राष्ट्रीय पृथ्वी विज्ञान अध्ययन केंद्र
NATIONAL CENTRE FOR EARTH SCIENCE STUDIES
(An Institution under the Ministry of Earth Sciences, Govt. of India)
P.B. No. 7250, Akkulam, Thiruvananthapuram-695 011, Kerala.

क्रय विभाग/PURCHASE DIVISION

हमारा संदर्भ/Our Ref : PUR-PROC/155/2026-PUR-NCESS **दिनांक/ Dt. 30/10/2026**

(To be quoted in all correspondence)

फोन/Phone : (0471) 2511531
ईमेल /E-mail : ncesspurchase@gmail.com
purchase@ncess.gov.in
जालस्थल/website : www.ncess.gov.in

विषय/*Sub*: Global Tender Enquiry

Dear Sirs,

Please send your offer along with descriptive catalogue/ pamphlet for the following items not later than ***07/12/2026 at 06.00 PM (Tender Opening at 11.00 AM on 09/12/2026)***. The terms and conditions governing the tender are given at the bottom.

क्रम संख्या/ *Sl. No*	विवरण/ *DESCRIPTION*	आवश्यक मात्रा/ *QUANTITY REQUIRED*
1	**Field Emission Scanning Electron Microscope (FE-SEM) and its Accessories**	**01 No**

(Detailed specification and conditions are given separately)

INSTRUCTIONS TO THE TENDERERS AND TERMS AND CONDITIONS

1. **The quotation should be submitted by e-procurement in PDF format by 'logging on' on the website eprocure.gov.in/eprocure/app.** The total file size of the documents submitted should not exceed 20 MB.
2. **The Technical and Financial Bids should be submitted separately (Two Bid System).**
3. **In place of a Bid security, the bidders must sign a Bid securing declaration along with the bid stating that "We accept that if we withdraw or modify our Bids during the period of validity, or if we are awarded the contract and we fail to sign the contract, or to submit a performance security before the deadline defined in the request for bids document, we will be suspended for the period of time decided by NCESS from being eligible to submit bids for contracts with NCESS". The bids without this declaration or Udyog Aadhar Memorandum /NSIC will be rejected**.
4. Bidders from a country which shares a land border with India will not be eligible to participate in this tender, unless the bidder is registered with Department for Promotion of Industry and Internal Trade (DPIIT) under Order (Public procurement No. 1) issued by Ministry of Finance, Department of expenditure in line with OM No. F.No.6/18/2019-PPD dt 23rd July, 2020 and F.18/37/2020-PPD, dt. 08.02.2021inserting Rule 144 (xi) in GFR 2017.

5. **Fall Clause**: An undertaking has to be provided by the bidder that it has not supplied / is not supplying similar product / systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry / Department of the Government of India or PSU and if it is found at any stage that similar product / systems or sub systems was supplied by the bidder to any other Ministry/Department of the Government of India, or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the bidder to NCESS, if the contract has already been concluded.
6. **MAF:** The authorisation from the manufacturer should be tender specific, i.e., tender reference number and date should be mentioned in the certificate. A bidder shall not have conflict of interest with other bidders. In cases, where the manufacturer has submitted the bid, the bids of its authorised dealer will not be considered and in case of violations, both infringing bids will be rejected.
7. Bids are liable to be rejected as nonresponsive if a Bidder fails to provide and/ or comply with the required information, instructions etc., incorporated in the Tender document or gives evasive information/ reply against any such stipulations. Furnishes wrong and/ or misguiding data, statements(s) etc. In such a situation, besides rejection of the bid as nonresponsive, it is liable to attract other punitive actions under relevant provisions of the Tender Document for violation of the Code of Integrity.
8. During the evaluation of Techno-Commercial or Financial Bids, NCESS may at its discretion, but without any obligation to do so, seek any shortfall information/documents only in case of historical documents which pre-existed at the time of the tender opening and ask the Bidder to clarify its bid by a specified date. Bidder should answer the clarification with in that specified date (or, if not specified, 7 days from the date of receipt of such request). The request for clarification shall be submitted in writing or electronically. If discrepancies exist between the uploaded scanned copies and the Originals submitted by the bidder, the original copy's text, etc, shall prevail. Any substantive discrepancy shall be construed as a violation of the Code of Integrity, and the bid shall be liable to be rejected as nonresponsive in addition to other punitive actions under the Tender Document for violation of the Code of Conduct.
9. From the time of bid submission to awarding the contract, no Bidder shall contact NCESS on any matter relating to the submitted bid. If a Bidder needs to contact NCESS for any reason relating to this tender and/ or its bid, it should do so only in writing or electronically. Any effort by a Bidder to influence the Procuring Entity during the processing of bids, evaluation, bid comparison or award decisions shall be construed as a violation of the Code of Integrity, and bid shall be liable to be rejected as nonresponsive in addition to other punitive actions for violation of Code of Integrity as per the Tender Document.
10. After the award of contract, the supplier encounters conditions hindering timely delivery of the Goods, he/she shall promptly inform NCESS in writing about the same and its likely duration. NCESS shall examine the situations and, at its discretion, may agree to extend the delivery Schedule, with or without Liquidated Damages (LD). When the period of delivery is extended due to unexcused delay, the amendment extending the delivery period shall, inter alia, be subject LD to a maximum deduction of the 10% of the delayed Goods contract price (all inclusive) and with and without denial clause. Nevertheless, NCESS shall be entitled to the benefit of any decrease in price on account of reduction in or remission of GST, customs duty or foreign exchange rate variation or any other variation clause which takes place after the expiry of the original delivery date.
11. **Force Majeure:** On the occurrence of any unforeseen event, beyond the control of either Party, directly interfering with the delivery of Goods arising during the currency of the contract, such as war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, or acts of God, the affected Party shall, within a week from the commencement thereof, notify the same in writing to the other Party with reasonable evidence thereof. Unless otherwise directed by the NCESS in writing, the supplier shall continue to perfume its obligations under the contracts far as reasonably practicable and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event, If the force majeure condition(s)mentioned above be in force for 90 days or more at any time, either party shall have the option to terminate the contract on expiry of 90 days by giving 14 days' notice to

the other party in writing. In case of such termination, no damage shall be claimed by either party against the other. None of the Party shall seek any such remedies or damages for the delay and/ or failure of the other party in fulfilling its obligations under the contract if it is the result of an event of Force Majeure.

12. ***The bidder should enclose all relevant documents in a sequential manner as per the tender format.*** **The bid should contain the Bid securing declaration, Land Border declaration, Authorization from manufacturer, Fall Clause, Latest Price Proofs, Details of service Centre, Technical details with make, model and specification of each component, Technical Compliance statement, List of Customers, Brochures etc., wherever applicable.**
13. Catalogue/Brochure/Manual should be submitted along with the offer wherever necessary.
14. Warranty / Guarantee Clause needs to be mentioned necessarily wherever applicable.
15. The material should be delivered at NCESS or installed at the specified location and so the quotation should include all the charges for the delivery at NCESS/installation.
16. **In INR orders, the Customs Duty Exemption Certificate will be given to the supplier upon request. But the entire responsibility of customs clearance and delivery at NCESS will rest with the supplier. High sea sale is not accepted and should not be quoted.**
17. **In the case of imports, both FCA and CIF/CIP Trivandrum airport prices may be quoted**
18. **The offer should be valid for 180 days from the due date of opening of tender.**
19. NCESS reserves right to accept the tender in part or full without assigning any reasons. The enquiry is not a commitment, and the purchaser reserves the right to reject or cancel any or all offers.
20. **Payment Terms:**

If Indian Purchase Order

a. 90% upon delivery and acceptance of entire system by NCESS and submission of Invoice, applicable Test Certificate, Installation Certificate, Warranty Certificate.
b. Balance10% will be paid against submission of performance bank guarantee from a nationalized bank for the applicable amount valid for the warranty period plus 60 days or after successful completion of warranty period.

If Foreign Purchase Order

a. LC will be established for 100% of order value against which 70% will be released on submission of Order Acceptance, Proforma Invoice, LC details and other shipping documents etc.
b. Balance 30% will be after submission of performance bank guarantee from a nationalized bank for the applicable amount valid for the warranty period plus 60 days or successful completion of warranty period.

21. **Payment Terms for CMC/AMC :**
    a. Shall be paid in half yearly instalments on submission of original invoices
    b. 50% advance payment at the commencement of each contract year and 50% after six months of the contract year

Net payment will be released after statutory deductions. No advance payment will be allowed, and no other payment terms will be considered.

22. **In the event of placement of order, the successful bidder shall provide a Performance Bank Guarantee from a Nationalised Bank for 3% - 5% of the order value (DoE OM No. F.1/2/2023-PPD dated 01.01.2024) wherever applicable. The PBG shall stand valid for the warranty period + 60 days.**
23. Any further changes in the details, like the date of opening or specification, will be posted on our web site only.

ADDITIONAL CONDITIONS

1. **Pre-bid meeting will be conducted on 04-11-2026 at 11.00 AM through hybrid mode**. Interested vendors may confirm their pre-bid meeting participation by e-mail addressed to sneha.m@ncess.gov.in with Cc to purchase@ncess.gov.in on or before **03-11-2026 (4:00 pm)**. If no such confirmation of attending the pre-bid meeting has been received from any vendors upto this date, no pre-bid meeting will be held. Any decision/ change regarding pre-bid meeting will be informed through NCESS website. All clarifications required regarding the tender, including the points to be discussed in pre-bid meeting, should be sent by e-mail to sneha.m@ncess.gov.in with Cc to purchase@ncess.gov.in on or before **03-11-2026 (4:00 pm)**. Late submission/ e-mails will not be considered.
2. **Integrity Pact is applicable to this tender**. The format of the Integrity Pact is attached as annexure to this tender document. The Integrity Pact should be filled in and printed on non-judicial stamp paper worth Rs 500/-. Signed Integrity Pact should be submitted by the bidders/ OEMs at Purchase Section, NCESS on or before the last date of submission of bid. The bids of only those bidders who have submitted the signed integrity pact within the specified time will be accepted during the bid opening. Late submissions will not be accepted.
3. The **Independent External Monitors** for this tender are **Ms. Arti Bhatnagar,** IDAS (Retd) (email: msarti@rediffmail.com) and **Shri Upamanyu Basu**, IRS (IT) (Retd) (email: upamanyubasu@gmail.com)

Yours faithfully,

Sd/-
Deputy Manager (Purchase & Stores)

Detailed Specifications

SL. No	Required Specification
I	**Field Emission Scanning Electron Microscope (FE-SEM) and its Accessories - 1 No.** ITEM: Supply, Installation & Commissioning of Field Emission Scanning Electron Microscopy (FESEM) along with integrated Energy Dispersive Spectroscopy (EDS) & Electron Backscatter Diffraction (EBSD) systems. (Scope: The Field Emission Scanning Electron Microscopy (FESEM) along with Energy Dispersive Spectroscopy (EDS) system & integrated Electron Backscatter Diffraction (EBSD) system is a high-resolution electron microscopy system, which is suitable for the analysis of surface morphology and elemental analysis (composition and mapping) of the samples in the form of metallic/non-metallic, crystals, thin films, polymers, metal oxides, etc. in the order of micro- to nano- scale dimensions)
1.	**Resolution in High vacuum mode:** • ≤ 0.5nm @ 15kV Acceleration Voltage. • ≤ 1nm @ 1kV Acceleration Voltage. • All the resolution claimed above should be supported by OEM website and OEM catalogue. The best achievable resolution at the above indicated voltages to be quoted, which can be with or without beam deceleration technology or DCV methods.
2.	**Resolution in Low vacuum mode:** • ≤ 1.3nm at 30kV/15KV acceleration voltage. • Variable pressure should be available upto 300 Pa for all nonconductive samples.
3.	**Accelerating Voltage:** • Lower limit: 100 V or less and Higher limit: 30 kV or higher.
4.	**Probe Current:** • Probe current – 10^{-5} to 10^{-3} or 1 nA - 300 nA • Probe current stability should be ≤0.5% / 1 hr or ≤ 1% / 12 hrs to allow long-term EDS and EBSD measurement.
5.	**Magnification:** • Continuously variable with auto compensation for the change in working distance and accelerating voltage. Magnification range should be ≤20× to ≥10,00,000×.
6.	**Electron Gun:** • High Resolution Schottky type Field Emission Gun with five years standard warranty. • It should be replaced free of cost If FE-Gun fails within comprehensive warranty period. • 5-year operational warranty for FE-Gun
7.	**Electron Optics:** • Beam Deceleration (BD)/Beam Booster (BB)/Gentle Beam (GB) technology for high-resolution imaging even at lower KV (3 kV). • High-resolution imaging of dia-, para-, or ferromagnetic samples - in any composition and together with other materials should be possible even at short working distances and lower acceleration voltage. • The final objective lens must be combination of Electrostatic and magnetic lens or compound lens. There should not be any sample restriction from conductive sample to non conductive sample. It should be easily possible with any type of magnetic samples as well.

8.	**User Interface:** • Keyboard, Mouse, Control Panel with multifunction for the control and adjustment of frequently used FESEM parameters.
9.	**Specimen Stage:** • It should be 5 axis motorized fully Eucentric specimen stage with all motorized stage movements. • X ≥ 100mm or higher - Fully motorized. • Y ≥ 100mm or higher - Fully motorized. • Z ≥ 50 mm or higher - Fully motorized. • Tilt: -3° or less to +70° or higher – fully motorized. • Full Rotation: 360° – Fully motorized.
10.	**Specimen Chamber:** • Chamber should be capable to upgrade all future possible detectors. • At least 3 or more ports should be available for future detector expansion. • Chamber viewing camera should be provided.
11.	**Specimen Size:** • More than 3 Specimen chamber should be capable to accommodate large specimen size. • Specimen size: ≥200 mm dia and ≥ 50 mm height.
12.	**Specimen Exchange & Vacuum System:** • Specimen exchange should be possible through Airlock/loadlock mechanism for easy and faster sample exchange. Suitable vacuum systems having Ion Getter Pump/ Sputter Ion Pump, TMP and dry scroll pump for ultra-clean and fast pumping must be provided along with primary pump. All necessary gauges and valves must be included. • Pump downtime should be 5 minutes or less with use of an Airlock/loadlock system. • Airlock compulsory
13.	**Sample Holder:** • Multisampling specimen holder with 7 position or more should be provided. • Suitable Sample stubs to be provided – 100 Numbers • Carbon Tape – 5 Nos should be supplied.
14.	**Auto Functions:** Gun alignment, Focus, Stigmation, Brightness, Contrast, Wobble and Beam alignment should be automatic.
15.	**Six Imaging Detectors should be offered:** • Dedicated chamber mounted SE Everhart Thornley Detector. • Dedicated retractable type segmented Back scattered electron detector. • Dedicated in lens type/ through the lens type SE detector. • Dedicated In lens type / through the lens type BSE detector. • Dedicated Low vacuum SE detector. • Panachromatic type CL detector with wavelength range from ≤ 350nm to 900nm. It should be possible for RGB images with the filter option.
16.	**Analysis Detector Integrated EDS and EBSD system:** • EDS system should be state of art system designed to work in compliance with the ISO 15632:2021 • The EDS detector should be LN2 free type SDD proximity sensor based having sensor area of at least 60 mm^2 or more with the energy resolution on Mn-kα to be ≤127eV at count rate of

	100,000cps to be guaranteed at site (published specification). The resolution on carbon should be guaranteed to be ≤ 46eV (published specification). • The EDS system should be capable of quantifying the elements ranging from Beryllium (Be) to Californium (Cf) • The detector movement should be motorized with hardware as well as software controlled. • The EDS Detector and associated electronics should be very stable such that the shift in peak Position and Resolution should be <1eV from 5000cps upto 100,000cps. • The EDS software should have the following features in real time mode. ➢ Live chemical imaging in real time. ➢ Live Spectrum in real time ➢ Live Auto peak labelling and quantification in real time. ➢ Overlay the Theoretical Spectrum on the Measured Spectrum to validate the accuracy of spectrum processing ➢ Live Mapping in real time. • EDS software should have the options for: ➢ Point and multi-point analyses ➢ Customized area analysis ➢ Line analysis ➢ Elemental mapping • Software should have provisions to record and revisit locations visited during live mapping • Fully automated Large Area EDS Mapping • Automated spectrum and map acquisition • Composite map to automatically combine electron images, elemental maps in a single image • Beam drift correction feature for EDS mapping • Quantitative mapping and line scan • Automatic phase mapping • Overlap and background corrected mapping • Customized reporting of the results into Microsoft word and excel file • Large Area Mapping • Image registration for correlative analysis • Automated queueing of multiple elemental mapping • Built in reporting templated for EDS and EBSD data exporting • Navigator based EDS software designed to do Qualitative and Quantitative analysis based on latest XPP matrix corrections. Point&ID, Line Scanning, Mapping with spectral imaging to reconstruct EDS spectrums from stored Map data. • The standard sample(s) should be provided for user defined beam and x-ray calibration • Calibration certificate with resolution test of the detector in line with ISO standards and efficiency test results with measured average input CPS from the standard sample must be provided after successful installation of the EDS detector • The EBSD system should be integrated with the EDS system on the same software platform. • To facilitate the low kV EDS analysis, the EDS system software should also include internal standard acquired at 5 kV or below.
17.	**Analysis Detector.2 - EBSD Detector.** • The EBSD system should include the hardware consisting of EBSD camera/detector and control electronics and the software for acquisition and indexing of electron backscatter diffraction patterns for phase studies, Phase mapping applications and texture related studies. • The EBSD system should be integrated with the EDS system on the same software platform. This integration should be done seamlessly and guaranteed at site.

	• The EBSD camera should be based on C-MOS sensor with at least 1244 x 1024 pixels Resolution. • The EBSD camera should be capable of achieving the real time indexing speed of at least 5500 patterns per second or more. • The coupling between EBSD phosphor screen and C-MOS sensor should be based on NON-refracting optics to achieve a sensitivity of 1000pps/nA. • EBSD detector should have proximity sensor to avoid collision even before it occurs between phosphor screen and sample/stage. • The angular resolution should be at least 0.050 degrees or better. • The EBSD detector should have motorized hardware & software controlled in-chamber tilting interface option to analyze the samples at shorter or longer working distance. • EBSD detector should have minimum 5 integrated FSD diodes for rapid atomic and orientation contrast imaging of the sample structure. • Functionality to generate False colour FSD images to provide high contrast and colourful images ideal for displaying microstructural details. • Testing has to be done on institute provided samples • 5-year software upgeadation warranty at free of cost • All necessary standards should be provided for proper calibration of EBSD detector to ensure accurate and reliable crystallographic measurements. • The EBSD software should have the following features. ➢ Latest Data Acquisition Software working on WINDOWS 11 64bit platform. ➢ System software with the latest indexing algorithms. ➢ Auto tilt correction. ➢ Phase Reflector File Creation Software. ➢ Pole Figure and Inverse Pole Figure Software – texture analysis. ➢ Mapping Software–post processing for grain size, grain Boundary Characteristics, etc. ➢ ODF Software – texture analysis ➢ EBSD reanalysis feature ➢ Transmission Kikuchi Diffraction/T-EBSD indexing and mapping ➢ Imaging, Beam and stage Control feature ➢ Phase Identification Software ➢ ICSD Data Base ➢ American Mineralogist Data Base ➢ NIST Data Base ➢ Drift correction software option ➢ Fully automated Large Area EBSD Mapping ➢ Automated queueing of EBSD mapping. ➢ Advanced Phase Discrimination using integrated EDS & EBSD ➢ Map data cleaning tool ➢ Map data classification feature for partitioning data into classes ➢ Feature to calculate and show elastic properties of grains based on orientation information • Latest EBSD data postprocessing software • 2 additional offline licenses should be supplied. • 1 TKD holder should be supplied with the system. • Factory configured EDS and EBSD Acquisition PC/workstation must be supplied with Windows11 OS • All the monitors supplied for FESEM, EDS, EBSD and offline EDS & EBSD processing should be of 27-inch size.

	• Calibration certificate with detector orientation details and pattern center deviation measurements must be provided after successful installation of the EBSD detector • The EDS and EBSD supplier should have the factory trained local service engineer to install, service and maintain the EDS and EBSD systems. The application specialist should be locally available for application support for later date.
18.	**Computer for Microscope** • FESEM manufacturer compatible workstation should be supplied from the factory with latest configuration, keyboard, mouse, monitor, latest Windows licensed Operating system preferably • Windows 11 or up to the date • ≥ 29-inch or better monitor. • Image Size ≥ 5120 X3840 pixel. • Image depth: up to 16 bits or better. • Image format: BMP, TIFF, JPEG, JPEG2000, GIF, PNG etc. • 1 additional computer/workstation with 29 inch or better monitor and integration cable, keyboard, mouse, compatible for EDS and EBSD offline processing**.**
19.	**Spares and Consumables and Essential tools** • Essential Spares, consumables and maintenance tools should be included along with instrument for regular operation and preventive maintenance work.
20.	**Power Supply** • Over all Power requirement of the instrument should be provided. (Including Peripherals like chiller and air compressor). • Instrument should be compatible with Indian power standard conditions i.e, Single phase (230V) / Three phase (415V)@50Hz • Power supply connectors of the Instrument should be compatible with Indian standards.
21.	**Installation and training** • After installation and commission, necessary primary offline training has to be provided on the operation, Maintenance and application of the instrument at our site by the OEM specialist and advance training needs to be provided after 4 months from installation
22.	**Training for FESEM, EDS and EBSD** • Application Training must be provided separately by the competent factory trained Engineer / Specialist.
23.	**Water chiller.** • Operating voltage- Single Phase 230VAC, 50Hz. • Ambient Temperature- At least 32ºC • Acoustic Noise level- Less than 65dBA @1m • Protection- Over Temperature & Low water level. • Note:- Water chiller should be compatible with supplied instrument and should be capable of working regular and continuous operation i.e. 24 x 7 operation. The electromagnetic lenses should be cooled by the recirculating water from chiller.
24.	**Air compressor.** • Acoustic Noise level: Less than 65dBA@1 meter or better • Ambient Temperature: At least 35ºC • Operating Voltage- Single Phase 230VAC, 50Hz

	• Protections- High Pressure and Low Pressure trip • Note: - Air compressor should be compatible with supplied instrument and should be capable of working regular and continuous operation i.e. 24 x 7 operation
25.	**Other Installaion accessories** • 15kVA UPS with atleast one hour battery back up should be supplied for trouble free operation. • Regular N2 cylider with all necessary regulator – 2Nos should be included. • Good quality silicon tube – 15m Length. • Additional Branded table for sample preparation installation – 2 Nos. • Rotating and height adjustment chair – 3 Nos. • Dehumidifer to cover the area of 250 Sq.ft – 1 No ➢ Capacity @30C,80%RH: >20Litres/Day ➢ Noise Level dB(A) :<50dB ➢ Tank Capacity :>5Litres ➢ Water Tank Full Alarm & Water Continuous Drain Option ➢ Auto shut off when water tank is full ➢ Easily movable (with wheels) • Vacuum cleaner with powerful sucion - 1 No. ➢ Suction power115 AW ➢ Bin Volume0.54 L ➢ Filtration Advanced filtration • Rotating table Arm for multiple monitor installation- 1 No • Dry Cabinet- Capacity: 80 litres, Moisture control range: 25% - 60% RH, Moisture control: microcomputer digital control adjustment, Display mode: LED LCD dual display (temperature and humidity)- 1 No • 1.6 TR Inverter 5 Star Rated Split Air Conditioners (Cooling Capacity 5628 watts (19203 Btu / hr) Power Cons.1473 watts Energy Efficiency Ratio (ISEER) 5.12 Indoor Sound level 46(H) 39 (M) 32 (L) 23 (SL), 100% Copper, WiFi-Control Function) along with voltage stabilizers and switch over timer for whole day operation – 4 Nos. • Digital Thermometer – 1 No • Multi-Functional colour Laser Printer – 1 No • Supplier should be responsible to arrange the dedicated earthing , necessary electrical wiring and aluminium partition required for FESEM installation at NCESS Trivandrum site.
26.	**Site Inspection** • Bidders must conduct site survey for vibration, acoustic and EMI after placement of PO at no additional cost. Tentative installation room layout should be submitted along with tender.
27.	**Onsite Warranty** • Five-years comprehensive on site OEM warranty for FESEM, EDS, EBSD inclusive of field emission gun and sample preparation equipments should be provided. Warranty implies no part or labor cost will be levied. Any breakdown period exceeding 5 days will be added to the warranty duration. Warranty should also cover any software issues. It should quote separately
SAMPLE PREPERATION EQUIPMENTS	
28.	**Fully automated Gold Coater** • Target type - Au target diameter 57mm and 0.1mm thickness • Additional Au Target with purity more than 99.99% – 2 Nos. Additional Platinum Target with purity more than 99.99%- 2Nos • Power requirement- Single Phase 230VAC, 50Hz.

	• Should accommodate seven samples. No tilt/rotation required. • Timer- With 15 sec resolution up to 180 sec or better. • Sputter current- Variable from 10mA,20mA,30mA,40 mA or better. • Working pressure- 20 Pascal or less.
29.	**Carbon Coater** • Evoporation source should be Carbon. • Carbon rod should be easily attached to the electrode clip. • An additional Carbon rod (minimum 10 tubes each with 5 rods) /Thread (minimum 4) should be supplied as spare. • It should be possible to adjust the film thickness by changing the height of the specimen stage. • All necessary vacuum pump should be supplied. • Working pressure- 20 Pascal or less.
30.	**Vibrating Polisher required for EBSD samples particularly for geological applications.** • It should be possible to remove minor deformation remaining after mechanical preparation revealing a stress-free surface without need for the hazardous electrolytes required by electropolishers. • Machine should have horizontal frequency 50 to 120 hz. • Vibrating polisher should have bowl size 305 mm dia for polishing specimen of different sizes. • Vibrating polisher should be capable to polish multiple samples simultaneously-more than 15 specimen of 1 inch dia can be polished. • Offered bowl should be removable type for easy cleaning. • Supplier should provide colloidal silica to chemo-mechanically polish a rock specimen to a surface finish suitable for electron backscatter diffraction (EBSD). • It should be compatible with Indian standard power supply system 220VAC and 50Hz. • 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) 2 numbers of specimen holders for polishing standard thin section with 46.5 mm width and 27.8 mm height. b) 2 numbers of specimen holder for rock sample mounted core with 25mm diameter and 22 mm height. c) Colloidal Silica, 64oz (2 liters) should be included. d) 10 numbers of MicroCloth should be included.
31.	**General Terms and Conditions** • The supplier must submit a point-wise compliance table (soft copy) indicating the compliance of the features of the model of the equipment being quoted with those given in the Specifications. • 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 explained. • The supplier must submit technical brochures and proper application notes adequately explaining and confirming the availability of the features in the model of the equipment being quoted. • The tenderer should provide the number of installations of similar configuration in India or abroad (at least 3 or more) with their contact details. PO copies or installation certificates of the same or similar model, along with contact details of end users, need to be submitted as proof of supply.

	• Bidders must have 3 years of experience in supplying similar types of equipment and long-term services for the same/similar model of equipment in IITs/NITs or any other Govt. Organization. • Feedback from previous customers will be part of the technical evaluation. • Declaration from supplier that spare parts should be available for a minimum of 10 years from the date of installation of the equipment. • Manufacturer Authorization Form from the OEM is required. • Delivery period should be 11 months from the LC issuance date. • Payment: Letter of Credit (LC): 70% of the payment will be released upon shipment, with the remaining 30% after completion of satisfactory installation, commissioning, demonstration of the whole system, after imparting training and upon receipt of Bank Guarantee for 3-5% of total Order value towards performance security to be valid for till warranty period from the date of installation.

राष्ट्रीय पृथ्वी विज्ञान अध्ययन केंद्र

NATIONALCENTRE FOR EARTH SCIENCE STUDI

P.B. No. 7250, MEDICAL COLLEGE P.O., AKKULAM, THIRUVANANTHAPURAM-695 011, INDIA

Tel: 91-471-2511531 e-mail: purchase@ncess.gov.in

TENDER FORM

Tender No. & Date	:	**PUR-PROC/155/2026-PUR-NCESS Dt.30/10/2026.**
Due Date	:	***07.12.2026 (06.00 PM).***
Date of Opening	:	***09.12.2026 (11.00 AM).***
Venue of Opening	:	National Centre for Earth Science Studies, P.B.No.7250, Medical College P.O., Thiruvananthapuram – 695 011.
Description of stores	:	**Field Emission Scanning Electron Microscope (FE-SEM) and its Accessories**
Quantity	:	**01 No.**

Sirs,

The Head, Administration (i/c) on behalf of the Director, National Centre for Earth Science Studies (NCESS), invites bids for the supply of stores mentioned above. The tender documents are classified as Annexure-A and Annexure-B. Annexure-A is a specimen tender form meant for suppliers and the bid should contain all the details specified therein. The instructions to the tenderers and the general terms and conditions applicable to the Purchase Orders placed by NCESS are given under Annexure-B. Those who are able to quote for the stores in accordance with the above requirements, may please furnish their offer through GeM, on or before the last date and time specified in the tender.

Any deviations from the terms and conditions of the Annexure-B must be clearly indicated in the offer.

Yours sincerely,
Sd/-
Head, Administration (i/c)

ANNEXURE A

The Head, Administration (i/c)
National Centre for Earth Science Studies,
P.B.No.7250, Akkulam, Medical College PO,
Thiruvananthapuram – 695 011.
Kerala, India

Sir,

Sub: Your Tender No ……Dated……

I/We hereby offer you to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till ……I/We shall bind to supply the stores hereby offered, upon the issue of the purchase order communicating the acceptance thereof on or before the expiry of the delivery date therein. You are at the liberty to accept any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole shall be bound to supply to you such items and such portion or portions of one or more of the items as may be specified in the purchase order communicating the acceptance.

1. Technical Compliance Statement.

Required Specification		Spec offered (with make and model)	Whether complied	Brochure Page No
SL. No	**Required Specification**			
I	**Field Emission Scanning Electron Microscope (FE-SEM) and its Accessories - 01 No.** ITEM: Supply, Installation & Commissioning of Field Emission Scanning Electron Microscopy (FESEM) along with integrated Energy Dispersive Spectroscopy (EDS) & Electron Backscatter Diffraction (EBSD) systems. (Scope: The Field Emission Scanning Electron Microscopy (FESEM) along with Energy Dispersive Spectroscopy (EDS) system & integrated Electron Backscatter Diffraction (EBSD) system is a high-resolution electron microscopy system, which is suitable for the analysis of surface morphology and elemental analysis (composition and mapping) of the samples in the form of metallic/non-metallic, crystals, thin films, polymers, metal oxides, etc. in the order of micro- to nano- scale dimensions)			
1.	**Resolution in High vacuum mode:** • ≤ 0.5nm @ 15kV Acceleration Voltage. • ≤ 1nm @ 1kV Acceleration Voltage. • All the resolution claimed above should be supported by OEM website and OEM catalogue. The best achievable resolution at the above indicated voltages to be quoted, which can be with or without beam deceleration technology or DCV methods.			
2.	**Resolution in Low vacuum mode:** • ≤ 1.3nm at 30kV/15KV acceleration voltage. • Variable pressure should be available upto 300 Pa for all non-conductive samples.			
3.	**Accelerating Voltage:** • Lower limit: 100 V or less and Higher limit: 30 kV or higher.			
4.	**Probe Current:** • Probe current – 10^{-5} to 10^{-3} or 1 nA - 300 nA • Probe current stability should be ≤0.5% / 1 hr or ≤ 1% / 12 hrs to allow long-term EDS and EBSD measurement.			
5.	**Magnification:** • Continuously variable with auto compensation for the change in working distance and accelerating voltage. Magnification range should be ≤20× to ≥10,00,000×.			
6.	**Electron Gun:**			

	• High Resolution Schottky type Field Emission Gun with five years standard warranty. • It should be replaced free of cost If FE-Gun fails within comprehensive warranty period. • 5-year operational warranty for FE-Gun			
7.	**Electron Optics:** • Beam Deceleration (BD)/Beam Booster (BB)/Gentle Beam (GB) technology for high-resolution imaging even at lower KV (3 kV). • High-resolution imaging of dia-, para-, or ferromagnetic samples - in any composition and together with other materials should be possible even at short working distances and lower acceleration voltage. • The final objective lens must be combination of Electrostatic and magnetic lens or compound lens. There should not be any sample restriction from conductive sample to non conductive sample. It should be easily possible with any type of magnetic samples as well.			
8.	**User Interface:** • Keyboard, Mouse, Control Panel with multifunction for the control and adjustment of frequently used FESEM parameters.			
9.	**Specimen Stage:** • It should be 5 axis motorized fully Eucentric specimen stage with all motorized stage movements. • X ≥ 100mm or higher - Fully motorized. • Y ≥ 100mm or higher - Fully motorized. • Z ≥ 50 mm or higher - Fully motorized. • Tilt: -3° or less to +70° or higher – fully motorized. • Full Rotation: 360° – Fully motorized.			
10.	**Specimen Chamber:** • Chamber should be capable to upgrade all future possible detectors. • At least 3 or more ports should be available for future detector expansion. • Chamber viewing camera should be provided.			
11.	**Specimen Size:** • More than 3 Specimen chamber should be capable to accommodate large specimen size. • Specimen size: ≥200 mm dia and ≥ 50 mm height.			
12.	**Specimen Exchange & Vacuum System:** • Specimen exchange should be possible through Airlock/loadlock mechanism for easy and faster sample exchange. Suitable vacuum systems having Ion Getter Pump/ Sputter Ion Pump, TMP and dry scroll pump for ultra-clean and			

	fast pumping must be provided along with primary pump. All necessary gauges and valves must be included. • Pump downtime should be 5 minutes or less with use of an Airlock/loadlock system. • Airlock compulsory			
13.	**Sample Holder:** • Multisampling specimen holder with 7 position or more should be provided. • Suitable Sample stubs to be provided – 100 Numbers • Carbon Tape – 5 Nos should be supplied.			
14.	**Auto Functions:** Gun alignment, Focus, Stigmation, Brightness, Contrast, Wobble and Beam alignment should be automatic.			
15.	**Six Imaging Detectors should be offered:** • Dedicated chamber mounted SE Everhart Thornley Detector. • Dedicated retractable type segmented Back scattered electron detector. • Dedicated in lens type/ through the lens type SE detector. • Dedicated In lens type / through the lens type BSE detector. • Dedicated Low vacuum SE detector. • Panachromatic type CL detector with wavelength range from ≤ 350nm to 900nm. It should be possible for RGB images with the filter option.			
16.	**Analysis Detector Integrated EDS and EBSD system:** • EDS system should be state of art system designed to work in compliance with the ISO 15632:2021 • The EDS detector should be LN2 free type SDD proximity sensor based having sensor area of at least 60 mm^2 or more with the energy resolution on Mn-kα to be ≤127eV at count rate of 100,000cps to be guaranteed at site (published specification). The resolution on carbon should be guaranteed to be ≤ 46eV (published specification). • The EDS system should be capable of quantifying the elements ranging from Beryllium (Be) to Californium (Cf) • The detector movement should be motorized with hardware as well as software controlled. • The EDS Detector and associated electronics should be very stable such that the shift in peak Position and Resolution should be <1eV from 5000cps upto 100,000cps. • The EDS software should have the following features in real time mode. ➢ Live chemical imaging in real time. ➢ Live Spectrum in real time ➢ Live Auto peak labelling and quantification in real time. ➢ Overlay the Theoretical Spectrum on the Measured Spectrum to validate the accuracy of spectrum processing			

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	➢ Live Mapping in real time. • EDS software should have the options for: ➢ Point and multi-point analyses ➢ Customized area analysis ➢ Line analysis ➢ Elemental mapping • Software should have provisions to record and revisit locations visited during live mapping • Fully automated Large Area EDS Mapping • Automated spectrum and map acquisition • Composite map to automatically combine electron images, elemental maps in a single image • Beam drift correction feature for EDS mapping • Quantitative mapping and line scan • Automatic phase mapping • Overlap and background corrected mapping • Customized reporting of the results into Microsoft word and excel file • Large Area Mapping • Image registration for correlative analysis • Automated queueing of multiple elemental mapping • Built in reporting templated for EDS and EBSD data exporting • Navigator based EDS software designed to do Qualitative and Quantitative analysis based on latest XPP matrix corrections. Point&ID, Line Scanning, Mapping with spectral imaging to reconstruct EDS spectrums from stored Map data. • The standard sample(s) should be provided for user defined beam and x-ray calibration • Calibration certificate with resolution test of the detector in line with ISO standards and efficiency test results with measured average input CPS from the standard sample must be provided after successful installation of the EDS detector • The EBSD system should be integrated with the EDS system on the same software platform. • To facilitate the low kV EDS analysis, the EDS system software should also include internal standard acquired at 5 kV or below.			
17.	**Analysis Detector.2 - EBSD Detector.** • The EBSD system should include the hardware consisting of EBSD camera/detector and control electronics and the software for acquisition and indexing of electron backscatter diffraction patterns for phase studies, Phase mapping applications and texture related studies. • The EBSD system should be integrated with the EDS system on the same software platform. This integration should be done seamlessly and guaranteed at site. • The EBSD camera should be based on C-MOS sensor with at least 1244 x 1024 pixels Resolution.			

		• The EBSD camera should be capable of achieving the real time indexing speed of at least 5500 patterns per second or more. • The coupling between EBSD phosphor screen and C-MOS sensor should be based on NON-refracting optics to achieve a sensitivity of 1000pps/nA. • EBSD detector should have proximity sensor to avoid collision even before it occurs between phosphor screen and sample/stage. • The angular resolution should be at least 0.050 degrees or better. • The EBSD detector should have motorized hardware & software controlled in-chamber tilting interface option to analyze the samples at shorter or longer working distance. • EBSD detector should have minimum 5 integrated FSD diodes for rapid atomic and orientation contrast imaging of the sample structure. • Functionality to generate False colour FSD images to provide high contrast and colourful images ideal for displaying microstructural details. • Testing has to be done on institute provided samples • 5-year software upgeadation warranty at free of cost • All necessary standards should be provided for proper calibration of EBSD detector to ensure accurate and reliable crystallographic measurements. • The EBSD software should have the following features. ➢ Latest Data Acquisition Software working on WINDOWS 11 64bit platform. ➢ System software with the latest indexing algorithms. ➢ Auto tilt correction. ➢ Phase Reflector File Creation Software. ➢ Pole Figure and Inverse Pole Figure Software – texture analysis. ➢ Mapping Software–post processing for grain size, grain Boundary Characteristics, etc. ➢ ODF Software – texture analysis ➢ EBSD reanalysis feature ➢ Transmission Kikuchi Diffraction/T-EBSD indexing and mapping ➢ Imaging, Beam and stage Control feature ➢ Phase Identification Software ➢ ICSD Data Base ➢ American Mineralogist Data Base ➢ NIST Data Base ➢ Drift correction software option ➢ Fully automated Large Area EBSD Mapping ➢ Automated queueing of EBSD mapping. ➢ Advanced Phase Discrimination using integrated EDS & EBSD ➢ Map data cleaning tool			

	➢ Map data classification feature for partitioning data into classes ➢ Feature to calculate and show elastic properties of grains based on orientation information • Latest EBSD data postprocessing software • 2 additional offline licenses should be supplied. • 1 TKD holder should be supplied with the system. • Factory configured EDS and EBSD Acquisition PC/workstation must be supplied with Windows11 OS • All the monitors supplied for FESEM, EDS, EBSD and offline EDS & EBSD processing should be of 27-inch size. • Calibration certificate with detector orientation details and pattern center deviation measurements must be provided after successful installation of the EBSD detector • The EDS and EBSD supplier should have the factory trained local service engineer to install, service and maintain the EDS and EBSD systems. The application specialist should be locally available for application support for later date.			
18.	**Computer for Microscope** • FESEM manufacturer compatible workstation should be supplied from the factory with latest configuration, keyboard, mouse, monitor, latest Windows licensed Operating system preferably • Windows 11 or up to the date • ≥ 29-inch or better monitor. • Image Size ≥ 5120 X3840 pixel. • Image depth: up to 16 bits or better. • Image format: BMP, TIFF, JPEG, JPEG2000, GIF, PNG etc. • 1 additional computer/workstation with 29 inch or better monitor and integration cable, keyboard, mouse, compatible for EDS and EBSD offline processing**.**			
19.	**Spares and Consumables and Essential tools** • Essential Spares, consumables and maintenance tools should be included along with instrument for regular operation and preventive maintenance work.			
20.	**Power Supply** • Over all Power requirement of the instrument should be provided. (Including Peripherals like chiller and air compressor). • Instrument should be compatible with Indian power standard conditions i.e, Single phase (230V) / Three phase (415V)@50Hz • Power supply connectors of the Instrument should be compatible with Indian standards.			
21.	**Installation and training** • After installation and commission, necessary primary offline training has to be provided on the operation, Maintenance and			

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	application of the instrument at our site by the OEM specialist and advance training needs to be provided after 4 months from installation			
22.	**Training for FESEM, EDS and EBSD** • Application Training must be provided separately by the competent factory trained Engineer / Specialist.			
23.	**Water chiller.** • Operating voltage- Single Phase 230VAC, 50Hz. • Ambient Temperature- At least 32ºC • Acoustic Noise level- Less than 65dBA @1m • Protection- Over Temperature & Low water level. • Note:- Water chiller should be compatible with supplied instrument and should be capable of working regular and continuous operation i.e. 24 x 7 operation. The electromagnetic lenses should be cooled by the recirculating water from chiller.			
24.	**Air compressor.** • Acoustic Noise level: : Less than 65dBA@1 meter or better • Ambient Temperature: At least 35ºC • Operating Voltage- Single Phase 230VAC, 50Hz • Protections- High Pressure and Low Pressure trip • Note: - Air compressor should be compatible with supplied instrument and should be capable of working regular and continuous operation i.e. 24 x 7 operation			
25.	**Other Installaion accessories** • 15kVA UPS with atleast one hour battery back up should be supplied for trouble free operation. • Regular N2 cylider with all necessary regulator – 2Nos should be included. • Good quality silicon tube – 15m Length. • Additional Branded table for sample preparation installation – 2 Nos. • Rotating and height adjustment chair – 3 Nos. • Dehumidifer to cover the area of 250 Sq.ft – 1 No ➢ Capacity @30C,80%RH: >20Litres/Day ➢ Noise Level dB(A) :<50dB ➢ Tank Capacity :>5Litres ➢ Water Tank Full Alarm & Water Continuous Drain Option ➢ Auto shut off when water tank is full ➢ Easily movable (with wheels) • Vacuum cleaner with powerful sucion - 1 No. ➢ Suction power115 AW ➢ Bin Volume0.54 L ➢ Filtration Advanced filtration • Rotating table Arm for multiple monitor installation- 1 No • Dry Cabinet- Capacity: 80 litres, Moisture control range: 25% - 60% RH, Moisture control: microcomputer digital control			

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	adjustment, Display mode: LED LCD dual display (temperature and humidity)- 1 No • 1.6 TR Inverter 5 Star Rated Split Air Conditioners (Cooling Capacity 5628 watts (19203 Btu / hr) Power Cons.1473 watts Energy Efficiency Ratio (ISEER) 5.12 Indoor Sound level 46(H) 39 (M) 32 (L) 23 (SL), 100% Copper, WiFi-Control Function) along with voltage stabilizers and switch over timer for whole day operation – 4 Nos. • Digital Thermometer – 1 No • Multi-Functional colour Laser Printer – 1 No • Supplier should be responsible to arrange the dedicated earthing , necessary electrical wiring and aluminium partition required for FESEM installation at NCESS Trivandrum site.			
26.	**Site Inspection** Bidders must conduct site survey for vibration, acoustic and EMI after placement of PO at no additional cost. Tentative installation room layout should be submitted along with tender.			
27.	**Onsite Warranty** Five-years comprehensive on site OEM warranty for FESEM, EDS, EBSD inclusive of field emission gun and sample preparation equipments should be provided. Warranty implies no part or labor cost will be levied. Any breakdown period exceeding 5 days will be added to the warranty duration. Warranty should also cover any software issues. It should quote separately			
	SAMPLE PREPERATION EQUIPMENTS			
28.	**Fully automated Gold Coater** • Target type - Au target diameter 57mm and 0.1mm thickness • Additional Au Target with purity more than 99.99% – 2 Nos. Additional Platinum Target with purity more than 99.99%- 2Nos • Power requirement- Single Phase 230VAC, 50Hz. • Should accommodate seven samples. No tilt/rotation required. • Timer- With 15 sec resolution up to 180 sec or better. • Sputter current- Variable from 10mA,20mA,30mA,40 mA or better. • Working pressure- 20 Pascal or less.			
29.	**Carbon Coater** • Evoporation source should be Carbon. • Carbon rod should be easily attached to the electrode clip. • An additional Carbon rod (minimum 10 tubes each with 5 rods) /Thread (minimum 4) should be supplied as spare. • It should be possible to adjust the film thickness by changing the height of the specimen stage. • All necessary vacuum pump should be supplied. • Working pressure- 20 Pascal or less.			

	30.	**Vibrating Polisher required for EBSD samples particularly for geological applications.** • It should be possible to remove minor deformation remaining after mechanical preparation revealing a stress-free surface without need for the hazardous electrolytes required by electropolishers. • Machine should have horizontal frequency 50 to 120 hz. • Vibrating polisher should have bowl size 305 mm dia for polishing specimen of different sizes. • Vibrating polisher should be capable to polish multiple samples simultaneously-more than 15 specimen of 1 inch dia can be polished. • Offered bowl should be removable type for easy cleaning. • Supplier should provide colloidal silica to chemo-mechanically polish a rock specimen to a surface finish suitable for electron backscatter diffraction (EBSD). • It should be compatible with Indian standard power supply system 220VAC and 50Hz. • 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) 2 numbers of specimen holders for polishing standard thin section with 46.5 mm width and 27.8 mm height. b) 2 numbers of specimen holder for rock sample mounted core with 25mm diameter and 22 mm height. c) Colloidal Silica, 64oz (2 liters) should be included. d) 10 numbers of MicroCloth should be included.			

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	31.	**General Terms and Conditions** • The supplier must submit a point-wise compliance table (soft copy) indicating the compliance of the features of the model of the equipment being quoted with those given in the Specifications. • 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 explained. • The supplier must submit technical brochures and proper application notes adequately explaining and confirming the availability of the features in the model of the equipment being quoted. • The tenderer should provide the number of installations of similar configuration in India or abroad (at least 3 or more) with their contact details. PO copies or installation certificates of the same or similar model, along with contact details of end users, need to be submitted as proof of supply. • Bidders must have 3 years of experience in supplying similar types of equipment and long-term services for the same/similar model of equipment in IITs/NITs or any other Govt. Organization. • Feedback from previous customers will be part of the technical evaluation. • Declaration from supplier that spare parts should be available for a minimum of 10 years from the date of installation of the equipment. • Manufacturer Authorization Form from the OEM is required. • Delivery period should be 11 months from the LC issuance date. • Payment: Letter of Credit (LC): 70% of the payment will be released upon shipment, with the remaining 30% after completion of satisfactory installation, commissioning, demonstration of the whole system, after imparting training and upon receipt of Bank Guarantee for 3-5% of total Order value towards performance security to be valid for till warranty period from the date of installation.			

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2. **The list of Indian Customers who have bought the same/similar instrument within the last two years, with contact details:**

3. **Details of Service centre: (In case of dealers, also please state whether Authorised Dealership Certificate is enclosed)**

Place of Delivery: Stores, National Centre for Earth Science Studies, P.B.No.7250, Medical College P.O., Thiruvananthapuram – 695 011, Kerala, India.

I / We understand the instructions to the tenderers and General Terms and Conditions of the Contract governing supplies detailed in Annexure-B. I/We have thoroughly examined the specifications of the stores referred above and my/our offer is to supply stores strictly in accordance with and subject to the terms and conditions stipulated in Annexure-B.

Stamp and Signature of the Tenderer

ANNEXURE B

INSTRUCTIONS TO THE TENDERERS AND GENERAL TERMS AND CONDITIONS OF THE CONTRACT

1. **PRICES:** Tenders shall be made in ENGLISH and submitted with price for delivery at National Centre for Earth Science Studies, Akkulam, Medical College PO, Thiruvananthapuram-11, Kerala. The quoted amount should be inclusive of all charges like packing & forwarding charges, inland freight & other related charges, freight, statutory levies, unloading, installation etc.

2. **RIGHTS OF THE PURCHASER:** The Purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.

3. **VALIDITY OF OFFER:** The prices quoted should be firm and quotation has to be valid for a period of 180 days from the date of opening of tender.

4. **CATALOGUE:** Tenderers shall furnish Leaflet/Technical Literature of the Stores offered by him along with the offer.

5. **TRANSPORTATION:** Stores shall be supplied under supplier's risk.
6. **MODE AND TERMS OF PAYMENT:** Full payment after successful installation/commissioning and acceptance of stores at Purchaser's Site.

7. **WARRANTY:** The supply made by the supplier shall be of best quality and workmanship shall be in accordance with the specifications stipulated in the Purchase Order. Defects/deficiencies shall be made good by the supplier free of cost, notified within the applicable warranty period.

8. **SUBMISSION OF TENDERS: The quotation should be submitted by e-procurement in PDF format by 'logging on' in the website eprocure.gov.in/eprocure/app**

9. **ENGINEER'S SERVICE MANUAL AND INSTRUCTION MANUAL:** The Engineer's Service Manual including Circuit Diagram and Instruction Manual (Original Copies) of the equipment shall be supplied along with the delivery/shipment by the supplier in the event of a purchase order. This aspect should be clearly indicated in the offer.

10. **DELIVERY/SHIPMENT**:

a) The time for delivery of the stores stipulated in the purchase order shall be deemed to be the essence of the contract and delivery must be completed not later than the period specified therein.
b) Failure and termination: If the contractor fails to deliver the stores or any part thereof within the period prescribed for such delivery, the purchaser shall be entitled at his option either;
    i. to recover from the contractor as agreed liquidated damages and not by way of penalty, a sum of 2% of the price of any stores which the supplier has failed to deliver as aforesaid, for each month or part of a month, during which the delivery of such stores may be in arrears or

ii. to purchase elsewhere, without notice to the contractor on the account and at the risk of the contractor, the stores not delivered or there of a similar description (where others exactly complying with the particulars are not in the opinion of the purchaser readily procurable, such opinion being final) without cancelling the contract in respect of the portion of stores not yet due for delivery.

iii. to cancel the contract or a portion thereof and if so desired, to purchase or authorize to purchase of stores not so delivered or others of similar description (where others exactly complying with the particulars are not in the opinion of the purchaser readily procurable, such opinion being final) at the risk and cost of the contractor.

11. LAW GOVERNING THE CONTRACT: The contract shall be governed by the laws of India for the time being in force. The marking of all stores supplied must comply with the requirements of Indian Acts relating to Merchandise Marks and all the rules made under such Acts.

12. JURISDICTION: The courts within the local limits of Thiruvananthapuram, the place from the purchase order is issued, will be the jurisdiction to deal with and decide any matter arising out of the contract subject to the clause 18 hereof.

13. INDEMNITY: The contractor shall at all, times indemnify the purchaser against all claims which may be made in respect of stores for infringement of any right protected by patent, registration of design or trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the contract.

14. ARBITRATION: Not withstanding anything contained in clause 16 above, in the event of any question, dispute or difference arising under these conditions or any condition contained in the purchase order or in connection with this contract (except as to any matters the decision of which is specially provided for by these conditions) the same may be referred to the sole arbitration of the Director, National Centre for Earth Science Studies, Thiruvananthapuram or some other person appointed by him, there will be no objection that the arbitrator is a Govt. servant, who has to deal with matters to which the contract relates or that in the course of his duties as a Government servant he has expressed views on all or any of the matters in the disputes or difference. The award of the arbitrator shall be final and binding on the parties to this contract.

Terms of this contract: -

a) If the arbitrator be the Director, NCESS, (i) in the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor in the office either to proceed with the reference himself, or to appoint another person as arbitrator to (ii) in the event of his being unwilling or unable to act for any reason, it shall be lawful for the Director, NCESS to appoint another person as arbitrator;

Or

b) If the arbitrator be a person appointed by the Director, NCESS, in the event of his dying, neglecting or refusing to act, or resigning or being unable to act for any reason, it shall be lawful for the Director, NCESS, to proceed with the reference himself or to appoint another person as

arbitrator in place of the outgoing arbitrator.

Subject as aforesaid, the Arbitration Act, 1940 and the rule there under and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceeding under this clause. The arbitrator shall have the power to extend with the consent of the purchaser and the contractor the time for making and publishing the award. The venue of arbitration shall be the place as the purchaser in the absolute discretion may determine.

15. **EXERCISING THE RIGHTS & POWERS OF THE PURCHASER:** All the rights, discretions and power of the purchaser under the contract shall be exercisable by and all notices on behalf of the purchaser shall be given by the Director or the Senior Manager of Centre for Earth Science Studies and any reference to 'the opinion of the purchasers' in the terms and conditions contained in this general conditions of the contract shall mean and be construed as reference to the opinion of any of the persons mentioned in this clause.

16. **EXEMPTION FROM PAYMENT OF DUTIES:** The purchaser is eligible for availing customs duty at concessional rate under the relevant rules.

17. **SPARES & ACCESSORIES:** Offers for plant/machinery/equipment/instrument shall also state prices or essential accessories, optional accessories and spares necessary for 5 years of satisfactory operation of the machinery/equipment/instrument offered. Prices for accessories and spares shall be itemised, offers where only lump sum prices are indicated are liable to be ignored. Particular care must be taken to list out each item of spare and quantity recommended and also individual price for these items.

18. **QUANTITY:** The purchaser reserves the right to accept or reject lowest or any offers in whole or in part without assigning any reason. It would therefore be in the interest of the tenderers to clearly understand that the purchaser may accept offers for any quantity of his choice and hence, the percentage of reduction, if any in the price quoted in case of acceptance of tender in whole or part shall be clearly stated.

19. **TRAINING:** The contractor shall, in special cases, if required by the Purchaser provide facilities for the practical training of the purchaser's engineers and technical personnel in respect of repair, maintenance or operation of the plant/machinery/ equipment/ instrument offered at their manufacturing plant in India or abroad. The cost for such training (including travelling, boarding and other related expenses) and the number of trainees and duration of training and any other terms if any, should be indicated separately in the offer.

20. **INSTALLATION & COMMISSIONING:** In the event of an order, the supplier shall arrange satisfactory installation and commissioning of the plant/machinery equipment/ instrument at purchaser's site, free of cost.

21. **SERVICE SOFTWARE/TOOLS:** The service software, tools required if any for the repair/maintenance of the plant/machinery/equipment/instrument shall be quoted separately.

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(To be submitted on Non-Judicial Stamp Paper)

PRE CONTRACT INTEGRITY PACT

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made _____ day of the month of _____ 2026, between, National Centre for Earth Science Studies (NCESS) through the Director, NCESS (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s _____ represented by Shri _____, Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/ Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS THE BIDDER is a private company/public company/Government undertaking/ partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is an organisation under the Ministry of Earth Sciences, Government of India.

NOW, THEREFORE,

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

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

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

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

Commitments of the BUYER

1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person,

organisation or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERs alike, and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular bidder in comparison to other BIDDERs.

1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER, the proceedings under the contact would not be stalled.

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

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

3.3 BIDDERs shall disclose the name and address of agents and representatives and Indian BIDDERs shall disclose their foreign principals or associates.

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

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

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

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

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

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

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in

the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filling of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

4.1 The BIDDER declares that no previous transgression occurred in the last three year immediately before signing of this integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

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

5. Bid Securing Declaration/ Security Deposit

5.1 While submitting commercial bid, the bidders must sign a Bid Securing Declaration as specified in the tender.

5.2 The bid securing declaration shall be valid up to a period specified in the tender and this period will cover the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period.

5.3 In case of the successful BIDDER, a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following action, wherever required:-

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i. To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

ii. The Security Deposit/ Performance Bond shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.

iii. To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

iv. To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilised to recover the aforesaid sum and interest.

v. To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payment, already made by the BUYER, along with interest.

vi. To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/ rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

vii. To debar the BIDDER from participating in future bidding processes o the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.

viii. To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

ix. In cases where irrevocable Letter of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

x. Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of the Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an

offence as defined in Chapter IX of the India Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been omitted by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

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

8. Independent Monitors

8.1 The BUYER has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact. The Independent External Monitors for this tender are Ms. Arti Bhatnagar, IDAS (Retd) (email: msarti@rediffmail.com) and Shri Upamanyu Basu, IRS (IT) (Retd) (email: upamanyubasu@gmail.com)

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violations of this Pact, he will so inform the Authority designated by the BUYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid

interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentially.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department within 8 to 10 weeks from the date of reference or intimation to him by the BUYER/BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

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

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this integrity Pact shall be from date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case

BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this integrity Pact at _____on_____

BUYER	BIDDER
Name of the Officer	Chief Executive Officer
Designation	
National Centre for Earth Science Studies	
Witness	Witness
1. _____	1. _____
2._____	2. _____

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