders.

5.3 The purchaser reserves the right to accept in part or in full any tender or reject any tender without assigning any reason or to cancel the tendering process and reject all tenders at any time prior to award of contract, without incurring any liability, whatsoever to the affected Bidder or Bidders.

6. Tendering Expenses: The Bidder shall bear all the costs and expenditure incurred and/or to be incurred by them in preparation, and uploading their tender including attending the pre-bid conference and/ or arranging demonstration of Services or Presentations before the Committee that may be deemed necessary by the Purchaser.

7. Pre-bid Meeting (if applicable):

7.1 Pre-bid conference shall be held as per NIT schedule so as to provide an opportunity to the participating bidders to interact with Borehole Geophysics Research Laboratory (BGRL) / NCS (MoES), Karad, Maharashtra with regard to various tender provisions/clauses, before the bids are submitted. Bidders should depute their authorized representative for pre-bid meeting. In case, due to the points/doubts raised by the prospective Bidders, the RFP needs to be modified, and then the same will be considered for modification. After pre-bid conference, tender conditions will be frozen. No change will be permissible after pre-bid meeting. Clarification needed, if any, may be sent before commencement of pre-bid meeting. No reply in this regard shall be sent to individual Bidders. Pre-Bid minutes shall be uploaded on e-Procurement portal <https://eprocure.gov.in/cppp/> and NCS website <http://seismo.gov.in/content/tenders>

7.2. BGRL/NCS shall hold a pre-bid meeting with the prospective Bidders as per Notice Inviting Tender (NIT) details. Queries received in writing, from the Bidders, prior to the pre-bid meeting only shall be addressed. The queries can be sent to BGRL/NCS (Dr. Vishnu C.S., Scientist) through email at deepkoyna@gmail.com.

7.3 Conditional tenders shall not be accepted on any ground and shall be rejected straightaway. If any clarification is required, the same should be obtained on or before pre-bid meeting. No correspondence will be entertained after pre-bid meeting.

7.4 **Regular visit of website:** Prospective Bidders are advised to see e-Procurement portal <https://eprocure.gov.in/cppp/> or NCS website <http://seismo.gov.in/content/tenders> on regular basis for any change in NIT schedule, amendment / corrigendum in Tender Document including technical requirement and pre-bid minutes etc.

7.5 **Integrity pact:** As per directive of CVC all organizations including BGRL/NCS have to adopt an Integrity Pact (IP) to ensure transparency, equity and competitiveness in major public procurement having procurement value above ₹ 5.0 crore.

8. Document comprising the tender:

8.1 Tender Enquiry Document seeks quotation in two parts by following **TWO Bid System**.

The First Part will be known as '**Technical Bid**', and the Second Part will be known as '**Price Bid**' (Details given below)

8.2 **Technical Bid (Un-priced Bid):** comprising of following

- a) Checklist section (Annexure-1) properly filled and signed.
- b) Bid security / Earnest Money Deposit (**EMD**) declaration (**Annexure-2a**) or MSME certificate. MSME certificate should be relevant to goods / services to be procured in the present tender.
- c) Technical proposal.
- d) Compliance statement/table.
- e) A copy of the blank price bid as per **Annexure 6**. The list of deliverables (un-priced) with make & model etc. as per **Annexure 10** should also be submitted along with the technical bid.
- f) Documentary evidence for eligibility
- g) Tender Acceptance Letter (**Annexure-2**) Duly Stamped & Signed. (Bidder has to agree to accept all the terms & conditions of the Tender Enquiry Document).
- h) The bidder, who quotes for goods manufactured by some other manufacturer, shall furnish Manufacturer's Authorisation Form (**Annexure-3**)
- i) Authorization Letter from the foreign principal for authorizing Indian Representative to sign and submit the tender document on behalf of foreign principal.

- j) All the above documents must be enclosed with technical bids, otherwise bids may be either ignored or not considered for technical evaluation.

8.3 PRICE BID:

- a) All the pages of the price bid should be numbered, indexed and duly signed and stamped by the authorized signatory.
- b) Prices should be quoted as per Price Schedule Format (Annexure-6). The domestic Bidder shall indicate on the Price Schedule specifying all components of prices shown therein including the unit prices and total tender prices of the goods, services, packing, inland transportation/freight/insurance to the sites and GST etc. against the requirement.
- c) In case any charges are not mentioned in the price bid, it will be treated as “all the charges are free of cost for that item”.
- d) Indian vendor shall quote prices on F.O.R destination (sites of consignee) basis. Payment will be made in Indian Rupees only. No payment will be made in foreign currency.
- e) **Foreign vendor shall quote prices on D.A.P basis. Evaluation the tender will be on D.A.P basis, however the Purchaser reserves all the right to select the order in any INCOTERM.**
- f) **The bidder supplying indigenous goods or already imported goods shall quote only in Indian Rupees.**
- g) Unless otherwise specified, prices quoted by the bidder shall remain firm and fixed during the currency of the contract and not subject to variation on any account except statutory levies, taxes and duties etc., if any, chargeable on the goods are payable.
- h) If there is a discrepancy between the amount expressed in words and figures, the amount expressed in words shall prevail and will be treated as final.
- i) The Supplier shall bear all the Income-tax liability as per rates prevailing at the time of undertaking the job in accordance with the Income-Tax Act in force in India.
- j) Price bid shall prima-facia be rejected in case of any deviation from the technical bid of the bidder and if there is any fact concealed or hidden in price bid/technical bid.

k) Prices indicated on the price-schedule form shall be entered separately in the following manner:

(i) For Goods manufactured/sourced within India:

i)	The price of the goods quoted Ex-works including taxes already paid.
ii)	GST and other taxes like LBT / Octroi etc. 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 as specified in the price schedule form.
iv)	The installation, commissioning and training charges including any incidental services, if any.

(ii) For Goods manufactured abroad:

i)	The price of the goods, quoted on FCA (named Airport 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.
iii)	The agency commission charges payable to Indian agent in Indian rupees, if any.
iv)	The installation, commissioning and training charges including any incidental services, if any

l) 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.

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

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

o) 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.

p) The quotation should be only in Indian Rupees for indigenous items. In case of foreign quote, the vendors may quote their rates in US \$.

q) In case of INR bids the price criteria should be on Free Delivery to BGRL (NCS/MoES), Karad 415 105, District Satara, Maharashtra, India. Govt. Levies like GST, LBT / Octroi etc., if any, shall be paid at actual rates applicable on the date of delivery. Rates should be quoted accordingly giving the basic price, GST etc., if any.

r) Customs Duty is levied on all import meant for MoES/NCS/BGRL as applicable to Govt./Service/R&D Institutions in India. The suppliers are requested to quote on D.A.P. basis.

Note: All payments due under the contract shall be paid after deduction of statutory levies at source (like ESIC, IT (TDS), GST, LBT / Octroi etc.), wherever applicable.

8.3.1 Taxes and Duties

a) 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.

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

c) 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.

d) All payments due under the contract shall be paid by the Purchaser after deduction of statutory levies (at source) (like ESIC, IT, etc.) wherever applicable.

8.4 The Bidder shall have to agree/accept all the terms and conditions of the tender including payment etc. Acceptance shall be unconditional and bidders shall have no claim and right in future on their terms

9. Preparation of Tender: A bidder shall complete all the documents of its tender, duly signed and stamped. The bidder shall scan all the documents and save them in PDF format.

- 10. Submission of Tender:** The bidders shall upload the soft copy of the tenders (in PDF Format) on CPP Portal within the specified date/time of submission of the tender as mentioned in the NIT document. Uploading of tender on CPP Portal is essential and mandatory otherwise their tenders shall be rejected. Additionally, hard copy of technical bid only is to be submitted by post or by hand to Project Director, Borehole Geophysics Research Laboratory (Ministry of Earth Sciences), Karad-Vita Road, Hazarmachi, Karad 415 105, Maharashtra.
- 11. Alteration of Tender:** The bidder, after submitting its tender, is permitted to alter / modify and upload its tender any number of times before the last date/time for submission of tender. The earlier tenders will get cancelled automatically and the latest uploaded tender will remain effective.
- 12. Opening of Tenders:** The purchaser shall open the tenders after the specified date/time and at the place as indicated in the NIT document. In case the specified date of tender opening falls on a holiday (or subsequently declared a closed day for the purchaser), then the tenders will be opened at the appointed time and place on the next working day. The bids downloaded by this office from CPP Portal will be available for the bidders automatically. The bidders need not come to this office as they can also download the opened bids directly from the CPP Portal. In case the bidders wish to come to this office during tender opening, they must bring an Authorization Certificate from their respective firms. The process of opening of the tenders in Two Bid System is as follows.

12.1 **First Stage:** The Technical Bids are to be opened in the first stage on/after the prescribed date and time. These Bids are scrutinized and evaluated by Technical Evaluation Committee (TEC) constituted by the competent authority with reference to parameters prescribed in the Tender Enquiry Document. The bidders whose Technical Bids are found responsive and acceptable will pass on to the second stage. The details of the bidders, whose Technical bids have been accepted, will be uploaded on the CPP Portal along with the Report of TEC. The date of opening of Financial/Price Bids will also be published.

12.2 **Second Stage:** In the Second Stage, the Price Bids of technically qualified bids only will be opened. The Price Bids will be scrutinized by Financial Evaluation

Committee (**FEC**) constituted by the competent authority. The report of the FEC will decide the lowest bidder. This report will also be uploaded on CPP Portal. Supply Order will then be issued to the lowest bidder.

13. Scrutiny and Evaluation of Tenders

13.1 Unresponsive bids: The tenders will be scrutinized to determine whether they are complete and meet the essential and important requirements, conditions etc. as prescribed in the Tender Enquiry Document. The tenders are liable to be treated as non-responsive and will be summarily ignored if following documents are not provided along with technical bids.

- a) Checklist (Annexure-1).
- b) Tender Acceptance Letter (Annexure-2) is not duly signed and stamped. (Bidder has to agree to accept all the terms & conditions of the Tender Enquiry Document)
- c) Tender Validity Period is shorter than the required period.
- d) Bid security/ EMD declaration (Annexure-2a).
- e) Bidder has not agreed to deposit the required performance security (In case of allotment of the tender).
- f) Copy of agreement of Indian agent with its foreign principal with the precise relationship between them and nature of services which would be available from Indian agent. Copy of this agreement must be attached with the tender.
- g) By any means/reason, the incomplete bid uploaded on e-procurement.gov.in shall also be treated as Unresponsive.
- h) Pre-Contract Integrity Pact (if applicable)

13.2 Technical Evaluation:

- a) A duly constituted Technical Evaluation Committee (TEC) will first select Bidders on the basis of eligibility criteria of this tender. The Bids conforming to the eligibility criterion will be considered for further evaluation
- b) If during the preliminary examination, the purchaser find any minor infirmity and/or irregularity and/or non-conformity in a tender, the purchaser may waive the same provided it does not constitute any material deviation and financial impact and, also,

does not prejudice or affect the ranking order of the Bidder. Wherever necessary, the purchaser will convey its observation on such 'minor' issues to the Bidder asking the Bidder to respond by a specified date. If the Bidder does not reply by the specified date or gives evasive reply without clarifying the point at issue in clear terms, that bid will be liable to be ignored.

- c) Technical Evaluation Committee (TEC) will shortlist Technical Bids on the basis of technical parameters, offered technical solutions/products and their features. The TEC can make any enquiry/seek clarification from the Bidders on the offered Service Solution. In such a situation, the Bidder shall extend full co-operation. The Bidders can also be asked to give technical presentation/discussion on the offered solution, in a short period notice, as such the **Bidders** have to be ready for the same.
- d) During the detailed Technical Presentations/Discussions, Bidder has to ensure availability of appropriate specialist, along with required documentation for interacting with Technical Evaluation Committee. If the required specialist along with proper documentation is not made available by Bidders, then such defaulting Bidders are likely to be debarred from further tender evaluation process.
- e) Compliance statement in the form of '**Complied**' or '**Not Complied**' shall be given against each term and specification mentioned in the tender document. The compliance statement as per Annexure -11 should contain the signature of the authorized person and the seal of the company. Any deviation should be mentioned / explained by the Bidder in Compliance Statement. The compliance statements should be supported by authentic documentation. Deviations in lower side will not be accepted.
- f) No enquiry shall be made by the Bidder(s) during the course of evaluation of the tender, after opening of bid, till final decision is conveyed to the successful Bidder(s).
- g) The names of technically short listed Bidders will be announced to only those Bidders whose bids will qualify for opening of the Price/Financial/Commercial Bids.

13.3 **Financial Evaluation:** In the second stage, the Price Bids of technically qualified bidders only shall be opened for further scrutiny and evaluation.

- a. The Financial Bids of only those Bidders short-listed from the Technical Bids by TEC will be opened in the presence of their representatives on a specified date and time to be intimated to the respective Bidders, and the same will be evaluated by a duly constituted Finance Evaluation Committee (FEC).
- b. No enquiry shall be made by the Bidder(s) during the course of evaluation of the tender, after opening of bid, till final decision is conveyed to the successful Bidder(s). However, the Committee/its authorized representative and office of BGRL/NCS can make any enquiry/seek clarification from the Bidders, which the Bidders must furnish within the stipulated time else bid of such defaulting Bidders will be rejected.
- c. If there is a discrepancy between the unit price and total price, The Unit Price shall prevail.
- d. The ultimate/landing cost in respect of store is arrived at by considering the following elements:

i) For Goods manufactured /sourced within India

i)	The price of the goods quoted Ex-works including taxes already paid.
ii)	GST and other taxes like LBT / Octroi etc. 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 i.e., field sites as specified in the price schedule form.
iv)	The installation, commissioning and training charges including any incidental services, if any as given in Scope of Supply (Section IV)

ii) For Goods manufactured abroad

i)	The price of the goods, quoted on FCA (named Airport 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 i.e. CIP/CIF Price.
iii)	The agency commission charges payable to Indian agent in Indian rupees, if any.
iv)	The installation, commissioning and training charges including any incidental services, if any

- e) Conversion to Single Currency 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 of the Price Bids. For this purpose, exchange rate notified in www.rbi.org or any other website would be used by the purchaser.

- 14. Packing and Marking:** The packing for the goods to be provided by the supplier should be strong and durable enough to withstand (Without limitation) the entire journey during transit including shipment (if any), rough handling, open storage etc. without any damage or deterioration of the packed goods.
- 15. Inspection, Testing and Site Acceptance Test (SAT):** The purchaser/consignee reserves the right to inspect goods before their dispatch if required in technical requirement. Goods accepted by the purchaser/consignee and/or its inspector at initial inspection and in final inspection in terms of the contract shall in no way dilute purchaser's/consignee's right to reject the same later, if found deficient in terms of the warranty clause of the contract. Purchaser will not undertake any Pre-dispatch inspection, unless mentioned, for imported stores in the suppliers country of origin and equipment will be sent to the supplier on the basis of supplier own inspection at the premises and guarantee and warranty. The equipment will be accepted subject to final inspection and test before handing over the equipment to consignee.

SECTION – II

GENERAL CONDITIONS

16. Whenever there is any conflict between the provision in the GCT under this section and that in the section “RFP”, the provision contained in the section “**RFP**” shall prevail and have an over-riding effect, i.e. The details given in the RFP will be treated as final.
17. Any Special instructions or conditions like delivery schedule, mode of delivery & sites of delivery etc., mentioned in “RFP” section will also be applicable
18. **Eligible Bidders:** The Firms in followings categories are eligible to participate in tender subject to fulfill other criteria in technical requirement section.
 - 18.1 Indian/Foreign Manufacturers of the required stores.
 - 18.2 Authorized Dealer/Supplier/Distributor of Indian manufacturer/Foreign principal. The bidder shall have to submit authorization certificate as per Annexure-3 from manufacturer that they will provide service support after sale.
 - 18.3 Indian agent on behalf of foreign principal.
 - 18.4 A copy of the valid agreement between Indian agent and the foreign principal(s) with the precise relationship between them is required to be submitted as per Annexure - 12.
19. **Alternative Tenders:** Alternative Tenders are not permitted.
20. **Validity of Tender:** The tenders shall remain valid for acceptance for a period of 180 days (One Hundred Eighty Days) for Technical Bid after the date of opening of tender as prescribed in the TE document.
21. **Purchaser’s Right to accept any tender and to reject any or all tenders:** The purchaser reserves the right to accept in part or in full any tender or reject any tender without assigning any reason or to cancel the tendering process and reject all tenders at any time prior to award of contract, without incurring any liability, whatsoever to the affected bidder(s).
22. **Earnest Money Deposit (EMD) (if applicable):**

- 22.1 The Bidder shall furnish along with its tender, Earnest Money for an amount as shown in the tender notice.
- 22.2 The bidders who are registered on Tender submission date with National Small Industries Corporation, New Delhi, shall be eligible for exemption from EMD. Micro and Small Enterprises specified by Ministry of Micro, Small & Medium Enterprises (MSME) are exempted from the submission of Earnest Money Deposit (EMD).
- 22.3 EMD of an amount as shown in NIT has to be submitted through FDR/Bank Guarantee of any Scheduled Commercial Bank drawn in favour of “DDO, National Centre for Seismology, New Delhi”, physically on or before the last date of submission of bids; else bid will be rejected. However, the scanned copy of FDR/BG along with the Bid must be uploaded electronically on e-Procurement site.
- 22.4 The earnest money shall be valid for a period of sixty (60) days beyond the validity period of the tender.

23. Refund of EMD (if applicable):

- 23.1 In the case of those Bidders who fail to qualify the eligibility criteria, the Earnest Money Deposit (EMD) will be refunded without any interest accrued immediately thereafter.
- 23.2 In the case of those Bidders whose technical bids do not qualify, the EMD will be refunded without any interest accrued within one month of the acceptance of TEC’s recommendations.
- 23.3 In the case of those Bidders whose technical bids have qualified but are not selected, the EMD will be refunded without any interest accrued within one month of the acceptance of Financial Evaluation Committee’s (FEC) recommendations.
- 23.4 Bidder whose bid was accepted and selected, the EMD will be refunded without any interest accrued after the submission of Performance Security.
- 23.5 Application of request for refund of EMD is given at **Annexure-5**
- 23.6 The bidders have to submit pre receipt for obtaining their EMD in the **FORM GAR 43D (Annexure-5)** in duplicate with original signatures. One form should be affixed with revenue stamp.

23.7 The clause “Encashment/release of FDR/BG requires clearance certificate from Purchaser i.e., Director, National Centre for Seismology, New Delhi” must be mentioned in issued FDR/BG by Bank.

24. Forfeit of EMD (if applicable):

24.1 Earnest money of a Bidder will be forfeited, if the Bidder withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender or if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged without prejudice to other rights of the purchaser.

24.2 The successful Bidder’s earnest money will be forfeited without prejudice to other rights of Purchaser if supplier fails to furnish the required performance security within the specified period mentioned TE document.

24.3 Firm shall have to extend the validity of EMD if extension of tender validity is agreed on the request of purchaser in exceptional cases.

25. Performance Security:

25.1 Successful Bidder shall submit performance security within thirty (30) days from date of issue of supply order/award of contract by the purchaser or within twenty one (21) days from the receipt of supply order by the supplier whichever is earlier.

25.2 Performance security has to be submitted by the successful bidder, irrespective of its registration with NSIC/MSME. Performance security is not relaxed to any supplier.

25.3 The purchaser may consider annulment/cancellation of supply order/ award of contract if performance security not received in stipulated time.

25.4 There is no relaxation/exemption in submitting of Performance Security.

25.5 The supplier shall furnish performance security to the purchaser for an amount equal to ten percent (10%) of the total value of the order, valid up to sixty (60) days beyond the warranty period or successful completion of all contractual obligation including warranty period whichever is later. The format of bank guarantee to be submitted as performance security is given in **Annexure-4**.

- 25.6 Performance Security shall be furnished by bidder for all the components including indigenous components to be taken representatives of foreign principals/OEMs.
- 25.7 Bank Guarantee issued from the foreign banks must be authenticated by State Bank of India (SBI) or any other Nationalized Bank of India.
- 25.8 Firms, registered with NSIC/ MSME, quoting on behalf of their foreign principal shall be responsible for furnishing performance security for the entire project tenure.
- 25.9 The successful Bidder will have to deposit Performance Security within specified time limit given above, equivalent to 10% (Ten Percent) of the total value of the work order, in the form of FDR or Bank Guarantee from a Nationalized/ Scheduled Commercial Bank in favour of “**DDO, National Centre for Seismology, New Delhi**”. If the Security Deposit is not paid within time specified, the Bidder shall be disqualified for award of contract. No interest will be payable for “Performance Security”.
- 25.10 Performance Security has to be submitted irrespective of its registration NSIC etc. Performance security is not relaxed to any supplier/service provider. Submission of Performance Security is must for all suppliers/service providers.
- 25.11 It shall be in any one of the forms namely Fixed Deposit Receipt or Bank Guarantee drawn/issued by a commercial bank doing Government business in the prescribed form in favour of the purchaser. In the event of any amendment issued to the contract, the supplier shall, within twenty-one (21) days of issue of the amendment, furnish the corresponding amendment to the Performance Security (as necessary), rendering the same valid in all respects in terms of the contract, as amended. Foreign Bidder may submit in the form of Bank Guarantee. Bank Guarantee issued from the foreign banks must be authenticated by STATE BANK OF INDIA or any other Nationalized Bank of India.
- 25.12 The purchaser will release the Performance Security without any interest to the supplier/ service provider on completion of the supplier’s all contractual obligations including the warranty obligations & after receipt of performance security for CAMC (if applicable).

25.13 In the event of non-providing the services, the Performance Security shall be forfeited to the extent the services are not provided. Further, if the purchaser has to get the services from any other Bidder because of failure to provide in full or part by the successful Bidder, the difference in payment may be made from such amount. Also, the amount retained towards “Performance Security” is subject to forfeiture if it is found at any point of time during the period of contract that the services offered by the supplier are not in conformity to the accepted specifications mentioned in RFP by the purchaser.

25.14 In case the Bidder backs out of the contract in mid stream without explicit consent of the NCS, the PBG will stand forfeited.

25.15 On completion of the Project, the Performance Security without any interest accrued shall be released after ascertaining that satisfactory support that has been provided during AMC period. In case, it is found that appropriate satisfactory support has not been provided by the Bidder, NCS will ensure that the prescribed penalty as per clause 25.3 for the default in service has been realized or shall be recovered from the Bidder out of already due payments.

26. Terms of Delivery: Goods shall be delivered by the supplier in accordance with the terms of delivery specified in the Supply Order. Suppliers should not deliver the goods without any valid delivery period. Purchaser shall not be held responsible for any thing (payment and loss of stores etc) if stores supplied without any valid delivery period as purchaser reserve the right to reject the delivery and terminate the supply order.

27. Delivery Schedule: As per RFP

28. Warranty: Warranty for a period of 36 months from the date of site acceptance of the systems at respective sites

28.1 Other condition under warranty clause of “RFP” shall also be applicable.

29. Penalty/Liquidity Damage:

29.1 The supplier shall deliver the goods as per the Supply Order within the time schedule specified by the purchaser in the “RFP” section. The delivery date, unless delivery is divided, on which all the items/stores/materials/services etc as per Supply Order are delivered shall be taken into account for penalty/LD purpose.

29.2 The purchaser shall, without prejudice to other rights and remedies available to the purchaser under the contract, deduct from the contract price a sum equivalent to 1% (one percent) per week of delay or part thereof on delayed supply of goods and/or delayed services subject to a maximum of 10% of the contract price of delayed items. Once the maximum is reached purchaser may also consider followings:

- a. Forfeiture of its performance security and
- b. Termination of the contract for default.

29.3 The supplier shall not be held responsible for any delay in custom clearance by purchaser, handing over proper site by consignee and any other delay in part of consignee/purchaser if responsible. These periods shall not be counted in LD. The supplier shall not dispatch the goods after expiry of the delivery period. The supplier is required to apply to the purchaser for extension of delivery period and obtain the same before despatch. In case the supplier dispatches the goods without obtaining an extension, it would be doing so at its own risk and no claim for payment for such supply and / or any other expense related to such supply shall lie against the purchaser. The supplier shall inform to the purchaser directly in writing about these delays on part of BGRL/MoES.

30. Award Criteria and Tolerance Clause: The Supply Order shall be issued to the eligible responsive tender evaluated as the most economical, technically qualified and suitable to the requirements subject to the availability of funds. The purchaser reserves the right to increase or decrease the quantity of required goods up to twenty five percent ($\pm 25\%$) till the placement of supply order without any change in the terms & conditions and prices quoted by the bidders.

31. Modification of Contract: If necessary, the purchaser may, by a written order given to the supplier at any time during the currency of the contract, amend the contract by making alterations and modifications within the general scope of contract. If the supplier doesn't agree to the adjustment made by the purchaser, the supplier shall convey its views to the purchaser within fifteen (15) days from the date of the supplier's receipt of the purchaser's amendment / modification of the contract.

32. Custom Duty: In case of India agent quoting on behalf of its foreign principal, the Custom Duty Exemption Certificate shall be provided by NCS on request by the firm only for the

imported items. If additional Custom Duty is paid by the Indian agent, the same shall be reimbursed by NCS on submission of original documents. All other charges like Landing/Clearing/Bank charges, Freight/Insurance charges on imported stores will have to be paid by the vendor.

33. Taxes and Duties in India:

33.1 Duty and Local Taxes: As per Govt. of India Rules, the applicable GST shall be paid to the successful bidder/supplier. Normally, the materials to be supplied to Govt. Departments against Govt. contracts are exempted from levy of town duty, Octroi duty, terminal tax and other levies of local bodies. However, the local Town/Municipal Body regulations, at times, provide for such exemption only on production of exemption certificate from any authorized officer. The suppliers should ensure that the stores ordered against contracts placed by this office are exempted from levy of town duty/Octroi duty, Terminal tax or other local taxes and duties. Wherever required, they should obtain the exemption certificate from the indenter /consignee concerned, to avoid payment of such local taxes or duties. The supplier shall pay the Octroi, entry tax etc. if exemption certificate not agreed by local authorities and same may be got reimbursed from purchaser on proof of payments.

33.2 Supply of Road Permits by the consignees: In all such cases where the requirement of Road Permit for entry of goods into a particular State is mandatory, the following provisions shall be strictly followed:

- a. The supplier shall request the consignee for providing Road permit/ Way bill within 10 days of the receipt of the Supply order. The supplier shall furnish all the necessary information and documents in this regard to consignee within a maximum period of two weeks so that the same reaches the supplier before the dispatch of the stores. However, in cases where the Road permit/Way Bill is issued on proof of actual invoice of the material, the consignee shall arrange to provide the Road permit/Way Bill from appropriate authorities within a maximum period of 5 days from the receipt of invoice.
- b. The supplier shall pay the local charges/taxes if exemption certificate not agreed by local authority and same will be reimbursed by purchaser on submission of receipt.

- c. The supplier shall not be held responsible for any delay in supply due to non-supply/delayed supply of Road permit.

33.3 Income Tax: Deduction of Income Tax at Source from the payment to the suppliers shall be done as per existing law in force. The bidders (Foreign as well as Indian) may visit the website of Income Tax Department of India for details of Tax Liabilities, Rules, and Procedures etc. The bidders shall have to provide their Permanent Income Tax Number (PAN) and TAN. Firm may also mention the applicable rates of TDS as per DTAA with India. Copy of same may also be enclosed. Foreign vendor shall have to mention the details of establishment in India if any.

34. Terms and Mode of Payments:

34.1 Payment Terms: Payment shall be made subject to recoveries, if any, by way of liquidated damages /penalty clause /TDS or any other charges as per the payment terms of the Supply Order if not specified elsewhere in the document.

34.2 Cases where installation and Commissioning not to be done by bidder

A. In case of Domestic goods

No advance payment for domestically supplied goods. 100 % payment shall be made to domestic supplier in Indian currency on receipt of entire goods/stores at sites and acceptance by consignee. No payment shall be made for partial delivery.

The following documents shall be submitted:

- a. Three copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount.
- b. Consignee Receipt Certificate in original issued by the authorized representative of the consignee
- c. Copies of delivery challan identifying contents of each package.
- d. Inspection certificate by the nominated Inspection agency, if any.
- e. Insurance Certificate
- f. Final Acceptance Report from consignee.

B. In case of imported goods

Ninety (90) % payment, against proof of dispatch of goods/stores as per S.O, shall be paid through irrevocable, non-transferable Letter of Credit (LC) opened in favour of the foreign supplier and upon submission of following documents:

- a. supplier's commercial invoice showing contract number, goods description, quantity, unit price and total amount
- b. Original on-board Bill of Lading/Air way billing
- c. Copies of packing list identifying contents of each package
- d. Manufacturer's/Supplier's warranty certificate
- e. Inspection certificate issued by the nominated inspection agency, if applicable as per contract
- f. Manufacturer's own factory inspection report
- g. Certificate of origin
- h. Insurance certificate
- i. Port of Loading
- j. Port of Discharge
- k. Expected date of arrival

Balance payment of 10% of net FOB price of goods would be made against 'Acceptance Certificate' to be issued by the consignees.

34.3 Cases where installation & Commissioning to be done by supplier: Seventy percent (70%) of contract value of stores after proof of despatch along with Factory Quality Assurance Test certificate of the detectors and all parts and accessories to be dispatched by the OEM/foreign supplier, or receipt of goods at sites in case of domestic goods and balance 30% payment towards stores after their successful installation, commissioning and acceptance at site. Present procurement comes under this category.

34.4 100% payments towards services like Training, SAT, Installation & commissioning charges etc if any after their executions and completions.

- 34.5 A separate work order will be issued for the items sourced from India including civil and minor works to the authorized Indian agent of OEM. The payment for this component will be made after successful completion of works.
- 34.6 Necessary documents must be submitted for the release of payments.
- 34.7 Payment to the foreign supplier shall be made through IRREVOCABLE LC. LC shall be established for a specific period depending on delivery schedule only after receipt of unconditional acceptance supply/purchase order and performance security from the supplier. LC extension charges shall be borne by the supplier in case of extension of delivery period requested by the supplier and request agreed by the purchaser.
- 34.8 The bidder shall submit detailed particulars of his bank account in this office, like: Account Number, Bank Name, Branch Name, Address, IFSC code, MICR No. and Telephone No.; etc.

35. Termination of tender:

- 35.1 From the time of submission of tender up to the time of issuing of the Supply Order, if a bidder needs to contact the purchaser for any reason relating to this tender enquiry and / or its tender, it should do so only in writing.
- 35.2 In case a bidder attempts to influence the purchaser in the purchaser's decision on scrutiny, comparison & evaluation of tenders and awarding the contract, the tender of the bidder shall be liable for rejection in addition to appropriate administrative actions being taken against that bidder, as deemed fit by the purchaser.
- 35.3 The purchaser, without prejudice to any other contractual rights and remedies available to it (the purchaser), may, by written notice of default sent to the supplier, terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the

purchaser. In the event of the purchaser terminates the contract in whole or in part, the purchaser may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and the supplier shall be liable to the purchaser for the extra expenditure, if any, incurred by the purchaser for arranging such procurement.

35.4 If the supplier becomes bankrupt or otherwise insolvent, the purchaser reserves the right to terminate the contract at any time, by serving written notice to the supplier without any compensation, whatsoever, to the supplier, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the purchaser

36. Arbitration

36.1 If dispute or difference of any kind shall arise between the purchaser and the supplier in connection with or relating to the extension of contract, the parties shall make every effort to resolve the same amicably by mutual consultations.

36.2 If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, unless otherwise provided in the “RFP” section either the purchaser or the supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided the applicable arbitration procedure will be as per Indian Arbitration and Conciliation Act, 1995 and any amendments thereto. In the case of a dispute or difference arising between the Purchaser/ Consignee and all suppliers relating to any matter arising out of or connected with the contract, such dispute or difference shall be referred to the sole arbitration of an officer, appointed to be the arbitrator by the Director General of Meteorology. The award of the arbitrator shall be final and binding on the parties to the contract. Each party shall bear its own cost.

36.3 Venue of Arbitration: The venue of arbitration shall be the place from where the contract has been issued, i.e., New Delhi. The contract shall be interpreted in accordance with the laws of India.

37. Force Majore: Neither BGRL/NCS nor Bidder shall be liable to the other for any delay in or failure of performance of their respective obligations under this contract caused by occurrence beyond the control of BGRL/NCS or Bidder because of fire, floods, power, acts of God, acts of public enemy, wars, insurrection, riots, strikes, lockouts, sabotage or any agencies thereof or any local authority or any compliance therewith, or any other causes contingencies or circumstances similar to the above. Either party shall promptly but not later than thirty (30) days thereafter, notify the other to the commencement and cessation of such contingency, and if such contingency continues beyond six months, both parties agree to discuss and agree upon an equitable solution for termination of this agreement, or otherwise decide the further course of action to be adopted.

38. Fall Clause: The bidder undertakes that it has not supplied/is not supplying similar products/systems or subsystems at a price lower than that offered in the present bid in respect of Ministry/Department of the Government of India or Public Sector Unit (PSU) and if it is found at any stage that similar products/systems or subsystems was supplied by the BIDDER, to any Ministry/Department of the Government of India or Public Sector Unit (PSU) at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and difference in the cost would be refunded by the BIDDER to the BUYER (National Center for Seismology) or it will adjusted from their bills, if the contract has already been concluded

SECTION – III

SPECIAL CONDITIONS OF TENDER (SCT)

SECTION – III

SPECIAL CONDITIONS OF TENDER (SCT)

- 39.** The Government of India lays down public procurement policies for Micro, Small and Medium Enterprises (MSMEs), from time to time, to help inclusive national economic growth by providing long-term support these enterprises and disadvantaged sections of society and to address environmental concerns.
- 40.** In this tender, the participating Micro, Small and Medium Enterprises (MSMEs) quoting price within price band of L1+25% (Twenty Five percent) shall also be allowed to supply up to 50% (Fifty percent) portion of total tendered value by bringing down their price to L1 price in a situation where L1 price is quoted by a firm other than an MSME. In case there are two or more MSME firms within such price band, then this 50% (Fifty percent) quantity is to be distributed proportionately among these bidders (As decided by the competent authority of this office).
- 41.** Within this 50% (Fifty Percent) quantity, a purchase preference of 4% (Four percent) i.e. 4% (Four percent) out of 50% (Fifty percent) is reserved for MSMEs owned by Scheduled Caste (SC)/Scheduled Tribe (ST) entrepreneurs (if they participate in the tender process and match the L1 price). Provided that, in event of failure of such SC/ST MSME to participate in tender process or meet tender requirements and L1 price, four per cent sub-target shall be met from other MSME. The MSMEs would be treated as owned by SC/ ST entrepreneurs. The final distribution of the supply order shall be decided by the competent authority of this office.
- 42.** Where any Aggregator has been appointed by the Ministry of MSME, themselves quote on behalf of some MSME units, such offers will be considered as offers from MSME units and all such facilities would be extended to these also.
- 43.** This Policy is meant for procurement of only goods produced and services rendered by MSMEs and not for any trading activities by them. An MSME Unit will not get any purchase preference over another MSME Unit. The Purchaser has issued this Tender Enquiry(TE)document for purchase of goods/stores/articles and related services as mentioned in Section “List of requirements / Technical specifications”, which also indicates, inter alia, the required stores, delivery schedule, terms and place of delivery etc. This section

“General Instructions to Bidders” (GIB) provides the relevant information as well as instructions to assist the prospective Bidders in preparation and submission of tenders.

44. MoES/NCS is following and abides with the Public Procurement (Preference to Make in India), Order 2017, DIPP, MoCI Order No. P-46021/2/2017-B.E.II dated 15th June 2017 and subsequent amendments to the order. Accordingly preference will be given to the Make in India products while evaluating the bids, however, it is the sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India product along with respective documentary evidence as stipulated in the aforesaid order in the technical bid itself.

Section IV

Request for Proposal (RFP)

**Supply, Installation & Commissioning of Field
Emission Scanning Electron Microscope and
detectors/accessories for BGRL, Karad, Maharashtra**

**Borehole Geophysics Research Laboratory
(National Centre for Seismology)
Karad 415 105, Maharashtra, India**

REQUEST FOR PROPOSAL (RFP)

DOCUMENT / प्रस्ताव निवेदन दस्तावेज

FOR

**Supply, Installation & Commissioning of Field Emission
Scanning Electron Microscope and detectors/accessories for
BGRL, Karad, Maharashtra**

December 2021

Request for Proposal Document

Supply, Installation & Commissioning of Field Emission Scanning Electron Microscope and detectors/accessories for BGRL, Karad, Maharashtra

December 2021

Project Implementing Agency

**NATIONAL CENTER FOR SEISMOLOGY
BOREHOLE GEOPHYSICS RESEARCH LABORATORY
MINISTRY OF EARTH SCIENCES, GOVERNMENT OF INDIA
KARAD 415 105, MAHARASHTRA, INDIA**

1. Introduction

Borehole Geophysics Research Laboratory (BGRL), Ministry of Earth Sciences, Govt. of India is carrying out integrated geological and geophysical studies on the genesis of earthquakes. The geological studies include detailed petrological and microstructural investigations on rock core samples recovered from scientific drilling to identify the seismic signatures in the granitic and basaltic rock formations. To facilitate such studies, a petrology and microstructure laboratory is under development at BGRL. Knowledge about parameters like grain size, grain shape, mutual arrangement of minerals, etc., in turn helps to study seismic signatures via changes in parameter behaviour at fault/ damaged zones. Moreover, fluid rock interaction is to be studied with thin sections from different depth to know the role of fluid in the rock weakening and subsequent fracturing.

A comprehensive microstructural investigation is possible only at higher magnification. Since a polarising microscope is limited in magnification and in delineating mineral properties, it is proposed to procure a field emission scanning electron microscope (FE-SEM) for detailed investigations. A FE-SEM with various detectors shall help to identify orientation/pattern and nature of microcracks, grain to grain relation etc., which might have developed during seismic events. Besides, deformation features evolved during seismicity may be studied substantially. These shall throw light to the microstructural control of strength and deformation in the fault zone rocks. Considerable mineralogical and elemental information can also be obtained. Appropriate detectors will make it possible to identify different mineral phases in a rock via mineral/elemental mapping. Along with the main equipment, it is also proposed to procure the accessories required for sample preparation and associated jobs.

The present proposal is to purchase FE-SEM as a part of developing laboratory facilities in BGRL campus at Hazarmachi, Karad.

2. Scope of present tender enquiry

a) Supply of following equipment:

Sl. No	Name of the equipment	Quantity
1.	Field Emission Scanning Electron Microscope with following detectors a. Secondary Electron (SE) b. Back Scattered Electron (BSE) c. Cathodoluminescence (CL) d. Energy dispersive spectroscopy (EDS) e. Electron backscatter diffraction (EBSD) f. Accessories and spares for proper functioning of the laboratory	One

- b) Installation and commissioning of Field Emission Scanning Electron Microscope with all the above attachments and accessories at BGRL Campus, Hazarmachi, Karad.
- c) Training in operation and maintenance of the whole system at BGRL Campus, Hazarmachi.
- d) Three years comprehensive warranty and five annual maintenance contract (AMC) for the items mentioned at (a) above.
- e) The bidder shall take all necessary actions related to the supply, transportation of equipments to the sites, installation, configuration and integration of the complete hardware and software modules to meet the requirements as per RFP on turn-key basis.

3. Technical Specifications

Field Emission Scanning Electron Microscope (FE-SEM) should be user friendly system for high resolution imaging of rock/geologic thin sections. This should be one of the latest models and should be documented through a support letter from the Principals / OEM (to mention the launch date and also availability of spares for the next 10 years).

The following are the minimum technical specifications and user requirements for the FE-SEM.

Sl. No.	Features	Specifications
1.	Resolution	1.3 nm at 1 kV or better and 0.7 nm at 15/20kV
2.	Magnification	X 10 to X10,00,000
3.	Acceleration Voltage	0.1 or less to 30 kV or higher. All voltage settings should be controlled with software.
4.	Chamber	Large chamber with at least 7 accessory ports. Chamber design should allow quick changing of the specimens. Chamber should be provided with CCD camera or suitable device to view the sample & stage inside the chamber without interfering with detectors. CCD camera should be able to display both colour image with visible light and monochrome images with IR light source. The microscope should be able to support a WDS port for field installations without any modifications.
5.	Stage	5 axes motorised eucentric stage. Movements equivalent to or better than below X = 100 mm or more Y= 100 mm or more Z = 50 mm or more Tilt range = -3° to +70° R = 360°

		Stage movement should be able to control via. both software and manually (with joystick).
6.	Probe current	Up to 200 nA or more. Stability better than 1 % covering 1hr, 6hrs, 12hrs, 24hrs of continuous operation. Probe current detector must be included for probe current measurement.
7.	Detectors	<ul style="list-style-type: none"> a) Secondary electron (SE) detector b) High resolution back scattered electron (BSE) detector c) For low detection of SE and BSE through the lens detector with user controllable energy filter for collection of topographic (SE) contrast or atomic number (BSE) contrast. d) Cathodoluminescence (CL) detector e) CL detector should be based on mixed pixel photon counter technology. Wavelength range of 320-900 nm. CL detector should work in combination with other detectors, should have external control panel extension for controlling signals. f) Energy-dispersive (EDS) detector g) Electron backscatter diffraction (EBSD) h) A through-lens detector with adjustable energy reflection filter desirable for mixed (SE+BSE) contrast. Also stage voltage biasing or in-column deceleration for good resolution. With Energy filtering range up to 1500V. i) Compatibility with Wavelength-dispersive (WDS) detector
8.	Electron gun	Schottky field emission electron gun. The emitter should be covered under warranty. The warranty period would include any extended warranty purchased.
9.	User interface	Keyboard, mouse, control panel with multifunction for the control and adjustment of SEM parameters.
10.	Electron Optics	<p>The Condenser lens system should consist of dual condenser lens to allow changes in beam current continuously.</p> <p>The Objective lens should consist of both Electrostatic and Electromagnetic Lenses with beam acceleration and deceleration within the lens to reduce aberration and improve probe diameter.</p> <p>There must not be any Objective Lens electromagnetic leakage flux below the lens allowing imaging of magnetic or paramagnetic samples at short Working Distance and preventing pattern distortion while carrying out EBSD analysis. There should be a dedicated lens setting for ultra-long depth of focus for the wide area EBSD analysis using beam scan.</p> <p>The system should have beam deceleration or stage biasing technology for High resolution analysis.</p>

11.	Display/computer	<p>24" high end TFT flat screen or better monitors for SEM, capable to store images in various formats like jpeg, tif, bmp, etc. Image store resolution of 5120 x 3840 or better.</p> <p>Should be high end computer/workstation with not less than 16 GB RAM, 2 GB graphics card and 2TB hard drive and Intel i7 processor to handle large image, volumes of data along with image processing software. Provision for USB and CD/DVD record.</p> <p>Provide colour Laser Printer with photocopy/scanning facility with minimum speed of 20 pages per minute and 600 DPI.</p>
12.	Vacuum system	Fully automated controlled vacuum system. Suitable vacuum system having ion pump, turbo pump and rotary pump (should be of reputed brands). Pump down time should be less than 5 min. FESEM should be equipped a suitable vacuum system to avoid contamination.
13.	Essential Accessories	<p>a) CCD colour camera (to view inside chamber), also see point 4</p> <p>b) Chiller and Compressor from the column OEM required for operation of the FE-SEM.</p> <p>c) Interface between FESEM, EDS, WDS and EBSD</p> <p>d) Sputter unit (gold) and carbon unit separately</p> <p>e) 5 number of single stubs and 5 number of multiple sample holders</p>
14.	Calibration standards	<p>Standard samples to check system calibration i.e., magnification should be supplied along with the system.</p> <ol style="list-style-type: none"> 1) Magnification standard (Mesh Sample), 2) Single-element EDS/WDS and multi-element standards covering 56 elements with Faraday cup 3) Resolution standards - Gold on Carbon standard for SEM, 4) Separate Faraday cup for probe current measurement
15.	EDS	<p>LN2 free EDS system. $40\text{mm}^2 \pm 10\text{mm}^2$ 127eV resolution for Mn, 50 eV for carbon and 60 eV for fluorine or better capable of identifying elements from Boron to Uranium, should do the functions like qualitative, quantitative and elemental mapping. EDS should be capable of line scan, selected area analysis and multipoint analysis. EDS need to be integrated with FESEM. The detector should be as per ISO norms.</p> <p>EDS server & analysis software should have capability to do Qualitative & Quantitative Analysis, Peak and Auto ID routine, Spectral Match Analysis, Database management and reporting, Elemental Mapping, Point Analysis, Line Scanning, Real time</p>

		<p>Phase mapping, Phase to Element and Element to Phase maps with specimen drift correction. Pile up correction and background noise reduction, simultaneous imaging and analysis should be possible.</p> <p>All these capabilities should be applicable for polished flat specimens, fractured samples and nanostructured particulate systems.</p> <p>User interactive qualitative and standard less/ standards based quantification with K, L, M, N line database. Real time elemental mapping with auto elemental identification, quantification based on ZAF, PhiZAF.</p> <p>Should have quantification algorithm for uneven surfaces and under tilted conditions</p>
16.	EBSD	<ol style="list-style-type: none"> 1. The EBSD system should include Hardware consisting of EBSD camera/detector and control electronics and software for acquisition and indexing of electron backscatter diffraction patterns and phase mapping with SEM beam and stage control with interface, pre-tilt sample holders, Calibration samples, Operation manuals should be included 2. CMOS based EBSD camera with at least 1244 x 1024 pixels resolution and indexing speeds of 4500 pps (or better) 3. The EBSD system Angular resolution should be less than 0.1 deg. 4. The EBSD camera should have tapered nose design to prevent shadowing to other detectors of FESEMs. The EBSD camera should have motorised insertion and retraction mechanism. The position accuracy is to be 0.1 mm. 5. The system software should include following features Latest Data Acquisition Software working on WINDOWS 64bit platform, System software with latest indexing algorithms. <ol style="list-style-type: none"> a) Auto tilt correction b) Phase Reflector File Creation Software c) Pole Figure Software – texture analysis d) Mapping Software – post processing for grain size, Grain Boundary characteristics, etc e) Large area Mapping f) ODF Software – texture analysis g) Imaging and Beam Control Software h) Stage Control Software i) Phase Identification Software

		j) ICSD Data Base 1 additional off line licence
18.	Spares and consumables	a) 10 nos. Carbon rod/thread & Carbon tapes (20m). b) Provide recommended essential consumables for uninterrupted operation of the equipment for five years. c) 50 numbers of specimen stubs. d) 2 electrostatic tweezers suitable for handling stub. e) Other specimen handling tools, sample preparation materials and general tools for the maintenance of FESEM should be provided.
19.	Vibratory Polisher	A good quality vibratory polisher that should remove minor deformation remaining after mechanical preparation revealing a stress-free. Also, oscillate horizontally; maximizing the length of time the specimen touches the polishing cloth. Supplier should provide collidal silica to chemo-mechanically polish a rock specimen to a surface finish suitable for electron-backscatter diffraction (EBSD). Specimens should naturally rotate around the polishing bowl allowing users to set-up the system and walk away. The instrument along with the following accessories should be supplied. a) 3 numbers of specimen holders - 2 inches (50mm) length b) Colloidal Silica, 64oz (2 litres) c) 10 numbers of MicroCloth, 12in (305mm) diameter
20.	Warranty & Training	a) 3 year comprehensive warranty. Warranty should start from the date of completion of installation. b) Full on-site training must be given to BGRL/MoES for the smooth operation of FESEM and, for data acquisition, processing and interpretation. c) One week initial training during installation and at least 10 days of advanced training after 4 months of installation of machine at the customer site. All the training should be part of the supply and installation.
21.	UPS	Branded 15 KVA or better with at least 1 hour back-up time and 3 year warranty on UPS and batteries.
22.	Sputter unit	Good quality sputter units (gold and carbon separately) from column OEM supplier with turbo molecular/ rotary pump and with necessary vacuum gauges.
23.	Required documents along with technical specification	a) List of at least 3 Institute/laboratories in India with similar system installed during last 5 years b) The supplier should provide calibration /traceability certificate of the equipment.

24.	Pre-installation requirements	Pre-installation requirement such as required power, space, etc. are to be surveyed by the supplier at the installation site and inform to BGRL.
25.	Operation Table Tool kit	Anti- vibration table along with associated accessories. Essential tool kit for FESEM to be provided for handling during preventive maintenance.
26.	Application notes	The supplier must provide up-to-date technical brochures adequately explaining the availability of the features in the model of the equipment supplied.
27.	Up-gradation	The supplier should supply upgraded softwares whenever there is an up-gradation during warranty period.
28.	Compliance statement	The supplier must submit a table indicating the compliance of the features of the model of the equipment being quoted with those given in the indent verifiable through Printed brochures of the Principals / OEM and webpage:- Features not matching – must be clearly indicated. Additional features and features in the quoted equipment which are better than those in the indent – may be clearly mentioned and explained.
29.	Availability of spares	The model quoted should be explicit and one of the latest with spares availability letter from principals for next 10 years post the expiry of the warranty.
30.	Post warranty AMC	AMC charges for the five years after initial 3 year warranty to be mentioned with a yearly charge breakup (to be quoted separately). This cost will be a part of the price bid but will not be considered for determining L1.

4. Qualification Criteria for Bidders

- a) Bids are invited from Original Equipment Manufacturers (OEM) or its authorized agent. A certificate from end user in this regard must be attached to technical bid.
- b) The principal bidder or Indian representative firm must have a registered and/or incorporated office in India. The said firm must be fulfilling the requirement of having valid permanent account number (PAN) and service tax account number.
- c) A certificate from at least three end users about satisfactory performance of these items shall be enclosed with the technical bid.
- d) The Bidder should comply fully with Technical specifications.
- e) The bidder should comply fully with Compliance statement as per Annexure-11.

5. Commercial and Other Terms & Conditions

5.1. Delivery Terms

5.1.1. Delivery schedule

Delivery of one number of FE-SEM including all detectors and accessories, and above specified attachments (DAP) shall be done at BGRL campus, Hazarmachi, Karad 415105, Maharashtra, India within 180 days from the date of placement of supply order.

5.1.2. Late Delivery Charges

If firm is unable to meet above delivery schedule a **Late Delivery** charges of 0.5% of the goods value for undelivered portion per week will be levied, subject to maximum value of LD being not higher than 10% of the value of the delayed stores. Late delivery charges will be deducted from the final payment.

6. Installation Terms

Item shall be installed within 90 days from the date of delivery of stores at BGRL campus, Hazarmachi, Karad, Maharashtra.

If Firm is unable to install the system within 90 days, of the delivery, then also LD charges of 0.5% of total value of the uncompleted portion of work per week is levied, subjected to maximum of 10% of the total value of the store. Late installation charges will be deducted from the final payment.

6.1. Acceptance Tests

6.1.1. Factory Acceptance Test (FAT): Supplier should submit FAT certificate providing the satisfactory Quality Assurance /Performance Tests of equipments, with the model and serial number of equipment to be dispatched, along with proof of dispatch for making a payment through Bank L/C. The objective of the FAT shall be the verification of performance of the system as per the specifications and functional requirements detailed in the tender document, before shipment. All FAT tests should be carried out at Supplier's premises prior to shipment.

6.1.2. Site Acceptance Test:

- a) The supplier shall submit detailed Site Acceptance Test (SAT) plans for system acceptance. The supplier should submit the test plan well in advance for each phase separately. The test plan shall require concurrence by the Purchaser.
- b) The purpose of the site acceptance test is to verify the performance of the system as per the specifications and functional requirements. This will include both the hardware and software tests. The acceptance tests will comprise of overseeing and evaluating the satisfactory and fail proof performance to ensure trouble-free operations of all the components simultaneously and collectively in conformity with the Technical Specifications and RFP.
- c) As per the mutually agreed test procedures, site acceptance test should be carried out at site after installation. The supplier shall arrange the test.

d) In the event of equipment failing to pass the site acceptance test, a period not exceeding four 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 Bidder at no extra cost to the Purchaser or to cancel the order and recall all the payments with applicable interest rate from the date of the respective payments.

6.1.3. The Firm shall inform the consignee for acceptance of the stores after installation.

6.1.4. The Firm shall submit an acceptance test procedures (ATP) well in advance for its finalization.

6.1.5. NIST traceable Calibration Certificate or equivalent authorized certificate is mandatory for the instruments for acceptance of the store.

6.2. On Site Training

The successful bidder should provide in-depth training on operation and maintenance of the instrument to the nominated personnel of BGRL. One week initial training during installation and at least 10 days of advanced training after 4 months of installation of machine should be provided. All the training should be given by factory qualified engineers, free of cost.

6.3. Documentation

- The manufacturer should provide at least three copies with detailed operational, maintenance and servicing manuals for each equipment without additional cost to buyer.
- Calibration certificate should be provided by the vendor with no extra charges to the buyer.
- All documentation should be in English language

6.4. Warranty Terms

The Bidder warrants that all Goods supplied under this Contract should be free from defect. The following warranty will form part of the contract places on the successful bidder. Except as otherwise provided in the invitation tender, the seller hereby declares that the goods, stores articles sold/supplied to the buyer under this contract shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specification and particulars contained/mentioned in contract. Bidder shall give a separate under-taking for acceptance of term and conditions.

6.4.1. Commencement of warranty

- Warranty period for three years will begin after installation and acceptance of the FE-SEM.
- The warranty of document should be included warranty registration card covering various consumable and non-consumable items/accessories.

- However, the list of consumable items chargeable to BGRL/NCS under warranty/comprehensive warranty period and non-warranty period should be clearly specified by the authorized vendor.

6.4.2. Annual Maintenance Contract (AMC)

- a) After expiry of standard warranty period of 3 years, from the date of acceptance of the installed equipment, the firm shall provide a quote for AMC for five years separately.
- b) The bidder shall give a separate undertaking for the acceptance of the terms and conditions.
- c) The Firm shall do preventive maintenance and two breakdown visits per year. The preventive maintenance visits will be at least once in 6 months or as per the requirement of client, during which it shall check the performance of all components of the equipment. The preventive maintenance shall be duly countersigned by the local authorized official. The duly signed satisfactorily preventive maintenance report countersigned by the designated official shall be the basis of releasing the periodic AMC payment.
- d) AMC charges quoted by the firm will not be taken into account for the cost comparison purpose. This AMC cost will be a part of the price bid but will not be considered for determining L1.
- e) Proportionate amount for AMC will be paid to the firm once in half year after successful maintenance of the system and after deduction of applicable penalty if any.
- f) During the period of warranty, in the event of the equipment developing snags or malfunctioning or if it stops functioning altogether, the Purchaser will promptly inform the Bidder, and the Bidder's maintenance engineers should attend to the complaint immediately and operationalize the equipment in the least possible time.

8. Compliance/ Non-Compliance

The bidders shall submit a detailed item-wise compliance/non-compliance statement referring to para-wise requirements given in this tender document for quick evaluation of the bid and for any future reference. The compliance statement shall be supported by original brochure(s) of the equipment or sub-components from manufacturer. Technical specifications and other requirements contained in this document are essentially required by BGRL. However, reasons for non-compliance, if any, for certain limited paras or even sub-paras of the document may also be given by the bidder. If certain paras of the specifications are partially complied, these should be specifically addressed in the compliance statement giving full details of the deviations from the given specifications and their likely impact on the overall system performance. All non-compliance of specifications, even of small nature,

should be clearly brought out. Silence on any part of the technical specification or failure/omission to provide any such details will be treated as non-compliance.

9. Bidder's Obligation:

- a) The Bidder is responsible for customization of software requirements and conduct all contracted activities in accordance with the Contract using state-of-the-art methods and economic principles and exercising all means available to achieve the Performance specified in the Contract.
- b) The Bidder is obliged to work closely with the Purchaser's staff, act within its own authority and abide by directives issued by the Purchaser for the implementation of various activities.
- c) The Bidder will abide by the job safety measures prevalent in India and will free the Purchaser from all demands or responsibilities arising from accidents or loss of life, the cause of which is the Bidder's negligence. The Bidder will pay all indemnities arising from such incidents and will not hold the Purchaser responsible or obligated.
- d) The Bidder is responsible for managing the activities of its personnel or sub-contracted personnel and will hold himself responsible for any misdemeanours.
- e) The bidder is liable to pay TDS and other applicable taxes as per GoI norms for the contract and services provided by them, as per rates prevailing at the time of contract.

CHECKLIST

SN	Activity	Compliance Yes/No/ NA	Page No. of bid
1.	(i) Is Bid security/EMD declaration enclosed? (as per Annexure-2a)		
2.	Have you quoted the price in US Dollar for Non-Indigenous (or imported) items and in INR for Indigenous (locally sourced) items?		
3.	Have you kept validity of your bid as mentioned in Section II, GCT of the TE Document? (as per clause no. 20 of Tender document)		
4.	Have you enclosed duly filled and signed Tender Acceptance Letter on firm's letterhead (Accepting all the terms and conditions of the tender)? (Bid may be ignored if not signed) (as per clause no. 8.2 (g) of Tender document)		
5.	Have you enclosed clause-by-clause Compliance Statement for the "List of requirements/ technical specifications" section? (as per clause no. 13.2 (e) of Tender document)		
6.	Have you submitted copy of the last purchase order(s) and end user certificate?		
7.	(i) Is tender Submitted as Manufacturer/OEM?		
	(ii) Is tender Submitted as Authorized Agent/ Dealer/ Supplier/ Distributor of OEM? Is Authorization Certificate attached? (as per clause no. 18.2 of Tender document)		
	(iii) Is tender submitted as an Integrator? Whether Back-to-back support agreement with equipment manufacturer and software developer company attached?		
	(iv) Is tender submitted by Indian agent quoting on behalf of foreign principal: If yes, whether the necessary documents are attached as mentioned in TE Document? (as per clause no. 18.3 of Tender document)		
8.	(i) Permanent Account No. of bidding firm with proof.		
	(ii) Is GST Number with Registration Certificate attached?		
9.	Is Signed and stamped of each pages of bid document to be uploaded on website.		

10.	(i) Is Submission of Tender/Bid (as per clause no. 10 of Tender document) (ii) Hard copy of uploaded bid is required to be submitted to BGRL, Karad, Maharashtra.		
11.	Is Submitted un-priced Bid as per clause no. 8.2 (e)		
12.	Is Price bid submitted as per Annexure-6		
13.	Name of the supplier with complete address to whom supply order is to be placed.		
14.	Contact details (Email & Phone No.) of Supplier/Bidder		

(Signature with date)

(Full name, designation on behalf of the Bidder)

TENDER ACCEPTANCE FORM

(For all the terms & conditions of tender document are acceptable to Tenderer)

To

The Director,
National Centre for Seismology,
Mausam Bhawan Complex, Lodi Road, New Delhi-110003

Ref: TE document No. NCS/_____ dated _____

I/We, the undersigned have examined the above mentioned TE document, including amendment/corrigendum No. _____, dated _____ (if any), the receipt of which is hereby confirmed. We now offer “Supply, Installation & Commissioning of Field Emission Scanning Electron Microscope (FE-SEM) for BGRL, Karad, Maharashtra” in conformity with your above referred document.

If our tender is accepted, we undertake to supply the goods and perform the services of (Installation & commissioning etc.), as mentioned in tender document with the requirements, terms and conditions specified in the Section 1 and Section II of tender document.

I/We further confirm that, if supply / purchase order is placed to firm, we shall provide performance security of required amount in an acceptable form for due performance of the contract.

I/We agree to keep our tender valid for acceptance as required in tender document or for subsequently extended period, if any, agreed to by us. I/We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. I/We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

I/We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

We confirm that we do not stand deregistered/banned/blacklisted by any Govt. Authorities.

I/We confirm that we fully agree to the terms and conditions specified in above mentioned TE document, including amendment/ corrigendum etc. if any.

(Signature with date and seal of the
company)

(Name and designation)

Duly authorised to sign tender for and on behalf of Bidder / Tenderer

Note* : Firm/company shall use their own printed letter head for issuing this certificate Acceptance shall be unconditional.

**Format of bid security declaration from bidders in lieu of EMD
(on bidder's letter head)**

To,
The Director,
National Centre for Seismology
IMD Campus, Mausam Bhawan, Lodi Road, New Delhi-110003

Subject: Bid security declaration on the tender for Supply, Installation & Commissioning of Field Emission Scanning Electron Microscope (FE-SEM) and detectors/accessories for BGRL, Karad, Maharashtra, Tender No:, dated

I/ We, the authorized signatory of M/s, participating in the subject tender No..... for the Supply, Installation & Commissioning of Field Emission Scanning Electron Microscope (FE-SEM) and detectors/accessories for BGRL, Karad, Maharashtra do hereby declare:

- (i) That I/ we have availed the benefit of waiver of EMD while submitting our offer against the subject Tender and no EMD being deposited for the said tender.
- (ii) That in the event we withdraw / modify our bid during the period of validity Or I /we fail to execute formal contract agreement within the given time line Or I /we failed to submit a performance security within the given time line Or I/we commit any breach of tender conditions/contract which attract penal action of forfeiture of EMD and I/we will be suspended from being eligible for bidding /award of all future contracts of NCS/Ministry of Earth Sciences (MoES) for a period of 2 years from the date of committing such breach.

Signature and seal of Authorised Signatory of bidder

Name of Authorised Signatory:

Designation:.....

Company Name:

MANUFACTURER’S AUTHORISATION FORM

(Bidders, quoting products other than his own manufactured products, shall submit this certificate in following format on the Letter Head of the firm)

To,
The Director, National Centre for Seismology
IMD Campus, Mausam Bhawan, Lodi Road, New Delhi-110003

Sub: Manufacturer Authorization for Tender No _____.

Sir,
We, **<OEM/ Manufacturer name>**having our registered office at**<OEM/ Manufacturer address>**, are an established and reputed manufacturer of
We confirm that **<Bidder Name>** having its registered office at **<Bidder Address>** is our authorized partner for We authorize them to quote for in the above-mentioned tender.
We hereby confirm that we shall provide all service and maintenance support to our authorized partner during the entire contract period. We also ensure to provide required spares and service support to the above authorized partner while offering onsite maintenance services.

Yours faithfully,

[Signature with date, name and designation] for and on behalf of
Messrs _____
[Name & address of the manufacturers along with Seal of the firm]

Note: This letter of authorisation should be on the letter head of the manufacturing firm and should be signed by a person competent and having legal binding to the manufacturer (original letter to be attached or to be shown at the time of opening of bids).

MODEL BANK GUARANTEE FORMAT FOR FURNISHING EMD

(format only) (if applicable)

Whereas
(herein after called the “tenderer”) has submitted their offer dated.....for
Supply, Installation & Commissioning of Field Emission Scanning Electron Microscope (FE-
SEM) and its detectors/accessories for(hereinafter called the “tender”)
against the purchaser’s tender enquiry No.KNOW
ALL MEN by these presents that WEof
..... 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 of20.....

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 “Director, National Centre for Seismology”, 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 upto and including 60 days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.
Bank Guarantee issued with the tender enquiry reference No.NCS/..... Dated.....

(Signature of the authorized officer of the Bank)

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

APPLICATION-CUM-BILL FOR REFUND OF EMD**FORMGAR 43D (if applicable)**

Director, (Kind Attn. to: DDO)
National Centre for Seismology IMD Campus, Mausam
Bhawan, Lodi Road, New Delhi-110003

MONTH.....BILL NO.

Original Challan or Receipt No. & date	Bank/Office in which deposited	Name of depositor	Amount Originally deposited
1	2	3	4

Received this day of20..... the sum of ₹
.....(₹) only being repayable
on Account of release of deposited described above.

Claimant's Signature.

(with revenue stamp affixed)

For use in Departmental Office

1. Received payment of ₹..... (₹.....)
for arranging disbursal to claimant.

2. Passed for Payment of ₹(₹) to
claimant(s) Shri/Smt./Ms..... against personal deposit account
administered by me.

DDO(NCS)

For Director National Centre for Seismology
In case of endorsement of above

For use in Pay & Account office in case of endorsement of 1 above

Passed for payment of Rs.Payment by Cheque No.

.....

Pay & Account Office

Financial Bid for quoted item

Table A					
Sl. No.	Item Name (With full specification)	Unit	Quantity	Rate	Amount
1.	Supply, installation and commissioning of FE-SEM as per "Technical Specification"				
	Total Tender Price				
	Total in words				

Table B: Post warranty Annual maintenance contract (AMC) charges					
Sl. No.	Item		Charges in INR	GST (if any)	Amount (INR)
1.	AMC as per the RFP	Post warranty 1 st year			
		Post warranty 2 nd year			
		Post warranty 3 rd year			
		Post warranty 4 th year			
		Post warranty 5 th year			
Total (INR)					

Place:.....

Signature of bidder.....

Date:.....

Seal of bidder

Note:

- The names of each stores/items must be mentioned including services if any. The deliverables list attached with financial bid must be exactly same as per technical bids without mentioning prices.
- Charges, if any, for inland (within the India) Transportation /freight/insurance of stores shall be mentioned separately. In case not mentioned, it is treated as free of cost.
- If there is a discrepancy between the unit price and the total price, then THE UNIT PRICE shall prevail.
- All applicable taxes must be mentioned against each item. Rate of each applicable tax must be mentioned in price bid.
- Price schedule for optional items should be attached separately and not to be mentioned in main price bid.

Place : _____ **Date :** _____ **Signature of Bidder** _____ **Seal of the Bidder** _____

Proforma for performance statement

(For a period of last ten years)

Order placed by (Full address of the purchaser)	Order No. and date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery as per contract actual	Remarks including reason for late delivery, if any	Has the system /equipment been satisfactorily functioning?(attach a certificate from the purchaser / consignee)

Signature and seal of the bidder.....

.....

AUTHORISATION LETTER FOR ATTENDING TENDER OPENING

No.

Date:

To, The Director,
National Centre for Seismology
Ministry of Earth Sciences
New Delhi-110003, India

Subject-Tender No. _____

Sir,

Mr. _____ has been authorized to be present
at the time of opening of above tender due on _____ at _____,
on my/our behalf.

Yours faithfully

Signature of Bidder

Copy to: Mr _____ for information and for production
before the _____ (MM) _____ at the time of opening of
bids.

Format for List of Deliverable

SN	Item	Quantity
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Format Technical Compliance Statement

Note: Bidder should write make and model of each hardware /firmware/software offered in appropriate place. Write Not Applicable (N/A) wherever not required.

1 Scope of the tender:

	Requirements	Specifications Offered by the Bidder	Complied/Non-Complied	Deviation if any with remarks
I.	Supply, installation and commissioning of Field Emission Scanning Electron Microscope with following detectors at BGRL Campus, Hazarmachi, Karad. g. Secondary Electron (SE) h. Back Scattered Electron (BSE) i. Cathodoluminescence (CL) j. Energy dispersive spectroscopy (EDS) k. Electron backscatter diffraction (EBSD) l. Accessories and spares for proper functioning of the laboratory			
II.	Training in operation and maintenance of the whole system at BGRL Campus, Hazarmachi.			
III.	Three years standard warranty and provide a quote for AMC for five years separately, for the items mentioned above.			
IV.	The bidder shall take all necessary actions related to the supply, transportation of equipments to the sites, installation, configuration and integration of the complete hardware and software modules to meet the requirements as per RFP on turn-key basis			

2. Technical Specification

Requirements			Specifications Offered by the Bidder	Complied /Non-Complied	Deviation if any with remarks
1	Resolution	1.3 nm at 1 kV or better and 0.7 nm at 15/20kV			
2.	Magnification	X 10 to X10,00,000			
3.	Acceleration Voltage	0.1 or less to 30 kV or higher. All voltage settings should be controlled with software.			
4.	Chamber	Large chamber with at least 7 accessory ports. Chamber design should allow quick changing of the specimens. Chamber should be provided with CCD camera or suitable device to view the sample & stage inside the chamber without interfering with detectors. CCD camera should be able to display both colour image with visible light and monochrome images with IR light source. The microscope should be able to support a WDS port for field installations without any modifications.			
5.	Stage	5 axes motorised eucentric stage. Movements equivalent to or better than below X = 100 mm or more Y= 100 mm or more Z = 50 mm or more Tilt range = -3° to +70° R = 360° Stage movement should be able to control via. both software and manually (with joystick).			
6.	Probe current	Up to 200 nA or more. Stability better than 1 % covering 1hr, 6hrs, 12hrs, 24hrs of continuous operation. Probe current detector must be included for probe current measurement.			

7.	Detectors	<p>a) Secondary electron (SE) detector</p> <p>b) High resolution back scattered electron (BSE) detector</p> <p>c) For low detection of SE and BSE through the lens detector with user controllable energy filter for collection of topographic (SE) contrast or atomic number (BSE) contrast.</p> <p>d) Cathodoluminescence (CL) detector CL detector should be based on mixed pixel photon counter technology. Wavelength range of 320-900 nm. CL detector should work in combination with other detectors, should have external control panel extension for controlling signals.</p> <p>e) Energy-dispersive (EDS) detector</p> <p>f) Electron backscatter diffraction (EBSD)</p> <p>g) A through-lens detector with adjustable energy reflection filter desirable for mixed (SE+BSE) contrast. Also stage voltage biasing or in-column deceleration for good resolution. With Energy filtering range up to 1500V.</p> <p>h) Compatibility with Wavelength-dispersive (WDS) detector</p>			
8.	Electron gun	Schottky field emission electron gun. The emitter should be covered under warranty. The warranty period would include any extended warranty purchased.			
9.	User interface	Keyboard, mouse, control panel with multifunction for the control and adjustment of SEM parameters.			
10.	Electron Optics	The Condenser lens system should consist of dual condenser lens to allow changes in beam current continuously.			

		<p>The Objective lens should consist of both Electrostatic and Electromagnetic Lenses with beam acceleration and deceleration within the lens to reduce aberration and improve probe diameter.</p> <p>There must not be any Objective Lens electromagnetic leakage flux below the lens allowing imaging of magnetic or paramagnetic samples at short Working Distance and preventing pattern distortion while carrying out EBSD analysis. There should be a dedicated lens setting for ultra-long depth of focus for the wide area EBSD analysis using beam scan.</p> <p>The system should have beam deceleration or stage biasing technology for High resolution analysis.</p>			
11.	Display/computer	<p>24" high end TFT flat screen or better monitors for SEM, capable to store images in various formats like jpeg, tif, bmp, etc. Image store resolution of 5120 x 3840 or better.</p> <p>Should be high end computer/workstation with not less than 16 GB RAM, 2 GB graphics card and 2TB hard drive and Intel i7 processor to handle large image, volumes of data along with image processing software. Provision for USB and CD/DVD record.</p> <p>Provide colour Laser Printer with photocopy/scanning facility with minimum speed of 20 pages per minute and 600 DPI.</p>			
12.	Vacuum system	<p>Fully automated controlled vacuum system. Suitable vacuum system having ion pump, turbo pump and rotary pump (should be of reputed brands). Pump down time should be less than 5 min. FESEM should be equipped a suitable vacuum system to avoid contamination.</p>			

13.	Essential Accessories	<p>a) CCD colour camera (to view inside chamber), also see point 4</p> <p>b) Chiller and Compressor from the column OEM required for operation of the FE-SEM.</p> <p>c) Interface between FESEM, EDS, WDS and EBSD</p> <p>d) Sputter unit (gold) and carbon unit separately</p> <p>e) 5 number of single stubs and 5 number of multiple sample holders</p>			
14.	Calibration standards	<p>Standard samples to check system calibration i.e., magnification should be supplied along with the system.</p> <ol style="list-style-type: none"> 1. Magnification standard (Mesh Sample), 2. Single-element EDS/WDS and multi-element standards covering 56 elements with Faraday cup 3. Resolution standards - Gold on Carbon standard for SEM, 4. Separate Faraday cup for probe current measurement 			
15.	EDS	<p>LN2 free EDS system. $40\text{mm}^2 \pm 10\text{mm}^2$ 127eV resolution for Mn, 50 eV for carbon and 60 eV for fluorine or better capable of identifying elements from Boron to Uranium, should do the functions like qualitative, quantitative and elemental mapping. EDS should be capable of line scan, selected area analysis and multipoint analysis. EDS need to be integrated with FESEM. The detector should be as per ISO norms.</p> <p>EDS server & analysis software should have capability to do Qualitative & Quantitative Analysis, Peak and Auto ID routine, Spectral Match Analysis, Database management and reporting, Elemental Mapping, Point Analysis, Line Scanning,</p>			

		<p>Real time Phase mapping, Phase to Element and Element to Phase maps with specimen drift correction. Pile up correction and background noise reduction, simultaneous imaging and analysis should be possible.</p> <p>All these capabilities should be applicable for polished flat specimens, fractured samples and nanostructured particulate systems.</p> <p>User interactive qualitative and standard less/ standards based quantification with K, L, M, N line database. Real time elemental mapping with auto elemental identification, quantification based on ZAF, PhiZAF.</p> <p>Should have quantification algorithm for uneven surfaces and under tilted conditions</p>			
16.	EBSD	<p>1. The EBSD system should include Hardware consisting of EBSD camera/detector and control electronics and software for acquisition and indexing of electron backscatter diffraction patterns and phase mapping with SEM beam and stage control with interface, pre-tilt sample holders, Calibration samples, Operation manuals should be included.</p> <p>2. CMOS based EBSD camera with at least 1244 x 1024 pixels resolution and indexing speeds of 4500 pps (or better)</p> <p>3. The EBSD system Angular resolution should be less than 0.1 deg.</p> <p>4. The EBSD camera should have tapered nose design to prevent shadowing to other detectors of FESEMs. The EBSD camera should have motorised insertion and retraction mechanism. The position accuracy is to be 0.1mm.</p>			

		<p>5. The system software should include following features Latest Data Acquisition Software working on WINDOWS 64bit platform, System software with latest indexing algorithms.</p> <ul style="list-style-type: none"> a) Auto tilt correction b) Phase Reflector File Creation Software c) Pole Figure Software – texture analysis d) Mapping Software – post processing for grain size, Grain Boundary characteristics, etc e) Large area Mapping f) ODF Software – texture analysis g) Imaging and Beam Control Software h) Stage Control Software i) Phase Identification Software j) ICSD Data Base <p>1 additional off line licence</p>			
18.	Spares and consumables	<ul style="list-style-type: none"> a) 10 nos. Carbon rod/thread & Carbon tapes (20m). b) Provide recommended essential consumables for uninterrupted operation of the equipment for five years. c) 50 numbers of specimen stubs. d) 2 electrostatic tweezers suitable for handling stub. e) Other specimen handling tools, sample preparation materials and general tools for the maintenance of FESEM should be provided. 			
19.	Vibratory Polisher	<p>A good quality vibratory polisher that should remove minor deformation remaining after mechanical preparation revealing a stress-free. Also, oscillate horizontally; maximizing the length of time the specimen touches the polishing cloth. Supplier should provide collidal silica to chemo-</p>			

		<p>mechanically polish a rock specimen to a surface finish suitable for electron-backscatter diffraction (EBSD). Specimens should naturally rotate around the polishing bowl allowing users to set-up the system and walk away. The instrument along with the following accessories should be supplied.</p> <p>a) 3 numbers of specimen holders of 2 inches (50mm) length b) Colloidal Silica, 64oz (2 litres) c) 10 numbers of MicroCloth, 12in (305mm) diameter</p>			
20.	Warranty & Training	<p>a) 3 year comprehensive warranty. Warranty should start from the date of completion of installation. b) Full on-site training must be given to BGRL/MoES for the smooth operation of FESEM and, for data acquisition, processing and interpretation. c) One week initial training during installation and at least 10 days of advanced training after 4 months of installation of machine at the customer site. All the training should be part of the supply and installation.</p>			
21.	UPS	Branded 15 KVA or better with at least 1 hour back-up time and 3 year warranty on UPS and batteries.			
22.	Sputter unit	Good quality sputter units (gold and carbon separately) from column OEM supplier with turbo molecular/ rotary pump and with necessary vacuum gauges.			
23.	Required documents	a) List of at least 3 Institute/laboratories in India			

	along with technical specification	with similar system installed during last 5 years b) The supplier should provide calibration /traceability certificate of the equipment.			
24.	Pre-installation requirements	Pre-installation requirement such as required power, space, etc. are to be surveyed by the supplier at the installation site and inform to BGRL.			
25.	Operation Table Tool kit	Anti- vibration table along with associated accessories. Essential tool kit for FESEM to be provided for handling during preventive maintenance.			
26.	Application notes	The supplier must provide up-to-date technical brochures adequately explaining the availability of the features in the model of the equipment supplied.			
27.	Up-gradation	The supplier should supply upgraded softwares whenever there is an up-gradation during warranty period.			
28.	Compliance statement	The supplier must submit a table indicating the compliance of the features of the model of the equipment being quoted with those given in the indent verifiable through Printed brochures of the Principals / OEM and webpage:- Features not matching – must be clearly indicated. Additional features and features in the quoted equipment which are better than those in the indent – may be clearly mentioned and explained.			
29.	Availability	The model quoted should be explicit and one of the latest with spares availability letter from principals for next 10 years			

	of spares	post the expiry of the warranty.			
30.	Post warranty AMC	AMC charges for the five years after initial 3 year warranty to be mentioned with a yearly charge breakup (to be quoted separately). This cost will be a part of the price bid but will not be considered for determining L1.			

3. Commercial and Other Terms & Conditions

Requirements			Specifications Offered by the Bidder	Complied /Non-Complied	Deviation if any with remarks
1.	Delivery schedule	Delivery of one no. of FE-SEM including all detectors and accessories, above specified attachments shall be done at BGRL campus, Hazarmachi, Karad, Maharashtra within 180 days from the date of placement of supply order.			
2.	Late Delivery Charges	If firm is unable to meet above delivery schedule a Late Delivery charges of 0.5% of the goods value for undelivered portion per week will be levied, subject to maximum value of LD being not higher than 10% of the value of the delayed stores. Late delivery charges will be deducted from the final payment.			
3.	Installation Terms	Item shall be installed within 90 days from the date of delivery of stores at BGRL campus, Hazarmachi, Karad, Maharashtra. If Firm is unable to install the system within 90 days, of the delivery, then also LD charges of 0.5% of total value of the uncompleted portion of work per week is levied, subjected to maximum of 10% of the total value of the store. Late installation charges will be deducted from the final payment.			

4.	Factory Acceptance Test (FAT):	As per the clause 6.1.1 in RFP			
5.	Site Acceptance Test	As per the clause 6.1.2 in RFP			
6.	On Site Training	The successful bidder should provide in-depth training on operation and maintenance of the instrument to the nominated personnel of BGRL. One week initial training during installation and at least 10 days of advanced training after 4 months of installation of machine should be provided. All the training should be given by factory qualified engineers, free of cost.			
7.	Warranty Terms	As per the clause 6.4 in RFP			
8.	Qualification criteria for bidders	As per clause 4 in RFP			
9.	Bidder's Obligation:	As per the clause 9 in RFP			

4. General terms and conditions

Requirements		Specifications Offered by the Bidder	Complied /Non-Complied	Deviation if any with remarks
1.	Validity of Tender	The tenders shall remain valid for acceptance for a period of 240 days (Two Hundred Forty Days) for Technical Bid after the date of opening of tender as prescribed in the TE document.		
2.	Price bid	As per clause 8.3 in GI		
2.	Bid security declaration	As per Annexure-2A		
3.	Performance Security	As per the clause 25 in GI (Section II)		

4.	Penalty/ Liquidity Damage:	As per the clause 29 in GI (Section II)			
5.	Terms and Mode of Payments:	As per the clause 34 in GI (Section II)			
6.	Termination of tender:	As per the clause 35 in GI (Section II)			
7.	Arbitration	As per the clause 36 in GI (Section II)			
8.	Force Majore	As per the clause 37 in GI (Section II)			
9.	Fall Clause	As per the clause 38 in GI (Section II)			

Letter Head of the OEM

AGENCY AGREEMENT

Tender Enquiry No. dated

This is to certify that _____ (as Indian Agent) having their registered Office at _____ (complete Address of Indian Agent) will be representing _____ (as Manufacturer/OEM) as our Agents in India for products being manufactured, under following terms.

1.	Date of appointment as Indian Agent	
2.	Date to which the Agreement is valid	
3.	Authority to commit & sign on behalf of OEM whose signature, Name, Designation are given.	
4.	Product (s) covered in Agreement.	
5.	After-sales Services and Back up Support	
6.	Back to Back arrangement during installation, warranty, AMC	

(Authorized signatory of OEM) Designation Name : Address of Indian Agent: Email Id: Tel No. Fax No. Company seal

(Authorized signatory) Designation Name : Address of Indian Agent: Email Id: Tel No. Fax No. Company seal
--