राष्ट्रीय ध्रुवीय एवं समुद्री अनुसंधान केंद्र, पृथ्वी विज्ञान मंत्रालय, भारत सरकार
National Centre for Polar and Ocean Research,
Ministry of Earth Sciences
हेडलैंड सडा वास्को -द- गामा, गोवा
Headland Sada, Vasco-Da-Gama, Goa-403804

Deployment of Deep-Sea Moorings in the Indian Ocean Mid-Ocean ridges (CIR & SWIR)

Request for

Expression of Interest (EOI)

For the End-to-End Turnkey Solutions for the Design of mooring, Supply, Integration, Installation, deployment and retrieval of deep-sea moorings in the Indian Ocean mid-ocean Ridges, Central Indian Ridge (CIR) and Southwest Indian Ridge (SWIR)

GENERAL TERMS

1. **OBJECTIVE OF THE EXPRESSION OF INTEREST**:

To deploy surface and subsurface moorings consists of physical, chemical and biological measurements in the Mid-Oceanic region (Central and Southwest Indian Ridges) of the Indian Ocean at a depth of ~4000 m.

2. CALENDAR OF EVENTS

The following table enlists important timelines for the EOI process:

Sr. No.	**Milestones**	**Date and Time**
1.	Advertisement of Expression of Interest (EOI)	30-07-2024
2.	Last Date of submitting the EOI response	27-08-2024
3.	Opening of EOI responses	28-08-2024
4.	Issuance of RFP/Final Tender	Within 30 days from the date of announcement of eligible Private firms.

3. AVAILABILITY OF THE EOI DOCUMENTS

The EOI document will be available at https://ncpor.res.in. The participants are required to carefully examine the instructions and comply with all the requirements and other details given in the EOI. Failure to furnish complete information as mentioned in the EOI will be at the bidder's risk and can result in the rejection of the proposal.

4. DEADLINE FOR SUBMISSION OF PROPOSAL

As specified in the calendar of events in para 2.

Dear Sir,

On behalf of the Director, NCPOR Part 1 Bid as Expression of Interest (EOI) for Pre-qualification of Bidders is invited in "Two Stage Bid System" from tenderers with appropriate registration having adequate resources and setup and dealing with similar works to provide **"End to End Turnkey Solutions for Design, integration, installation, deployment and retrieval of deep-sea moorings in the Indian Ocean mid-ocean ridges, Central Indian Ridge (CIR) and Southwest Indian Ridge (SWIR)" for the "Deep Ocean Mission" program of NCPOR**.

1.	Expression of Interest /Part 1 Bid for	"End to End Turnkey Solutions for Design, integration, installation, deployment and retrieval of Deep-sea moorings in the Indian Ocean mid-ocean ridges, Central Indian Ridge (CIR) Southwest Indian Ridge (SWIR)" for the "Deep Ocean Mission" program of NCPOR.
2.	Submission of EOI/Part 1 Bid	Part 1 Bid/ Expression of Interest (EOI) has to be submitted to NCPOR.
3.	The last date for seeking clarifications	On or before 09 00 Hrs of August 09, 2024
4.	Pre-Bid Conference	At 11 00 hrs of August 19, 2024, at NCPOR, Goa
5.	Technical EOI /Part 1 Bid opening date	After 1500 Hrs. of August 28, 2024
6.	Validity of EOI /Part 1 Bid	90 days from the date of opening of EOI/Part 1 Bid

Interested parties meeting the eligibility criteria laid down in the notice should submit their EOI in the prescribed format as a Part 1 bid without a financial Bid at NCPOR at the following address by the above deadline:

Director, NCPOR
National Centre for Polar and Ocean Research,
Headland Sada,
Goa – 403804.

Superscribing Envelope with '**Expression of Interest (EOI) for Deep Sea Moorings in the Indian Ocean'**

NCPOR may, at its discretion, extend the deadline for submission of Part 1 Bid/ EOIs by issuing a corrigendum, in which case all rights and obligations of the owner and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended. NCPOR also reserves the right to cancel this request for Part 1 Bid/EOI and/or invite a fresh one with or without amendments, without liability or any obligation for such request of Part 1 Bid/EOI Bid and without assigning any reason. Information provided at this stage is indicative, and NCPOR reserves the right to amend/add further details in the Part 1 Bid/EOI.

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1. Introduction:

The National Centre for Polar and Ocean Research (NCPOR) in Goa, an autonomous institution under the Ministry of Earth Sciences (MoES), Government of India, serves as the country's premier research and development (R&D) organization for Polar and Ocean studies. NCPOR deals with the scientific research activities undertaken by several national institutions and organizations in Antarctica, the Arctic, and the Indian Ocean sector of the Southern Ocean. Apart from these initiatives, MoES has recently launched a mission-mode, multi-disciplinary program focused on the exploration of hydrothermal sulphides at mid-ocean ridges, particularly emphasizing the Central and Southwest Indian Ridges. The NCPOR has been designated as the nodal agency responsible for the comprehensive implementation of this program.

2. Background and Scope of Part 1/EOI Bid:

The government of India has signed a 15-year contract with the International Seabed Authority (ISA) for the exploration of Polymetallic Sulphides (PMS) in the Central and Southwest Indian Ridges (CIR & SWIR; Figure 1). As per the ISA regulations specified for the exploration contracts, the contractor should ensure effective protection and preservation of the marine environment in the contract area. Accordingly, the Indian contract comprises a comprehensive program for oceanographic and environmental baseline studies, including establishing environmental baselines, an environmental monitoring program, a preliminary assessment of the possible impact of proposed exploration activities, and establishing an environmental database. The contract also intended to cover a study relating to the assessment of the potential environmental impact on account of the proposed exploration activities during the contract period.

As per the ISA regulations, every contractor should have a work plan for the exploration of marine minerals considering the following phases of environmental studies: a) Environmental baseline studies, b) Monitoring to ensure that no serious harm is caused to the marine environment from activities during prospecting and exploration, c) Monitoring during and after testing of mining components.

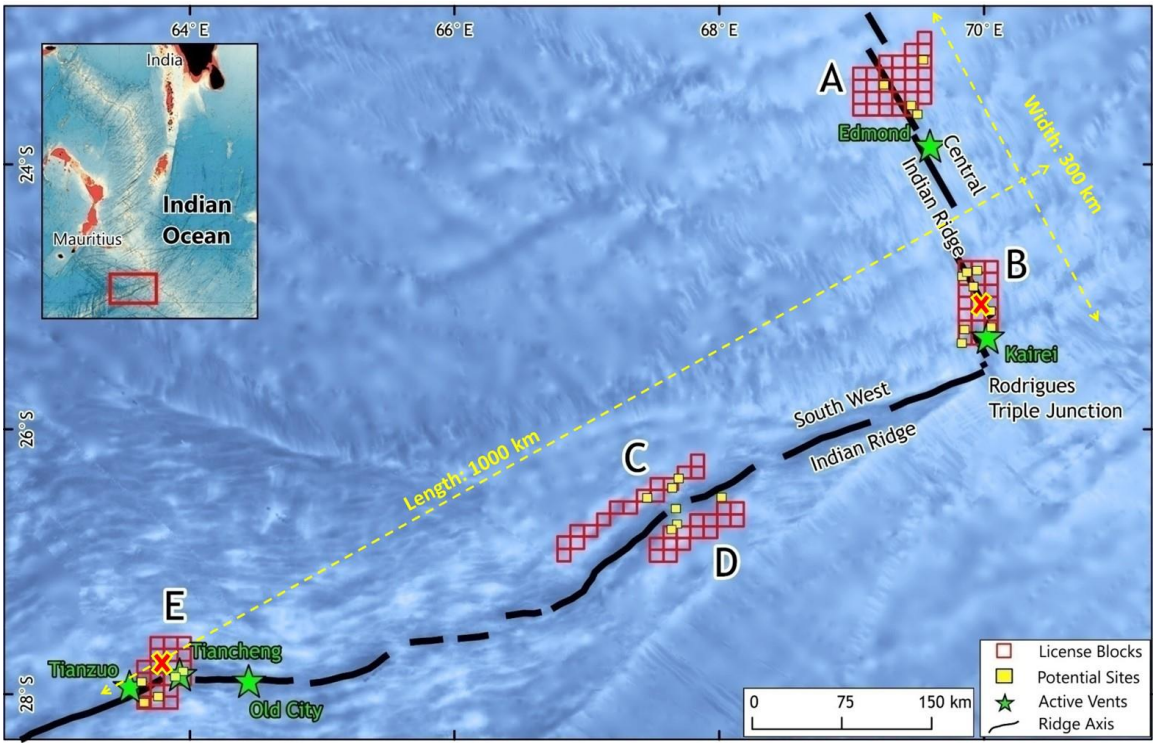

Figure 1: The map demonstrates the Indian PMS contract area (Clusters A-E) approved by ISA. Proposed locations of moorings are shown as red crosses.

In view of the above, it is essential to study the oceanographic conditions prevailing in the contract area to understand the hydrodynamics, current flow, and velocity near the seabed, in the water column, and at the sea surface. Deep-sea mooring studies have been proposed in the PMS contract for the environmental baseline studies on spatial and temporal scales. Accordingly, long-term moorings may be deployed along with sediment traps to understand the nature of export fluxes and their controlling factors on spatial and temporal scales. This mooring data will enable to establish the following parameters such as (a) ocean currents, temperature, salinity, and other environmental variables like dissolved oxygen, chlorophyll, and turbidity, (b) sediment trap-based particulate matter fluxes (Lithogenic, biogenic, and particulate organic matter) in the region.

As part of the International Sea Bed Authority's requirement, the water column properties in the contract region must be studied. Since one mooring to cover the entire water column is risky, two moorings covering upper 1500m (surface mooring) and 500m above the sea bottom (Deep mooring) were suggested. The surface mooring covers, air-sea interaction, mixed layer variability, Subsurface Chlorophyll Maxima (SCM) variability, Oxygen minimum zone (OMZ) variability, thermocline variability and currents in the

upper 1500m. Temperature/Pressure sensors will be placed at 50-meter intervals from 100 m to 500m to identify the layer with the steepest temperature gradient (thermocline), which is critical for studying ocean dynamics. In line with the program's requirements, continuous current profile data will be available from the surface to 1500 meters (from surface mooring) and from the seabed to 500 meters above (deep mooring). Additionally, a hydrophone will be installed within 1500 meters, with a caution to avoid placing metallic instruments nearby to prevent disturbances. Two sediment traps will be positioned in the deep mooring at the bottom to measure export flux to the seafloor.

Considering all the aforementioned scientific aspects, various sensors, their specifications, and the depths of deployment, the proposed design of the surface and deep moorings are shown below. Both the moorings will be separated by a distance of 5 km and deployed in each location.

1. A surface mooring extending from the surface to a depth of 1000 meters, as shown in **Figure 2**
2. A deep mooring extending to 500 meters above the seabed, as shown in **Figure 3**

Considering the accessibility of the study region to India and the limited calm weather window for operations, the deployment period of moorings will be for **one year** at **two location**s, CIR: Cluster **B** (**Figure 4**) and SWIR: Cluster **E** (**Figure 5**), respectively.

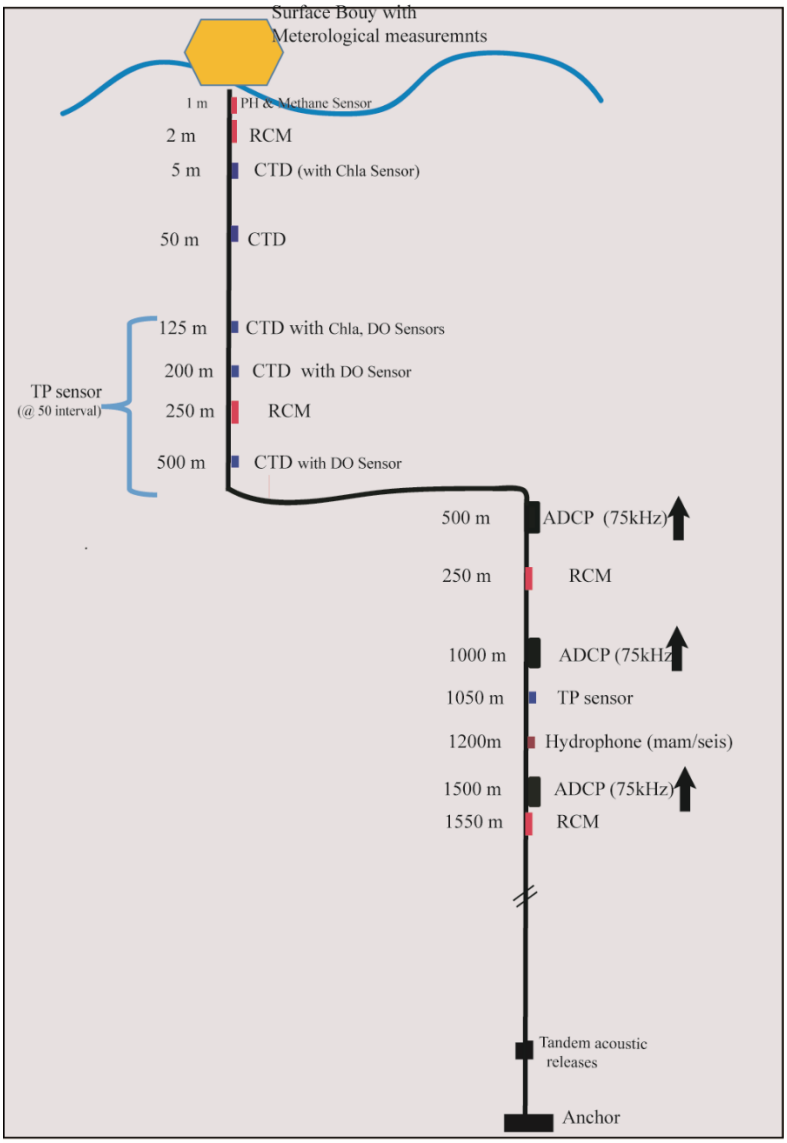

Figure 2. Schematic diagram depicting proposed surface mooring.

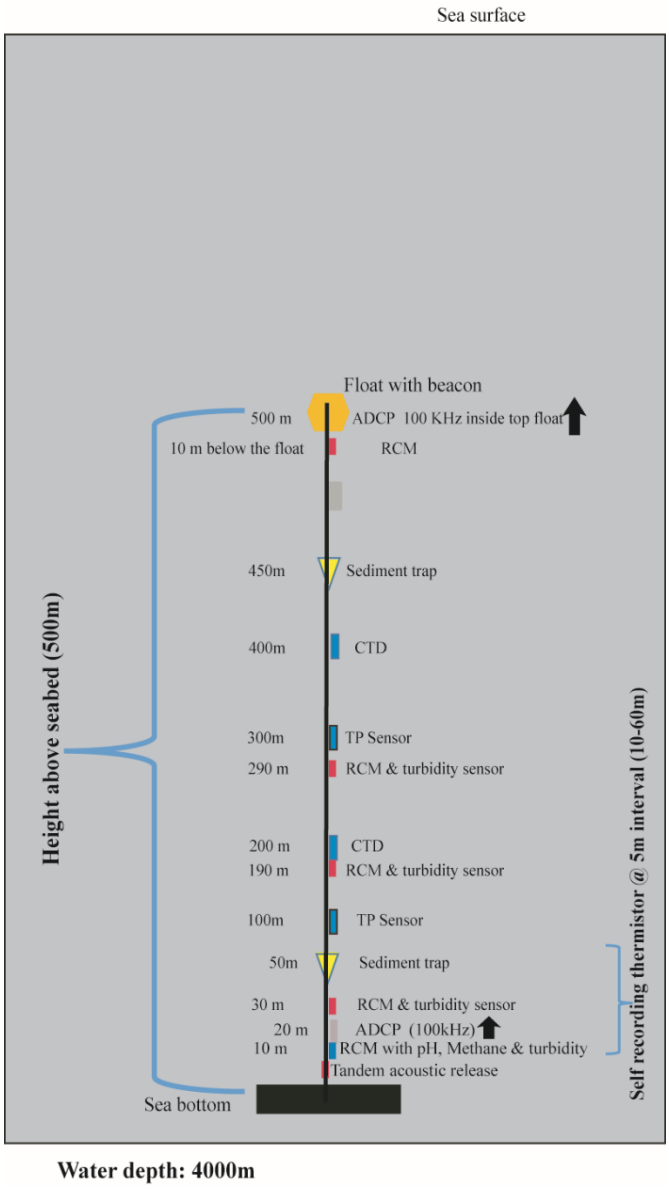

Figure 3. Schematic diagram depicting proposed deep mooring.

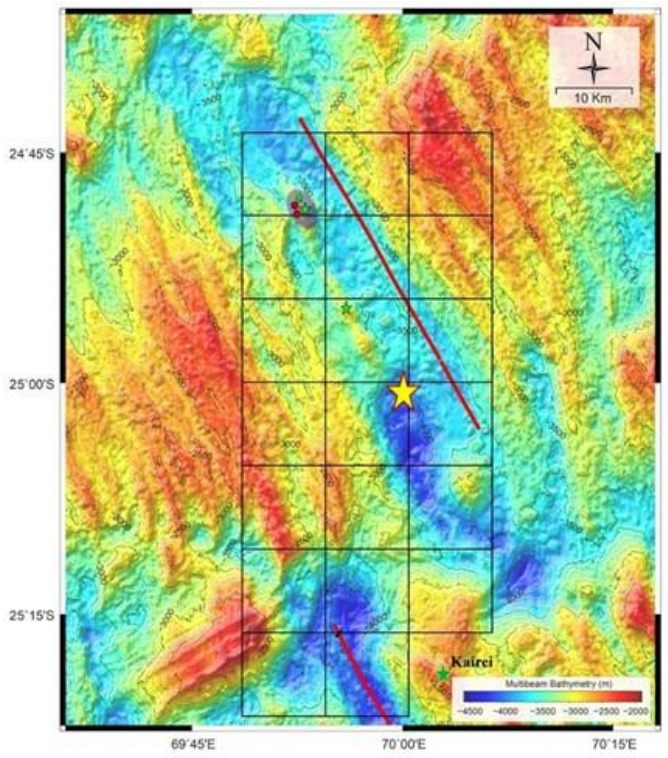

Figure 4: Proposed mooring location (yellow star) in the CIR: Cluster B

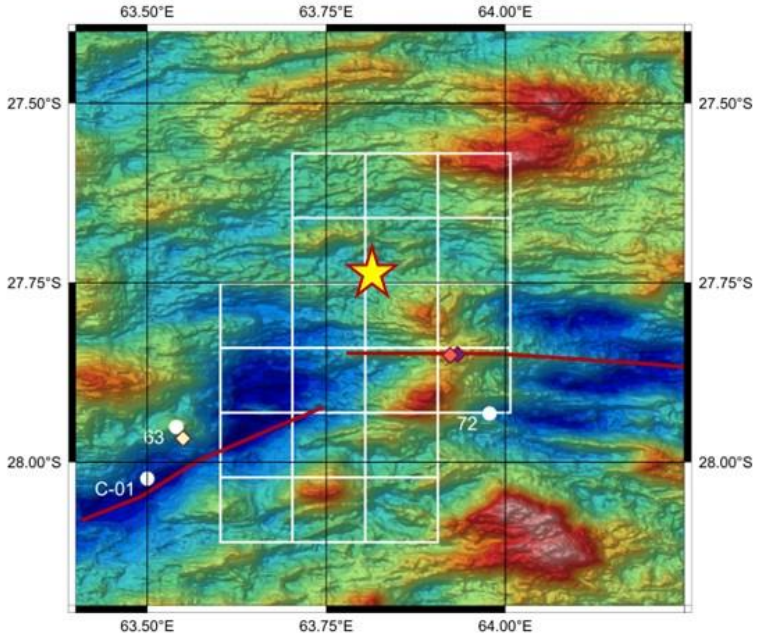

Figure 5: Proposed mooring location (yellow star) in the SWIR: Cluster E

The surface buoy with meteorological sensors, ideally of a maximum 3m diameter and made up of marine grade material with antifouling coating, should have sufficient space for housing all sensors, data logger, batteries, and other accessories. Primary sensors are mandatory on the buoy. The buoy design should accommodate the maximum number of optional sensors. A surface buoy should be added with a buoy position transmitter (preferably ARGOS transmitter). The buoy system should be capable of storing the data set internally as well as transmitting in real-time at pre-defined time intervals. Data should be transmitted in encrypted compressed format. The vendor needs to provide software for real-time data acquisition, storage, and visualization. All the recorded data (hourly) should be transmitted to NCPOR and /or shore station in real-time through satellite communication and should also saved in the flash memory onboard for redundancy. Higher resolution data, which are logged internally, will be downloaded once the mooring is recovered. The vendor should also provide data reception software to receive and decode data. Solar panels will be preferable for charging the buoy battery, supported by a solar charge controller with features such as deep discharge cutoff, overcharge protection, voltage regulation, reverse flow protection etc., The Buoy should also have a RADAR Reflector buoy and an anti-rotation fin, in order to resist the buoy from rotating due to surface currents.

This Pre-Bid conference is aimed at discussing the project aspirations with the vendors and inviting vendors to discuss the turnkey end-to-end solution for supply, integration, installation, deployment, and retrieval of surface and deep moorings and also moored-buoy-based autonomous meteorological sensors with 24 x 7 data acquisition and real-time transmission through DOT approved suitable satellite (Inmarsat, INSAT IRIDIUM etc) telemetry.

Facilities provided by NCPOR

1. NCPOR will provide a suitable platform for the deployment and retrieval of the mooring.
2. NCPOR will provide some background information, such as bathymetry and soil properties of the mooring site.
3. Although the deployment is set for one year (12 months), delays due to ship availability may be anticipated. Therefore, the position transmitter and acoustic release should be capable of functioning for an extended period of six months.

4. After retrieval, the vendor is responsible for collecting the data, performing quality checks, and providing the complete data along with all the mooring equipment and accessories back to NCPOR.
5. Damage/loss of the instruments due to vandalism shall be the responsibility of NCPOR. However, the loss of an instrument due to any other technical issue shall be the responsibility of the bidder.

3. Technical Specifications:

Each mooring line should host suits of sensors as per the specifications listed in the Table below:

List of equipment and sensors

S. No.	Type of Instrument/sensor	Number of sensors	Mooring type				Total no of sensors	Remarks
			Surface	No. of moorings	Deep	No. of moorings		
1.	Surface buoy with meteorological sensors: **Real-time** measurements for **1. Wind speed** Sensor type: Ultrasonic sensor with in-built compass and GPS for true wind calculation Resolution: 0.01 m/s Accuracy: 0-10 m/s 0.3 m/s RMSE 10-40 m/s 3% RMSE 40-60 m/s 5% RMSE Range: 0-60 m/s Sampling period: 10 min. Data recorded: 1 hr **2. Wind direction** Sensor type: Ultrasonic sensor with in-built compass and GPS for true wind direction calculation Resolution: 1 °	01	√	02	X	X	**02**	

	Accuracy: 0.5 m/s-40 m/s ±3° 40-60 m/s ±5° Range: 0-360 m/s Sampling period: 10 min. Data recorded: 1 hr **3. Air temperature** Sensor type: PT/100 RTD Resolution: 0.1 °C Accuracy: ±0.3% Range: -40°C to +70°C with heating Sampling period: 1 min. Data recorded: 1 hr **4. Relative humidity** Resolution: 1% RH Accuracy: ±2% RH across full range Range: 0-100% RH Sampling period: 1 min. Data recorded: 1 hr **5. Air pressure** Sensor type: Pressure transducer Resolution: 0.01hPa **Accuracy**: Absolute ±0.4 hPa Relative (typically) ±0.08 hPa Range: 300-1250 hPa Resolution 0.1 hPa Sampling period: 1 min. Data recorded: 1 hr **6. Rainfall**							

	Sensor type: Optical Resolution: 0.08 mm Accuracy: ±1 mm Range: 0-300 mm/hr Sampling period: 1 min. Data recorded: 1 hr 7. **Downwelling short-wave radiation** Sensor type: Thermopile radiation sensor Data resolution and accuracy as per spectrally flat, class A type pyranometer as per ISO 9060:1990 classification standards. Zero offset -A: <2w/m^2 spectral range: 285-3000 nm Range: 0-4000 W/m2 Sampling period: 1 min. Data recorded: 1 hr **8. Downwelling longwave radiation** Sensor type: Thermopile radiation sensor Response time: 3s Non-linearity: <1% FOV: 180 Window heating offset: <2w/m2 Spectral range: 4.5-40 x10^{-6} m Sampling period: 1 min. Data recorded: 1 hr							

	9. **Wave and Tide** Sensor type: Radar **Heave** Range: 2-75 Accuracy: ± 3 mm Frequency: 10 Hz **Water level** Accuracy: ± 1 cm Interval: 1 min **Wave height** Range: 0 – 60 m Accuracy: ± 1 cm Interval: 1 min **Wave period** Range: 1 – 100 s Accuracy: ± 50 ms Interval: 1 min							
2.	**Skin SST** **Accuracy : ± 0.2 C** **Range : -55C to 80C** **Operating Relative Humidity Range: 0 to 100% RH**	01	**√**	02	X	X	**02**	
3.	**Eddy covariance sensors** **Eddy covariance sensors** **1. An open-path, non-dispersive infrared gas analyzer.** Sensor type: Thermo-electrically cooled lead selenide. Bandwidth: 5, 10, or 20 Hz, user selectable as per requirement Operating Temperature Range:-25 to 50° C.	01	**√**	02	X	X	**02**	

	CO2 measurements: **Calibration Range:** 0 to 3000 µmol mol^{-1} **Accuracy:** Within 1% of reading **Zero Drift (per °C):** ±0.1 ppm typical ±0.3 ppm maximum **RMS Noise (typical @ 370 ppm CO_2):** @5 Hz: 0.08 ppm @10 Hz: 0.11 ppm @20 Hz: 0.16 ppm **Gain Drift (% of reading per °C @ 370 ppm):** ±0.02% typical ±0.1% maximum **Direct Sensitivity to H_2O (mol CO_2 mol^{-1} H_2O):** ±2.00E-05 typical ±4.00E-05 maximum **H_2O Measurements** **Calibration Range:** 0 to 60 mmol mol^{-1} **Accuracy:** Within 1% of reading **Zero Drift (per °C):** ±0.03 mmol mol^{-1} typical ±0.05 mmol mol^{-1} maximum **RMS Noise (typical @ 10 mmol mol^{-1} H_2O):** @5 Hz: 0.0034 mmol mol^{-1} @10 Hz: 0.0047 mmol mol^{-1} @20 Hz: 0.0067 mmol mol^{-1} **Gain Drift (% of reading per °C @ 20 mmol mol^{-1}):** ±0.15% typical **Direct Sensitivity to CO_2 (mol H_2O mol^{-1} CO_2):**							

	±0.02 typical ±0.05 maximum ±0.30% maximum **Direct Sensitivity to CO_2 (mol H_2O mol^{-1} CO_2):** ±0.02 typical ±0.05 maximum **2. 3D sonic anemometer** Output rate: 50 Hz Wind speed: Range: 0-45 m/s Resolution: 0.01 m/s Accuracy: <1% RMS Direction: Range: 0-360° Resolution: 1° Accuracy: <1° RMS Speed of sound Range: 300-370 m/s Resolution: 0.01 m/s Accuracy: <0.5%@20°C **3. Inertial Measurement Unit (IMU)** the IMU should include a direct measurement of acceleration and angular rates. The outputs should include pitch, roll, yaw, a complete attitude and heading							

	reference solution (AHRS), and integrated GNSS outputs.							
4.	**Methane sensor (500m range)** Range: 1-500nM	01	**√**	02	X	X	**02**	**All sensors should have a 2000 m depth rating**
5.	**Current meter** **Speed** Range: 0-300 cm/s Resolution: 0.1 mm/s Mean Accuracy: ≥ ± 0.15 cm/s **Direction** Accuracy: ≥±2° Resolution: 0.01°	04	**√**	02			**08**	
6.	**pH Sensor** Range: 6.5 - 9.0 pH Stability : 0.003 pH/month Initial Accuracy: ± 0.05 pH Resolution: 0.004 pH	01	**√**	02	X	X	**02**	
7.	**Current profiler** **Type: Doppler** **Frequency:75KHz** **Depth Rating: 1500m** **Speed** **Max Profiling Range:** 600m **Accuracy**±1.0% of measured velocity ± 0.5 cm/s Range: ±5 m/s (default) to ±10 m/s Resolution: 0.1 mm/s Mean Accuracy: ≥ ± 0.15 cm/s **Direction** Accuracy: ≥±3° Resolution: 0.01°	03	**√**	02	X	X	**06**	

8.	Temperature/Pressure sensor (1000 m) **Temperature** range: -5 to +35°C Accuracy: ±0.002°C Resolution: 0.0001°C Pressure sensor Accuracy: ±0.1% of FS Resolution: 0.002% FS	10	**√**	02	X	X	**20**	
9.	**CTD** TS Sensor type: T-C Duct and pump-controlled constant flow Depth range: 1000m Temperature Range: -5 to +45°C Accuracy: 0.005°C Resolution: 0.0001°C Conductivity Range: 0 to 7 S/m (0 to 70 mS/cm) Accuracy: ± 0.0003 S/m (0.003 mS/cm) Resolution: 0.00005 S/m Pressure Sensor: ±0.1% of FS Resolution: 0.002% of full scale range	01	**√**	02	X	X	**02**	
10.	**CTD with Chlorophyll sensor** TS Sensor type: T-C Duct and pump-controlled constant flow **Temperature** Temperature	01	**√**	02	X	X	**02**	

	Range: -5 to +35°C Accuracy: 0.005°C Resolution: 0.0001°C **Conductivity** Range: 0 to 7 S/m (0 to 70 mS/cm) Accuracy: ± 0.0003 S/m (0.003 mS/cm) Resolution: 0.00005 S/m **Pressure** Type: Strain-Gauge Sensor: ±0.1% of FS Resolution: 0.002% of full scale range **Chlorophyll EX/EM-470/695** Range: **0-5 ug/L** Accuracy: ±3% Resolution:0.007-0.037 based on the range Sensitivity: 0.123 µg/L							
11.	**CTD with Chlorophyll and Dissolved oxygen sensor** **Sensor type:** T-C Duct and pump-controlled constant flow **Temperature** Range: -5 to +35°C Accuracy: 0.005°C Resolution: 0.0001°C **Conductivity** Range: 0 to 7 S/m (0 to 70 mS/cm) Accuracy: ± 0.0003 S/m (0.003 mS/cm) Resolution: 0.00005 S/m **Pressure** Type: Strain-Gauge Sensor: ±0.1% of FS	01	**√**	02	X	X	**02**	

	Resolution: 0.002% of full scale range **Chlorophyll EX/EM-470/695** Range: **0-5 ug/L** Accuracy: ±3% Resolution:0.007-0.037 based on the range Sensitivity: 0.123 µg/L **Dissolved Oxygen** Range: 120% of surface saturation in all natural waters (fresh and salt) Accuracy: ±2% Resolution: 0.2 µmol/kg Stability: sample-based drift < 1 µmol/kg/100,000 samples (20 °C)							
12.	**CTD with Dissolved Oxygen sensor** TS Sensor type: T-C Duct and pump-controlled constant flow **Temperature** Range: -5 to +35^{o}C Accuracy: 0.005°C Resolution: 0.0001^{o}C **Conductivity** Range: 0 to 7 S/m (0 to 70 mS/cm) Accuracy: ± 0.0003 S/m (0.003 mS/cm) Resolution: 0.00005 S/m **Pressure** Type: Strain-Gauge Sensor: ±0.1% of FS Resolution: 0.002% of full scale range	02	**√**	02	X	X	**04**	

	Dissolved Oxygen Range: 120% of surface saturation in all natural waters (fresh and salt) Accuracy: ±2% Resolution: 0.2 µmol/kg Stability: sample-based drift < 1 µmol/kg/100,000 samples (20 °C)							
13.	Hydrophone for Mammals (1000m) **Range :** 0.1 Hz to 180 kHz **Sensitivity:** -194 dB re: 1V/HPa	01	**√**	02	X	X	**02**	
14.	Hydrophone for Seismic activity (4000m) Range: 0.01Hz-8 kHz	01	**√**	02	X	X	**02**	
15.	Acoustic release, mooring anchors (required weight), cables and beacons with flashlights	02	**√**	02	X	X	**04**	
					√	**Mooring line length – from the seabed to 500m above**		
16.	**pH sensor** Range: 6.5 - 9.0 pH Stability: 0.003 pH/month Initial Accuracy: ± 0.05 pH Resolution: 0.004 pH	01	X	X	**√**	02	**02**	**All sensors should have a 5000 m depth rating**
17.	**Methane sensor (4000 m)** Depth Rating: 6000 m Range: 1 nM-500 nM (in pumped flow-through mode) Titanium hosing Operating temperature 2-20° C	01	X	X	**√**	02	**02**	
18.	**Current meter** **Speed**	01			**√**	02	**02**	

	Range: 0-300 cm/s Resolution: 0.1 mm/s Mean Accuracy: ≥ ± 0.15 cm/s **Direction** Accuracy: ≥±3° Resolution: 0.01°							
19.	**Current meter with Turbidity sensor** **Speed** Range: 0-300 cm/s Resolution: 0.1 mm/s Mean Accuracy: ≥ ± 0.15 cm/s **Direction** Accuracy: ≥±3° Resolution: 0.01° **Turbidity** Range: 0–1000 NTU Accuracy: ± 1 %	04	X	X	**√**	02	**08**	
20.	**CTD** TS Sensor type: T-C Duct and pump-controlled constant flow **Temperature** Range: -5 to +35°C Accuracy: 0.002°C Resolution: 0.0002°C **Conductivity** Range: 0 to 9 S/m Accuracy: ± 0.0005 S/ Resolution: 0.00005 S/m **Pressure** Type: Strain-Gauge Sensor Accuracy: ±0.1% of full scale range	02	X	X	**√**	02	**04**	

	Resolution: 0.002% of full scale range							
21.	**Sediment traps** Dimensions: Diameter: > 90 cm Height: > 160 cm Collecting area: 0.5 sq meter or more Cone angle: > 35° Number of sampling bottles: 21 or more Sample bottle volume: 500 mL Sample bottle material: HDPE or better Depth rating: minimum 6000 m Operating temperature: -2°-35° C Deployment time: maximum 18 months Baffle material: Polycarbonate/Phenolic Composite Baffle cell diameter: > 0.9 cm Communication: USB/RS-232/TCM electronic card Power supply: Alkaline battery Pressure hosing: Titanium	02	X	X	√	02	**04**	
22.	**Temperature/Pressure sensor (3500 m)** **Temperature** Range: -5 to +45ºC Accuracy: ±0.002ºC Resolution: 0.0001ºC Pressure sensor: Accuracy: ±0.1% of FS Resolution: 0.002% of full scale range	02	X	X	√	02	**04**	
23.	**ADCP 100 KHz** current profiler Range: 300-400m range Depth rating: 6000m Accuracy: ± 1% Resolution: 0.1 cm/s Beams: 4	02	X	X	√	02	**04**	

	Sensors: Temperature, tilt, Compass							
24.	**Temperature** sensor (self-recording) Range: -5 to +45^{o}C Accuracy: ±0.002^{o}C Resolution: 0.0001^{o}C	10	X	X	**√**	02	**20**	
25.	Acoustic release (2 per mooring), anchor weights, cables, and beacons with flashlights	02	X	X	**√**	04	**08**	
	Necessary consumables (chains, ropes, instruments, accessories etc.) for the deployment of two surface moorings and two deep moorings (Acoustic release should be 10m above the seabed). The distance between the anchor weight and the acoustic release should be 10 meters.							

4. Eligibility Criteria/ Pre-Qualification Criteria

Only those bidders fulfilling the following criteria should respond to the Part 1 Bid/EOI. Bidders not meeting the minimum pre-qualification criteria will be rejected and will not be evaluated.

a. The bidder must be a company/firm/consortium registered under the Indian Companies Act 2013 or a registered firm. (Proofs for registration of company/firm, as well as PAN and GST certificates, are to be submitted. In the case of a consortium, a valid Memorandum of Association (MoA) agreement among the members signed by the authorized signatories of the companies dated prior to the submission of the bid/EOI must be submitted). The definition of Consortium is given below.

b. Bidders should have well-established service/support centres in India. The details of the location of the service/support centre are to be submitted. (Bidders should provide a detailed profile of their company, including its infrastructure, technical man power, and expertise etc.)

c. The bidder should have an average annual financial turnover of Rs. 9 Cr or more during the last three years ending March 31, 2024. The bidding companies should be earning profit at least during two (02) years in the last three (03) years.

d. The bidder (OEM/SI) should have experience in a similar nature of work in the last seven years, ending the previous day of the last date of submission of the bid/EOI. Out of which two works of value Rs 15 Cr or three works of value of Rs 12 Cr. Work Completion Certificate/ Experience certificate/ongoing along with the Purchase Orders/Work orders as a reference to be enclosed in this regard.

e. Bidder should submit a technical compliance statement for all specifications along with the detailed data sheets/catalogs. Relevant remarks can be provided in the compliance statement if required.

f. Bidder should Sign on all the pages of the proposal for Part 1 Bid/EOI, including addendum/ corrigendum,if any, issued by NCPOR.

g. The firm should not be blacklisted by any Central Govt. / State Govt. / PSU / or any other Govt. or any foreign Govt. organization bodies. A certificate signed by the authorized signatory of the firm must be submitted in this regard.

Definition of Consortium:

a. A bidding firm may be a corporation/company or consortium of companies/corporations. The consortium shall mean more than one company with complementing skills joining together to undertake the scope of the work defined. The leader of the consortium should meet the experience criteria stated in the tender.
b. In case the bidder is a Joint venture company, the Joint venture Company or its technical collaborator/Joint venture partner(s) should meet the criteria for performing the work. The

bidder should submit a Memorandum of Understanding (MoU)/ Agreement with their technical collaborator/joint venture partner (in case of Joint venture) clearly indicating their roles under the scope of work

c. If the bidder had formed an association, each member of the association may be evaluated separately/jointly as per the qualification/eligibility (minimum experience in previous work).

d. The MoA shall specify the prime bidder and stake of each member and outline the roles and responsibilities of each member. The MoA shall be exclusively for this project and should confirm that each member of the consortia is liable jointly and severally for the execution of the contract.

e. The bidder and consortium companies must be registered under the Indian Companies Act 2013.

f. In the event of the consortium, one of the partners shall be designated as "Prime Bidder". Each member of the consortium shall be equally responsible jointly and separately for the execution of the contract.

g. The leader of the consortium should confirm unconditional acceptance of full responsibility towards the scope of work in this tender. This confirmation should be submitted along with the technical offer.

h. All the members of the consortium must undertake in their MoU that each party shall be jointly and severally liable to NCPOR for any and all obligations and responsibilities arising out of this contract.

5. Contents of Part 1 Bid/EOI:-

(i) Proposal: EOI/Part 1 Bid should contain all the information listed below, without which the offer will not be considered further.

Table 1: Technical Compliance Statement

Sl. No.	Description	Details	Supporting Documents Page No.	Remarks if any
1.	Name of the Bidder			
2.	The bidder is a 1) Registered Indian under Indian Company Act 1956 /2) Partnership 2)Trust /3) Society/ 4) Foreign firm /5) OEM/(s) / 6) Consortium 7) System Integrator			
3.	Mailing Address			
4.	Name and Designation of the Contact Executive			
5.	PAN Number			
6.	Registration Number of the Company			
7.	GST Registration No.			
8.	Copy of Valid certificate of registration of the applicant			
9.	Copies of PAN card, GST registration certificates			
11.	The bidding companies should be earning profit at least during two (02) years in the last three (03) years.			
12.	The firm (both Indian and Foreign) should not be blacklisted by any Central Govt. / State Govt. / PSU / or any other Govt. Bodies. A certificate signed by the authorized signatory of the firm must be submitted in this			

	regard.			
13.	Tenderer should have well established service / support centre in India. The details of location of service / support centre are to be submitted (Bidder should provide profile of their company including its infrastructure, technical manpower and their expertise).			
14.	Bidder should Sign on all the pages of the EOI, including addendum/ corrigendum, if any, issued by NCPOR.			

PREVIOUS EXPERIENCE

Sl No.	Particulars	Details
1.	Name of the Project	
2.	Location and State	Location: State
3.	Capital Cost of the project	INR.....(Rupees in words .....)
4.	Details of the Project	
5.	Experience of the Bidder in similar projects	..... Years (Please enclose work orders, agreements, Contracts with relevant authorities)

6. Technical Evaluation Criteria:-

- The purpose of the two-stage bid system is to invite suitable proposals through Part 1 Bid/EoI from the prospective bidders capable of providing the subject turnkey solution.

- Part 1 Bid/EOI Proposals will be opened on due date.

- Bidder must ensure that their bid response is submitted as per the formats prescribed with this document. Special comments on the objectives and scope of the service project in the inquiry may also be submitted along with the offer.

- The Part 1 Bid/EOI submitted will be examined vis-a-vis the tendered specifications, and evaluation will be made accordingly.

- Shortlisting for pre-qualification of the agencies shall be subject to thorough verification of their credentials and the technical suitability of the submitted proposals.

- Prospective agencies shall satisfy themselves by fulfilling all the EOI criteria before submission of Part 1 Bid/EOI. The department reserves the right of non-consideration of Part 1 Bid/EOI of the agencies not fulfilling the stipulated criteria.

- The Part 1 Bid/EOI will be evaluated for short listing inter alia based on their past experiences of handling similar types of projects, the strength of their manpower, the financial strength of the company/firm, and presentation (plans and ideas are invited)/merit of the proposal to the selection committee.

- Bidders who qualify as per the eligibility conditions will be provided with a brief description of the "Deep Sea moorings in the Indian Ocean mid-ocean Ridges of CIR and SWIR". The bidders may be required to make a presentation to a selection committee showcasing their proposals

- The stage 2 bidding process is an open tender. Bidders disqualified in the first stage will not be permitted to participate in the second stage of bidding.

- Even though a bidder may satisfy the above requirements, he would be liable for disqualification/debarment if the bidder has:

    - Made misleading or false representations or deliberately suppressed the information in the forms, statements, and enclosures required in the pre-qualification document.

    - Records of poor performance such as abandoning work, not properly

completing the contract, or financial failures/weaknesses etc.

7. Financial /Price bid – PART-2 For Pre-qualified Bidders:

- Disqualified bidders in stage 1 bidding are not allowed to participate in stage 2 bidding.
- Notwithstanding anything stated above, NCPOR reserves the right to assess Bidder's capability and capacity to perform the contract. Should circumstances warrant such an assessment in the overall interest of the organization, NCPOR reserves the right to reject any or all Part 1 Bid/EOI/tenders at any time before the award of the contract, without assigning reasons thereof, and without thereby incurring any liability to the affected Bidder or Bidders.

Conflict of interest:

a. Where there is any indication that a conflict of interest exists or may arise, it shall be the responsibility of the bidder to inform NCPOR detailing the conflict in writing as an attachment to this bid.

b. NCPOR will be the final arbiter in cases of potential conflicts of interest. Failure to notify NCPOR of any potential conflict of interest will invalidate any verbal or written agreement.

c. A conflict of interest is where a person who is involved in the procurement has or may be perceived to have a potential interest in ensuring that a particular bidder is successful. Actual and potential conflicts of interest must be declared by a person involved in the bid process.

8. Terms and Conditions: -

a) The EOI should be submitted in a sealed envelope with a covering letter of the firm on its letterhead and addressed to: **THE DIRECTOR, NATIONAL CENTER FOR POLAR AND OCEAN RESEARCH, HEADLAND-SADA, VASCO-DA-GAMA, GOA 403804** by the specified date and time, superscribing '**Expression of Interest (EOI) for Deep Sea Moorings in the Central Indian Ridge'**

The name of the bidder and contact details/address should also be written on the envelopes.

a) The prospective Bidders are advised to participate in the scheduled Pre-Bid conference for a better understanding of the subject requirement.

b) The Part 1 Bid/EOI is available free of cost.

c) The proposal will be opened as per the date/time as mentioned in the Part 1 Bid/EOI on Page No. 01. The results of qualifying proposals will be uploaded on the NCPOR website.

d) NCPOR reserves the right to withdraw Part 1 Bid/EOI and or vary any part thereof at any stage and disqualify any responded firms at any stage, if so necessary.

e) All the information collected and activities carried out during the processing/execution of the Part 1 Bid/EoI/tender/PO of the project shall be treated as sole property of NCPOR and shall not be provided to others without prior written permission of NCPOR.

f) Typographical and clerical errors are subject to correction.

g) Upon completion of the Part 1 Bid/Stage 1 Bid evaluation process, bidders are invited to submit the Part 2 BID/ Stage 2. Part 2 BID/ Stage 2 shall contain the standard clauses of NCPOR such as Signing of Service Level Agreement, Integrity Pact if applicable, Security Deposit, Performance Guarantee, Liquidated Damages, Penalty clauses is applicable, Patent Clauses etc.,

h) Part 1 Bid/EOI should not be treated as a commercial tender document and bidders are advised not to offer any price or include any financial aspect with their responses.

i) This Part 1 Bid/EOI does not commit NCPOR to award a contract or to engage in negotiations. Further, no reimbursable cost may be incurred in anticipation of the award or for preparing this EoI/Part 1 Bid.

j) All materials submitted by the bidder will become the property of NCPOR and may be returned completely to the bidder at the sole discretion of the Director, NCPOR.

k) The proposal and all correspondence & documents shall be written in English

l) Issue of Corrigendum

1. At any time prior to the last date for receipt of Part 1 Bid/EOI, NCPOR may modify the Part 1 Bid/EOI document by issuing a corrigendum as required.
2. The Corrigendum (if any) will be posted at https://ncpor.res.in.
3. Any such corrigendum shall be deemed to be incorporated into this EoI/Part 1 Bid.
4. In order to provide reasonable time for taking the corrigendum into account, NCPOR may, at its discretion, extend the last date for the receipt of Part 1 Bid/EOI Proposals.

m) Right to Terminate the Process

1. NCPOR may terminate the Part 1 Bid/EOI process at any time and without assigning

any reason. NCPOR makes no commitments, express, or implied that this process will result in a business transaction with anyone.

2. This Part 1 Bid/EOI does not constitute and will not be deemed to constitute any commitment or confirmation or an offer by NCPOR.

n) In case of any unresolved dispute or differences arising at any time between this Institute and the firm holding the contract, these shall be resolved in terms of the Arbitration and Conciliation Act 1996 and held at Goa only. Further, this contract is subject to the laws of India alone.

9. Technical Clarifications:-

If firms require clarifications on certain points in this Document may be submitted (via e-mail) on or before **09 00 Hrs of August 09, 2024**. Note: Firms may submit a consolidated query only once. e-mail: john@ncpor.res.in , surya@ncpor.res.in & vidya@ncpor.res.in; E-mail subject should be mentioned as *"Queries on EOI/Part 1 Bid for* **"End to End Turnkey Solutions for the Deep Sea moorings of NCPOR "**.

Pre-Bid Conference: NCPOR has made every effort to bring out the requirements to facilitate the firms in making their proposals. However, keeping in view that firms may have clarifications on certain points in this document before submitting their Proposal, a Pre-bid meeting will be held at NCPOR, Goa, on **August 19, 2024, at 1100 hrs**. During the pre-bid meeting, NCPOR will give a brief presentation on the EoI/Part1 Bid requirement. The firms are required to make a detailed Presentation of their technical proposal (Company Profile, Proposed Products, Implementation plan, etc.) if required. It is desired that the firm also demonstrate the features of the products that they would like to quote. All the clarifications will be consolidated and clarified to the vendors during the pre-bid meeting, and the addendum/corrigendum will be added to the tender NCPOR website. The vendor will be given another reasonable sufficient time to submit their technical and financial quote.

10. Contact Address:-

1) Dr. John Kurian P Group Director, Marine Geosciences & Exploration Group, National Centre for Polar and Ocean Research (NCPOR) Ministry of Earth Sciences, Government of India, Headland Sada, Vasco-da-Gama-403804, Goa, India, Phone: +91832-2525570 Email: john@ncpor.res.in	2) The Director, National Centre for Polar and Ocean Research (NCPOR), Ministry of Earth Sciences, Government of India Headland Sada, Vasco-da-Gama-403804, Goa, India, Phone: +91832-2525501 Email: director@ncpor.res.in

We have read and understood the above terms and conditions in detail and the same are accepted by us.

Signature of the Bidder/Authorized Signatory & date

Name OFFICE SEAL, Address

Note: The bidder has to sign & stamp all pages of the EOI *document and submit the same.*