



Additional Tender Terms & Conditions

1. **DESCRIPTION & SCOPE OF WORK:**

(a) **MAIN EQUIPMENT/ITEM/SYSTEM** Procurement of Echo Sounder System for Coast Guard Training Ship of CGP (Y-16101) as per TSP No. 5021, Rev 04 dtd.22.02.2024.

(b) **ON BOARD SPARES (OBS):**

OBS for sufficient quantity for exploitation & on-board maintenance up to 2 years from date of completion of " Standard Warranty" (As mentioned in warranty cl no.31 of TSP) is required to be provided along with the main equipment. Please refer TSP cl no. 18.2 for more details)

(i) OBS will be ordered along with the main equipment.

(ii) It is mandatory to quote OBS for 2 year of exploitation period.

(iii) For ranking the bids OBS cost will be considered.

(c) **DOCUMENTATION:** As per TSP

(d) **SERVICES OF ENGINEERS:**

(i) Technical assistance is to be provided as per the scope mentioned in TSP.

(ii) Price for Services of Engineers to be quoted on Lump sum basis. The quoted price should be inclusive of To & Fro travelling expenses, lodging and boarding and local conveyance for each activity as per TSP.

(iii) Please note that it is the sole responsibility of the vendor to complete the trials till SATs including commissioning within quoted prices of services of Engineers.

(iv) While deputing Service Engineers for attending on board activity against MDL's call, checklist/prerequisites for that activity to be forwarded three working days in advance, to enable MDL to keep the system ready for that activity. Timely availability of Service Engineers shall be ensured.

(e) **TRAINING:** Training package is to be provided as stipulated in TSP cl no. 29. The cost towards training is to be quoted against the line item on lump-sum basis.

(f) **EXTENSION OF WARRANTY:** Supplier shall mandatorily indicate the **monthly rate** for extended warranty period beyond standard warranty period (as mentioned in TSP Cl 31.12), in the event of expiry of warranty period. The extended warranty charges to be quoted for Main equipment excluding OBS, documentation, services, training etc. This charges will be loaded at the time of ranking.

(g) **EXTRA MAN DAYS CHARGES:** Firm shall mandatorily quote extra applicable man day charges for two years. Extra man day charges for 1st year (from 01.02.2025 to 31.01.2026) & Extra man day charges for 2nd year (from 01.02.2026 to 31.01.2027) as mentioned in TSP. The same will be considered for ranking.

Note:

a) Bidders shall quote for all line item in the tender, failing of which offer of the firm falls under rejection criteria.

b) MDL reserves the right to invoke the option of Extension of Warranty and Extra Man-days charges as and when required. It is not mandatory to MDL to avail this services.

(h) **BASE & DEPOT (B&D) SPARES:**

(i) Base & Depot spares are to cover spares requirement for major maintenance/overhaul requirements for 5 years including two refits. as per TSP clause no.18.3.

(ii) B&D spares list along with Comprehensive Part Identification list (CPIL)/Manufacturers Recommended list of Spares (MRLS) for five-year exploitation and maintenance.



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- (iii) Itemized list with cost along with a copy of the maintenance schedule for the equipment is to be provided in the offer. Itemized list (in LMS format to be submitted in soft copy in excel) of Base & Depot spares should be as per Appendix 10 of TSP.
- (iv) The B & D Spares shall be procured by MDL on behalf of Indian Coastguard. The B & D spares shall be ordered at a later date after ranging and scaling of the spares done by Indian Coast Guard.
- (v) The delivery of B & D Spares shall be prior to the commissioning of ship. The tentative delivery date for the supply of B & D Spares shall be indicated in the tender enquiry.
- (vi) The B&D spares ordered by MDL shall be delivered to CGSD (Mumbai)
- (vii) Itemized prices for B&D spares (along with the part no) for five years exploitation period with price validity for 365 days from the tender closing date to be submitted along with price bid as a financial document.
- (viii) Beyond this validity period of B&D spares, bidders shall quote escalation rate on per annum basis for 02 years in percentage of B&D spares basic price (Excluding taxes & duties).
- (ix) **B&D spare rates & escalation rates quoted by firm for 2 years will not be loaded at the time of ranking.**
- (x) After ranging & scaling by Indian Coast Guard (ICG), order for finalized/approved B&D spares would be placed separately by MDL on behalf of ICG.
- (xi) It is mandatory to quote for B & D Spares. Bidders not quoting for B&D Spares falls under rejection criteria. MDL reserves the right to negotiate prices quoted for B&D Spares during PNC.
- (xii) **Bidders are required to submit the itemized price of B&D spares along with price escalation for a period of 02 years p.a. in terms of percentage as a Financial Document during submission of Price Bid.**

2. Following vendor are nominated for EM Log System. Offer received from other than below mentioned vendor will not be considered for the requirement.

- i) M/s Marine Electrical India Pvt Ltd., Andheri Mumbai
- ii) M/s Elcome Integrated System, Navi Mumbai
- iii) M/s Navicom Technology International Pvt. Ltd., Navi Mumbai
- iv) M/s Maritronics India Pvt Ltd, Kerela
- v) M/s Marks Marine Radio Pvt. Ltd, Mumbai
- vi) M/s Keltron, Thiruvananthapuram
- vii) M/s Consilium Safety India Private Limited, Navi Mumbai

3. EARNEST MONEY DEPOSIT: Not applicable

4. PRE-QUALIFICATION CRITERIA:

a) Technical Prequalification:

- i) Vendor shall have experience in Design, Manufacturing & Supply of the Echo Sounder to any sea going vessel.

Supporting Documents:

- i. Vendor shall submit their experience details including work completion certificates and relevant Purchase orders/ Delivery Challan/ Invoice for having this type of equipment.
- ii. Vendor shall submit a declaration in their letterhead that there are no adverse reports from any of their customers for this type of equipment supplied by them. In case any such adverse report/ remark exists, the details of the same may be furnished along with the reference purchase order and customer details.

b) Commercial Prequalification:



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- (i) **Bidder's average turnover during last 03 years (2020-21, 2021-22 & 2022-23) should be at least Rs. 11.25 Lakhs.** For assessing the same Audited / Certified Balance sheet, Profit / Loss account for the corresponding 03 years' period to be submitted.

Note: If any cash transaction is included in turnover (statement of profit & loss) the same will not be considered for turnover value

5. **BID REJECTION CRITERIA**

- (i) Failure to submit sufficient or complete details for evaluation of the bids within a week.
- (ii) Incomplete / misleading / ambiguous bids in the considered opinion of TNC /CNC.
- (iii) Bidders not quoting for all the line items in the tender.
- (iv) Bid with technical requirements and or terms not acceptable to MDL/Customers/External agency nominated as applicable.
- (v) Any deviation sought, which is not accepted to MDL.
- (vi) Bidders not submitting self-certification for local content.
- (vii) Bid received from non –local supplier i.e. Bidder who submit their quote with less than 20% local content.
- (viii) Any deviation w.r.t. of tender documents.
- (ix) **Bids received from other than nominated bidder indicated Sr no.02 above will not be considered for the requirement.**
- (x) Bidders not furnishing B&D Spare list with Itemized price of each spares.
- (xi) Bidders not furnishing Warranty extension charges and Extra Manday charges.

6. **SUBMISSION OF OFFER IN TWO BID SYSTEM:** Offer must be submitted in two parts as follows:

- a) **Part I (Techno Commercial Bid):** The bidder shall ensure following are essentially included in the Part-I bid:
- (i) Blank rate sheet indicating quoted/not quoted against each line item, tax percentage, type of taxes.
 - (ii) PO copies along with Work completion certificate proof for technical pre-qualification criteria.
 - (iii) Declaration of "Local Content as specified in the tender.
 - (iv) Bidder contact details as per attached enclosure" Contact Details of the bidder
 - (v) On Board spares (OBS) list for in excel format with cost breakup in percentage of total OBS cost for 2-years exploitation period.
 - (vi) Lists of B&D spares in excel format (ILMS) with itemized price of each spare as per Appendix-10 of TSP.
 - (vii) Warranty extension charges and Extra Man-day charges.
 - (viii) Vendor shall submit their Experience details including work completion certificates and relevant purchase orders/delivery challan/Invoice for having this type of equipment.
 - (ix) Vendor shall submit a declaration in their letterhead that there are no adverse reports from any of their customers for this type of equipment supplied by them. In case any such adverse report/remark exist, the details of the same may be furnished along with the reference purchase order and customer details.

- b) **Part-II (Price Bid):** Prices for each of the listed items has to be uploaded on GEM.

7. **DELIVERY PERIOD/COMPLETION SCHEDULE:**

- i) Sr No. 1 to 13, 23 to 27: PO + 240 days from issuance of the PO.
- ii) Sr No. 14: PO + 780 days from issuance of the PO.
- iii) Sr No. 15: PO + 330 days from issuance of the PO.



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- iv) Sr No. 16: PO + 540 days from issuance of the PO.
- v) Sr No. 17 & 18: PO + 600 days from issuance of the PO.
- vi) Sr No. 19: PO + 720 days from issuance of the PO.

8. **Consignee/Delivery location:**

Mazagon Dock Shipbuilder Ltd,
Anik Chembur Store,
Kurla Mahul Road, Mumbai-400074.

9. **WARRANTY/GUARANTEE:**

(a) The equipment along with associated auxiliaries/components shall be guaranteed/warranted by equipment supplier for the stipulated performance for a period of 20 months from the date of delivery of equipment to MDL store or 12 months after planned delivery date of the ship by shipyard/MDL to the Indian Coast Guard, whichever is later. Planned delivery date of Y-16101 is Oct 2026. Detailed Warranty clause refer TSP cl no. 31.

The Supplier cannot absolve their responsibility for warranty of system even though it is inspected & approved by Coast Guard and MDL.

(b) If the defects are not remedied within a reasonable/stipulated time, MDL may proceed to rectify the defects at the supplier's risk & cost, but without prejudice to MDL's rights under the contract.

(c) During the period of warranty / guarantee if any defect noticed in the equipment / item supplied, the supplier/ contractor will have to rectify such defects immediately at no extra cost to MDL.

10. **PERFORMANCE SECURITY (EPBG):**

(a) Separate Performance Security for an amount equal to 5% of each order value (excluding taxes, duties) payable in Indian Rupees shall be submitted.

(b) Performance Security is to be furnished as per GeM after notification of the award of contract and it should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations.

11. **PRESERVATION & PACKING:** Preservation/Packing/Conditioning shall be as per TSP clause no. 27 & 28.

12. **TAXES & DUTIES:** To be included in the submitted quote, as per GEM & Govt. guidelines.

13. **INSPECTION:**

(a) Inspection Agency: ABS & IRS. **Inspection charges to be borne supplier.**

(b) Receipt inspection by MDL.

(c) The decision of the Inspecting Authority or their representatives, as the case may be, on any question of the intent, meaning and the scope of Specifications / Standards shall be final, conclusive and binding on the Bidder/ Supplier / Contractor.

14. **Payment Terms:**

(a) **Main Equipment, OBS & Documentation:**

(i) On receipt of Invoice, 95 % of Payment shall be made within 10 days from generation of Consignee Receipt & Acceptance Certificate (CRAC) of material and as reduced by any deductibles and / or the amount leviable towards liquidated damages, if any plus 100% taxes, duties etc. as applicable.

(ii) Payment of the balance of the value of the supplies may be payable and as reduced by any deductibles and / or the amount leviable towards liquidated damages, if any, on



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submission & confirmation of PS of equivalent amount valid up to warranty period plus 60 days claim period.

- (b) **Services/Training:** 100% payment for all kinds of services like STW, HAT, SAT, installation, commissioning assistance, training wherever included in the same order will be admissible for payment within 10 days from Generation of CRAC & submission of original Work Completion Certificate & SAP Service Sheet signed by CM or above of production/planning dept. and ink signed invoice.

15. **CONTACT DETAILS FOR QUERIES:** In case of any clarifications regarding tender condition/TSP/specification, bidders are requested to contact the following person, before the closing date of the tender.

Design Dept.	Mr. Sriram V.	+91 22 2376 3029	sriram@mazdock.com
	Mr. Sachin Solanke, Manager(Design Dept.)	+91 22 2376 3047	srsolanke@mazdock.com
Commercial Dept.	Mr.D S Chavan	+91 22 23762782	dschavan@mazdock.com
	Mr. Sourabh Halder Dep. Manager (C-P15B)	+91 22 23762761	shalder@mazdock.com

16. We look forward to receive your most competitive and reasonable offer against this tender.



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ANNEXURE-B-1

DECLARATION CERTIFICATE FOR LOCAL CONTENT (Tender value Less than Rs 10 Crores)

This declaration must form part of all tenders & it contains general information and serves as a declaration form for all bidders. (Before completing this declaration, bidders must study the General Conditions, Definitions, Govt Directives applicable in respect of Local Content & prescribed tender conditions).

LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID / TENDER No.

ISSUED BY: (Name of Firm):.....

NB: The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

I, the undersigned, (full names),
do hereby declare, in my capacity as
of(name of bidder
entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have read and understood the requirement of local content (LC) and same is specified as percentage calculated in accordance with the definition provided at clause 2 of revised Public Procurement (preference to Make in India) Order 2017.

"Local content" as per above order means the amount of value added in India which shall be the total value of items procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value in percent."

(c) I have satisfied myself that the goods/services/works to be delivered in terms of the above-specified bid comply with the local content requirements as specified in the tender for 'Class-I Local Supplier' / 'Class-II Local Supplier', and as above.

(d) I understand that a bidder can seek benefit of either Public Procurement Policy for MSEs –Order 2012 or Public Procurement (preference to Make in India) Order 2017 and not both and once the option is declared / selected it is not permitted to be modified subsequently. Accordingly, I seek the benefit from the below declared purchase preference policy only.



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i) I seek benefits against the following policy only (Select only one Option):

- 1) PPP MSE Order 2012 (applicable for MSE manufacturers)
- 2) PPP MII 2017 (applicable for Class I suppliers as well as MSE manufacturers)

(Note: If not declared / selected it shall be deemed that purchase preference benefit is sought under PPP MII 2017 policy. However, selection of both the options will be treated as ambiguous and will result in rejection of bid)

(e) The local content calculated using the definition given above are as under:

Tender Item Sr No	Local content calculated as above %	Location of local value addition (Location shall be the specified as name of city or district, etc. Location as name of country will be considered as ambiguous and such bids shall be rejected.)

Attach separate sheet duly signed if space is not sufficient

NB: Local content percentage shall be declared item wise or tender wise strictly as per the terms of the tender.

(f) I accept that the Procurement Authority / Institution / MDL / Nodal Ministry has the right to request that the local content be verified in terms of the requirements of revised Public Procurement (preference to Make in India) Order 2017 dtd 16.09.2020 and I shall furnish the document / information on demand. Failure on my part to furnish the data will be treated as false declaration as per PPP MII Order 2017. In case of contract being awarded, I undertake to retain the relevant documents for 7 years from date of execution.

(g) I understand that the submission of incorrect data, or data that are not verifiable as described in revised Public Procurement (preference to Make in India) Order 2017, may result in the Procurement Authority / Nodal Ministry / MDL imposing any or all of the remedies as provided for in Clause 9 of the Revised Public Procurement (preference to Make in India) Order 2017 dated 16.09.2020

SIGNATURE: _____

DATE: _____

Seal / Stamp of Bidder



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ANNEXURE-C-1

ACTUAL LOCAL CONTENT CERTIFICATE (Tender value Less than Rs 10 Crores)

Note 1: This certificate shall be submitted by the successful bidder post execution of the contract.

LOCAL CONTENT DECLARATION (post execution of contract / PO) BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF CONTRACT No./ PO No.....
ISSUED BY: (Name of Firm):.....

NB: The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

I, the undersigned, (full names),
do hereby declare, in my capacity as
of(name of bidder entity),
that:

- (a) The facts contained herein are within my own personal knowledge.
(b) My/our company had declared the local content at the time of tender as under

Tender Item Sr No	Local content calculated as above %	Location of local value addition

- (c) My / our company has completed the above referred contract and the actual local content of the delivered item/s calculated using the definition in the declaration given at the time of Bid is as under:

Tender Item Sr No	Declared minimum Local content at the time of bidding (%)	Achieved Local content of delivered items (%)

NB: Local content percentage shall strictly be declared item wise or tender wise as was declared at the time of bid / tender.

- (d) I accept that the Procurement Authority / Institution / MDL / Nodal Ministry has the right to request that the local content be verified in terms of the requirements of revised Public Procurement (preference to Make in India) Order 2017 dated 16.09.2020 and I shall furnish the document / information on demand. Failure on my part to furnish the data will be treated as false declaration as per PPP MII Order 2017. I undertake to retain the relevant documents for 7 years from date of execution.

- (e) I understand that the submission of incorrect data, or data that are not verifiable as described in revised Public Procurement (preference to Make in India) Order 2017, may result in the Procurement Authority / Nodal Ministry / MDL imposing any or all of the remedies as provided for in Clause 9 of the Revised Public Procurement (preference to Make in India) Order 2017 dated 16.09.2020.

SIGNATURE: _____

DATE: _____

Stamp / Seal of the company






MAZAGON DOCK SHIPBUILDERS LIMITED
(A Govt. Of India Undertaking)

DOCKYARD ROAD, MUMBAI - 400 010

SHIPBUILDING DESIGN ELECTRICAL

**TECHNICAL SPECIFICATION FOR ECHO SOUNDER
SYSTEM**

PROJECT	:	01 TS
YARD NOS MDL	:	16101
CLIENT	:	Indian Coast Guard
DOCUMENT NO	:	5021
ICG HQ REFERENCE / APPROVAL	:	Class notation + A1 (E) (Government Service) + AMS NIBS +ACC,FFV1-NS CS-Ready, HELIDK(SRF) by ABS or equivalent of LRS/DNV/GL/BV/IRS/NK

4	Distribution unit, Digital depth indicator and Printer with pages added in the TSP as per CGHQ comment	22-02-2024	
3	CGHQ comments received vide letter ref SA/0157/01TS/Elect Eqpt dated 19 Jan 24 received vide email at MDL dated 22 Jan 2024	31-01-2024	
2	TSP revised to incorporate CGHQ comments received vide email dated 10 Jan 2024 & discussions held during VC meeting with CGRPT & CGHQ on 16 Jan 24	18-01-2024	
1	CGHQ comments received vide letter ref SA/0157/01TS/Engg Eqpt dated 29 Dec 2023 incorporated in the TSP	04-01-2024	
0	Draft TSP of Echo Sounder System	18-12-2023	
REV.	DESCRIPTION	DATE	AUTHORISED BY
			
Sachin Solanke M(D-L)	Sudhir Sonawane CM/DPE (D-L)	Pradeep Modak DGM/HOS (D-L)	
Prepared By	Checked By	Approved By	

**MAZAGON DOCK SHIPBUILDERS LTD.**(A Govt. Of India Undertaking)
Dockyard Road, Mumbai –400 010.**DESIGN ELECTRICAL****YARD -16101****ECHO SOUNDER SYSTEM****TSP NO.****5021****REV. NO.****4****DATE****22/02/2024****PAGE****2 of 46**

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MAZAGON DOCK SHIPBUILDERS LTD.

(A Govt. Of India Undertaking)
Dockyard Road, Mumbai –400 010.

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SECTION I:

INTRODUCTION

1. This General Specifications relate to Design, approval of the equipment by the classification society, Manufacture and Supply of one ship set of Equipment for Project 01 Training Ship (TS) of Indian Coast Guard.
2. Project 01 TS consist of Diesel Engine propulsion system comprises of two propulsion plants, each plant consisting of one Diesel Engine driving a Controllable Pitch Propeller and External Fi-Fi pump through single input and twin output Reduction Gearbox and respective shaft line. Each propulsion plant broadly comprises of:
 - (a) One Diesel Engine of minimum 5000 KW power output.
 - (b) One single input, twin-output Reduction Gearbox with built in thrust block.
 - (c) One set of shafting along with associated components
 - (d) One Controllable Pitch Propeller
 - (e) Propulsion plant support systems (for Diesel engines, Gearboxes, Shafting & CPP)
 - (f) Associated Controls & Monitoring System.
3. Class notation for Training Ship is:
 + A1 (E) (Government Service) + AMS NIBS +ACC,FFV1-NS CS-Ready, HELIDK(SRF) by ABS or equivalent LRS/DNV/GL/BV/IRS/NK
4. The Supplier should submit the quotation based on the General Conditions & Requirements (GCR) and the Technical Requirement for Procurement of each equipment. Should there be any discrepancies between the GCR and the Technical requirement of each equipment, the technical requirement/ specification shall prevail.
5. The reference list of the equipment fitted in Indian or International Navy / Coast Guard or similar platform such as ocean going vessel, Offshore Platforms and Oil-Rigs to be submitted along with the offer.
6. The Year of production of equipment and system to be of latest manufacture (during or after Year 2023). This is to confirm to the current production standards and should have 100% of the defined life at the time of delivery. (other than permitted running hours during assembly / acceptance trials)

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GENERAL CONDITIONS & REQUIREMENTS

1. **Subject** : The general conditions and requirements specified in this chapter are intended to meet the functional requirements of a Training platform with integral helicopter capable for operation in oceans environment and performance of all the ICG charter of duties.
2. **Ship's Basic Particulars**: Project 01 - TS class of ships would be Training ships for cadets. Ship's basic particulars, are indicated below: -

Table 1


PARTICULARS		REFERENCE DATA
Ship's dimensions	Length overall (LOA)	107 m
	Beam (water line)	15.2 m
	Draft (deep displacement)	4.02 m
Ship's displacement	Deep displacement	Around 3300Tonnes
Endurance	At cruising speed of 12 to 15 knots	7500 NM
Expected ship's life		25 Years
Operating profile	Continuous slow speeds	Below 8 knots
	Cruising	12 - 15 knots
	Maximum	20 knots
Unrestricted continuous rating of Diesel engine, at 45 degree centigrade ambient temperature		Min 5000 KW

3. Reference Environmental Conditions:

- 3.1 The equipment shall be suitable for marine applications and achieve specified performance smoothly under tropical marine conditions.
- 3.2 The equipment is to be designed for continuous operation & survival under the environmental conditions specified for ambient conditions as specified table below:-

Table 2

Sr. No.	Design Parameter	Value
(a)	Air Temperature	Minimum of 5 deg C and Maximum of 45 deg C
(b)	Sea water temperature	32 deg C
(c)	Relative humidity	90% at 35 deg C

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(d)	Atmospheric pressure	750 mm of Hg column (1000mbar)
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3.3 **Seaway Conditions:** Seaway conditions are defined at a sea water temperature of 1 to + 32 Deg. C, Ambient air temperature of 5 to 45 Deg. C and humidity up to 90% at 35 Deg. C. Salinity of water up to 35000 ppm. The equipment shall be capable of efficient and unrestricted operation without any deviation from its normal operating parameters under the seaway conditions, as below:-

Table 3

Operational (up to sea state 7)	
Roll	Maximum ± 22.5 degree
Pitch	Maximum ± 7.5 degree
Survival (up to sea state 7)	
List	Maximum ± 15 degree from vertical (permanent)
Trim	Maximum ± 05 degree

3.4 **Complement :**

Table 4

(a)	Officers	12
(b)	Subordinate Officers(SOs)/ Enrolled P ersonnel(EPs)	95
(c)	Training Staff	
	(i) Officers.	08
	(ii) SOs/EPs	38
(d)	Under Trainee officers	70
	Total	223

3.5 **Propulsion Plant Operating Profile:** The ship is to be available for exploitation for minimum of 190 days in a year. Each shaft is expected to clock a minimum of 3500 running hours per year. Operational cycle of the ship will be around 36 months.

3.6 **Service life of ship:** The expected service life of ship is 25 years @ 4500 hrs. annual exploitation

4 **Ship's Support Systems Supplies:** For electrical supplies, in case of different requirements (voltage/frequency, etc.), the equipment supplier shall provide suitable provision in their system (transformer/converter/UPS, etc.).

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Table 5

Sr. No	SYSTEM	SUPPLIES	REMARKS
(a)	Electrical	415 V AC @ 50 Hz, 3 phase	Any other power requirement shall be met by the equipment supplier.
		230 V AC @ 50 Hz, 1 phase	

5 Noise & Vibration:

- 5.1 Design of the equipment along with its associated auxiliaries/accessories/controls and mounting system, should ensure minimal vibration and noise.
- 5.2 All components of the equipment and accessories are to be designed for ensuring resistance to misalignment due to forces of vibration.
- 5.3 Suitable flexible hoses, bellows and noise reduction clamps are to be used for associated piping connections with the main equipment/auxiliaries.
- 5.5 Specific requirements on Noise & Vibration are to be as per respective equipment Technical Specification for Procurement.
- 5.6 Noise and Vibration levels of the equipment shall meet the classification rules and guidelines.

6 Noise Levels in Machinery Spaces: Permissible noise levels in machinery spaces are to be in accordance ISO-6954:2000.

The noise criteria for the compartments are as follows:

Sr. No.	Compartments	DB(A)
1.	Machinery spaces	110
2.	MCR	75
3.	Work places	85
4.	Non Specific workshops	90
5.	Bridge and Chartroom	65
6.	Radio Rooms	65
7.	Cabins	60
8.	Dining Hall/Offices	65
9.	Service spaces (galley, pantry)	75
10.	Normally unoccupied spaces	90

7 Vibration Isolators (Anti Vibration Mounts) :

- a. For resiliently mounted equipment, the mounting system shall be capable of attenuating the vibrations of the offered equipment within the limit specified in Technical requirement.

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- b. The installation and connections of the equipment shall account for the extreme displacements that may occur under loading conditions. Wherever necessary, suitable stops/snubbers shall be provided to prevent excessive motion.
- c. Vibration measurements are to be carried out as per ISO 4868(XII)/latest amendment.

8. IP Rating for Electrical Equipment: - IP rating for associated electrical equipment enclosure is IP 44. Specific IP rating to be as per Technical requirement in Section II.

9. Availability/ Reliability/ Redundancy/ Self Sufficiency: - Maximum time required for bringing the equipment to full operational condition while undertaking daily, weekly and monthly maintenance routines, are to be indicated by the equipment supplier.

Equipment should be robust in design for ensuring high reliability, ease of operation and minimum maintenance.

10. Documentation: Various documentation will be submitted by the equipment supplier as per the scope of supply and responsibility. Quality documentation is to be submitted in comprehensive and time bound manner for meeting ship's detailed design and production targets as well as equipment production and delivery schedule. Documentation to be submitted by the equipment supplier are broadly indicated below:


Table 5

Sr. No.	Documentation	Remarks
(a)	Binding design documentation	For progressing with detailed design, integration & installation.
(b)	(i) Quality Assurance Plan (QAP) (ii) Equipment manufacturing/ production documentation (iii) Test and Trial procedure/ Reports	For approval by ABS and IRS equipment quality assurance during production and Test & Trial accordingly.
(c)	Equipment STW/HATs/SATs documentation	For preparing installation inspection/Test and trials documentation
(d)	Technical Manuals for equipment operation, maintenance, logistics, etc.	For ship's crew, training and repair organizations.

10.1 All documentation (including documents, drawings, data, reports, manuals, etc.) should be in English language. Dimensional details in the drawings should be as per scale. Technical data and parameters should be in metric units (SI Units).

10.2 Following file/formats would be acceptable:

- (a) Documents, data & reports in MS-WORD/EXCEL, as applicable

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- (b) Data base files in ACCESS
 - (c) Orthographic drawings (2D) in DXF/DWG format
 - (d) 3D model of external topography of the equipment only in AVEVA MARINE/.STP format of max size of 5 MB
- Above drawings/data are to be submitted in soft copies in latest software version.

10.3 Hard documents to be provided suitably grouped (section wise H, E, L, Navigation & Communication etc.) indexed and in moisture proof bound folders.


10.4 Binding Design Documentation: Comprehensive list of binding design documentation is to be submitted by equipment supplier, along with time schedule.-

Binding Data: Three copies (one set for MDL, Two sets for ICG) and three sets on CD ROM of the following binding drawings/documents are to be supplied by the OEM within one month of placement of order:-

(In addition to hard copies, all equipment drawings are also to be submitted in .stp format)

- (a) Block diagram of the system
- (b) Installation documents if any covering detailed procedure for installation with sequence of activities.
- (c) Installation drawings indicating overall dimensions, C.G., weight, maintenance envelope, IP, rating, shock mount details, mounting arrangement, bolting plan, lifting points, material specification etc. of each unit
- (d) Recommended arrangement of devices in nominated compartments.
- (e) Inter unit-cablings diagram with cables specifications.
- (f) Cable connection Schedule.
- (g) Power supply scheme for the system.
- (h) Heat dissipation of individual units in compartment & in close loop ventilation system, as required for the system
- (i) Parts identification list, indicating part no, qty., maker's name, Specification etc.
- (j) Requirements for support systems such as fire fighting, communication, lighting etc.
- (k) Cable length limitation etc., if any.
- (l) Detailed foundation drawing including bolting plan.
- (m) Power consumption of each equipment
- (n) Any other design data/details, calculations, analysis, specifications, drawings, etc., as applicable
- (o) Shipping/Unshipping requirements
- (p) Training Plan
- (q) Preservation and Represervation and upkeep procedure

11. Documentation Associated with Quality Assurance Plan, Equipment Manufacturing & FATs/Test & Trials: Documentation associated with quality assurance plan (QAP), equipment manufacturing and FATs(Factory Acceptance Tests), will be submitted by the equipment supplier in time bound manner, well in advance for approval by the designated classification society.

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- i. While preliminary quality assurance & test plan shall be submitted by the equipment supplier along with the technical offer, detailed QAP is to be submitted within 15 days after placement of equipment order, for approval of ABS and IRS class.
- ii. Prior to commencement of equipment production activities, equipment supplier shall consult designated Classes and Shipyard/ICG.
- iii. Documentation associated with equipment manufacturing would be submitted by equipment supplier progressively in time bound manner, for approval by designated classes.
- iv. Documentation associated with equipment FATs procedure shall also be submitted by equipment supplier well in advance in time bound manner, for approval by the designated classification society.

12. Documentation Associated with STW/HATs/SATs: - Documentation associated with equipment setting To Work (STW)/ Harbour Acceptance Trials (HATs)/ Sea Acceptance Trials (SATs), shall be submitted by the equipment supplier within the agreed time schedule, with designated classification society and Shipyard/ Indian Coastguard.

HATs/SATs documents shall include HATs/SATs schedule, procedure, pre-requisites, data to be recorded, time interval for data recording, formats for data recording, safety and precautions to be observed during trials, estimated time of the trials and all other relevant data/information required for the successful completion of the trials.

13. Technical Manuals for Equipment (Operation, Maintenance & Logistics) : The technical manuals/documentation pertaining to equipment & its associated auxiliaries/support systems, shall include technical description/information, specifications, drawings, performance data, installation, operational & maintenance requirements, spares & logistics, etc., in systematic, structured & comprehensive manner.

Under operating instructions, pre-starting inspection/checks, starting & shutdown procedures, functional parameters, trouble shooting, fault analysis, precautions, etc. to be suitably covered.

Procedures for undertaking all maintenance routines till the end of service life (for the entire life cycle) (including major overhaul), are to be clearly specified along with preservation/ de-preservation & upkeep requirements (when equipment is not in use, during long refit of ship).

Procedures for setting to work, test & trials of equipment are also to be well documented.

Following technical manuals/documentation (in hard and soft form) shall be provided by the equipment supplier along with equipment supply.

Table 6

<u>Description</u>	Content	Number of copies
Technical Manuals	Technical Description and Operating Instructions Manual	7



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	On board Maintenance Manual	7
	Field and Depot Maintenance Manual	7
	Installation and Testing Manual	7
	Parts and Tools Catalogue including CPL & PIL in ILMS/SLMS Format	7
Technical Documentation	Installation Drawings	7
	As fitted Drawings	7
	Applicable Standards Utilised	7
	Test Procedure and Documentation	7
	Certified Test Reports (FATs, Material Test Certificates, Calibration Certificates, Weight Certificate etc.) & Records (including Type Test Certificate). Class certification	7

NOTE: 1) Draft copy of the above listed Manuals & Documentations (in hard and soft form) shall be prepared by the supplier and shall be submitted to shipyards for comments & to classification society under copy to MDL/ICG for approval, well ahead of the delivery date of the equipment. Approval on the same shall be given within two weeks of receipt of the Manuals & Documentations complete in all respects & required format.


2) Delivery of main equipment shall be considered completed only on receipt of all **approved** Manuals & Documentations as detailed in Table -7 above.

3) All Manuals & Documentations should be categorised as per the above subject/content description only.

14. Quality Assurance And Testing: Quality assurance and testing requirements, pertaining to this equipment should confirm to standard conditions of quality assurance of ABS and IRS.

15. Design Standards: Following rules and regulations as applicable shall be met:

- (a) Nominated Classification Society Class Rules.
- (b) International load line reg. 1966 as amended by Protocol of 1988 and any other subsequent amendments.
- (c) IMO/MARPOL-73/78 reg and any further / latest amendments including MS Act 58 and their rules.
- (d) COLREG 72 and any further/ latest amendments.
- (e) IMO /Anti Fouling System.

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- (f) International tonnage 1969 and any further/ latest amendments.
- (g) SOLAS 1992 as amended in 2002 and any further / latest amendments.
- (h) Stability standard as per NES 109.
- (i) Naval Magazine Explosive Regulations (NMER).
- (j) Helo deck Regulation as per IRS Rules and Regulations for construction of Coast Guard Vessels (Ch-5, Section -8) or equivalent ABS/LRS/BV/DNV/GL/NK rules.
- (k) Superior/higher specifications of standard are acceptable subject to proving and satisfactory trial by Yard.

During execution of the project, following organizations would be associated for ship design, construction, quality control and Ship trials/acceptance:-


- (a) Design : Shipyard / Nominated Classification society
- (b) Construction : Shipyard and CGRPT Mumbai, at Shipyard.
- (c) Quality Control : Nominated Classification society
- (d) Ship Trials : Indian Coast Guard/Shipyard.

16. Quality standard: Design and production of equipment should conform to the best worldwide engineering practices, for ensuring high quality, reliability, durability, ease of operation and maintenance for meeting the ship's requirements.

- v. During equipment production the equipment shall be subjected to various stage inspections. Equipment supplier shall ensure high quality of production as per approved quality assurance plan. Quality assurance should meet the specified standards and intent of ISO 9001: 2015 (quality management systems) or its latest version.
- vi. During equipment production, any deviation to the QAP/finalized specifications/standards shall be brought to the notice of designated classification society and Shipyard/ICG, along with valid reasons and recommended solution, without any compromise on quality, reliability and performance of the equipment.

17. FATs-(Factory Acceptance Trials)(Acceptance Test Procedure)ATP(QAP document)

17.1 Factory Acceptance Trials (FATs). The supplier shall prepare a Factory Acceptance Trials (FATs) schedule. Personnel from Indian Navy will be present during such trials. The schedule should state how the supplier would demonstrate that the delivered system will meet the functional and performance requirements indicated as per ICG SOTR.

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The factory acceptance trials procedure shall comprise of

- (a) Functional Tests
- (b) Verification of design, especially firmware and software
- (c) Test equipment used, calibration requirements
- (d) Pass/Fail criteria
- (e) Expected duration and time schedule

The FATs schedule after being formulated by the supplier should be forwarded to CGHQ, for vetting and approval at least 03 months prior to the trials.

For conducting equipment official FATs, around 12 weeks advance notice shall be given by equipment supplier to designated classification society/Shipyard/ICG, for participation in FATs.

The fully integrated equipment would be subjected to FATS by a team nominated by ICG. The FATS would be carried out in accordance with FATS document approved by ICG.

17.2 Harbour Acceptance Trials (HATs)/Sea Acceptance Trails-

The supplier is required to provide necessary representative(s) to assist during HATs (procedure to be approved by the ICG)

Harbour Acceptance Trials/Sea Acceptance Trials: - On board trials shall be conducted by Shipyard based upon HATs/SATs documentation and ship's trials schedule, which would be planned by shipyard in consultation of equipment suppliers/Trial organizations/Indian Coast Guard. Draft HATs/SATs schedule to be submitted by the firm for concurrence of ICG.

During equipment setting to work and HATs/SATs, equipment suppliers shall assist and offer the respective equipment trials for their successful completion. Equipment testing, tuning and any defect rectification during on board trials shall be undertaken by the equipment supplier in efficient and effective manner.

HATS/SATS documents shall include HATs/SATs schedule, procedure, pre-requisites, data to be recorded, time interval for data recording, formats for data recording, safety and precautions to be observed during trials, estimated time of the trials and all other relevant data/information required for the successful completion of the trials.


Shipyard will prepare GRAQs (General Requirement of Acceptance of Quality), trial document, based on the HATs/SATs document submitted by the supplier. The same shall be forwarded to the supplier for their vetting.

HATs/SATs shall be carried out to the satisfaction of ICG as per approved GRAQ.

17.3 Maintenance & Logistics:

Equipment supplier shall ensure high reliability and low maintenance of equipment. While equipment maintenance and repair between major overhauls would be carried out in-situ on-board the ship, major maintenance/overhaul would be undertaken ashore by repair organization.

Equipment design should therefore ensure ease of maintenance and accessibility to

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important sub-assemblies/components/accessories.

Suitable provisions (such as inspection windows, etc.) as feasible, are to be made for ease of in-situ visual inspection of important sub-assemblies/components/accessories for routine inspection, checks and maintenance, without dismantling the equipment assembly/components.

Equipment supplier shall provide maintenance schedules, planned maintenance intervals and procedure for undertaking maintenance of equipment on-board and ashore.

18. Spares: Installation & Commissioning Consumable, On-Board Spares, Base & Depot Spares, special tools, test equipment, etc., are to be recommended by equipment supplier, taking into account operational and maintenance requirements of the equipment. Equipment supplier shall submit comprehensive list of all types of spares & tools under appropriate category along with the technical offer. Different categories of spares & tools shall be supplied, in consultation with Shipyard/ICG, based upon ranging and scaling by ICG.

Documentation for equipment spares shall include Comprehensive Part List (CPL) & Part Identification List (PIL), for meeting ICG's Logistics Management System (LMS)/Ship's Logistics Management System (SLMS) requirements. All details on spares are to be submitted by equipment supplier in compatible format in electronic media.

18.1 Installation Tools and Commissioning Consumables:

- a) **Installation Tools:** Special tools, jigs and fixtures & test equipment required for flushing, setting to work, testing & tuning, on-board trials (HATs/SATs) and post CST inspection of critical internal parts and reassembly of the equipment and its auxiliary systems shall be supplied. Tools shall be ordered along with the main equipment & delivered along with the main equipment.
- b) **Commissioning Consumables:** The Commissioning consumables (first charge like coolants, greases, special oil, filters, gaskets, refrigerant etc.) shall be included in the scope of supply. Commissioning consumables shall be delivered before STW of the main equipment, tentative schedule of which shall be indicated in the Tender Enquiry.
- c) An itemised list with cost for the same is also to be indicated in the offer to facilitate their procurement in future, if required.
- d) One set of standard tools adequate for undertaking the maintenance onboard should be supplied along with the offer.

18.2 On Board Spares (OBS):

- (i) The manufacturer's recommended list of On-Board Spares (MRL-OBS) required for servicing and maintenance, including breakdown maintenance for two years of operation after completion of the standard warranty period, should be included in the scope of supply. A list of On-Board Spares along with the maintenance schedule is to be submitted. The On-Board Spares and special tools shall cater to all on-board maintenance routines and possible repair

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requirements. Preservation requirements of On-Board Spares, if any, shall be indicated in the offer. The list of On-Board Spares required for auxiliary equipment/system shall also be indicated in the offer.

(ii) The On-Board Spares shall be ordered along with the main equipment. In case of any defect or deficiency observed in OBS while handing over of OBS to ship's Crew, the same may be made good by the respective OEM without any cost implications.

(iii) An item-wise list with cost (in LMS format to be submitted in soft copy in Excel) of On-Board Spares, special tools, and test equipment should be as per Annexure 10.

(iv) The Manufacturer's Recommended List of On-Board Spares has to be recommended based on the likely consumption rate of the spares and on the exploitation pattern of the equipment.

(v) Firms quoting lesser Manufacturer's Recommended List of On-Board Spares in terms of range and depth will have to make good deficiencies at their cost without any financial responsibility or liability to ICG/MDL within 30 days of intimation to render equipment operational.


(vi) A certificate of sufficiency of Manufacturer's Recommended List of On-Board Spares is to be submitted by the firm for 03 years of operation of the ship.

(vii) MDL/ICG would have the option to amend the Manufacturer's Recommended List of On-Board Spares proposed by the firm during the Technical Negotiation of the equipment within quoted price to ensure its sufficiency, based on its past experience of the exploitation of the same or similar equipment.

(viii) The Manufacturer's Recommended List of On-Board Spares should also include the spare conforming to Classification Society rule requirements for the vessel.

18.3 Five-Year Base & Depot Spares/Comprehensive Part Lists: Base & depot spares are to cover spares requirements for major maintenance/overhaul requirements for **5 years** including two refits.

- a) Recommendation for insurance, on long term storage may be indicated. The firm is to submit Comprehensive Part Identification List (CPIL) and Manufacturer Recommended List of Spares (MRLS) for five years exploitation and maintenance.
- b) Itemized list with cost in editable format along with a copy of the maintenance schedule for the equipment is to be provided in the offer. Itemized list (in LMS format to be submitted in soft copy in excel) of Base & Depot spares should be as per Annexure"10"
- c) The B & D Spares shall be procured by MDL on behalf of Indian Coastguard. The B & D Spares shall be ordered at a later date, after ranging and scaling of the Spares done by Indian Coast Guard.

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- d) The delivery of B&D Spares shall be prior to the Commissioning of the First of Class Ship. Delivery date for the supply of B & D Spares shall be indicated in the Tender Enquiry
- e) Quotation for MRL-B&D along with part no for five years exploitation with price to be supplied along with the offer with item wise cost.

19. INDIGENISATION / LOCAL SUPPORT: (Applicable to equipment with import content)

- a) The supplier is to indicate if the equipment is original OEM supply or manufactured in INDIA under license (specifying the import content). The manufacturer is to engage into a co-operation with a reputed manufacturer of similar equipment's in India and accordingly plan for progressive indigenization.
- b) In this respect, the equipment manufacturer shall confirm that he will be able to authorize priority works at his works and provide the necessary local support as required to meet the ship construction and trial programme and provide the necessary after sale support to the ICG. Future plans for indigenous production of the equipment associated control/monitoring devices and transfers of technology are to be indicated in the proposal for consideration of Indian Coast Guard Headquarters.

20. Product Support: Equipment supplier is to provide product support for ship's life of 25 years. In case the equipment is likely to be obsolescent, the supplier shall notify the Coast Guard with at least two years prior notice, along with valid reasons and recommended solution.

- (a) The firm/OEM to submit undertaking to provide product support for minimum period of 25 years from date of delivery of the vessel.
- (b) Undertaking for upgrade/currency of software for all equipment min 05 years from date of delivery of vessel. In case of obsolescence within 05 years from date of delivery of the Training ship, the same to be upgraded without any additional cost.
- (c) Firm to indicate after sales and product support facilities in India with response time for attending defect and providing spares.
- (d) All upgradation and modification carried out on equipment during its life cycle must to be intimated to ICG. Further, any upgradation/modification during guarantee period of the equipment same to be included free of cost.
- (e) Firm should agree to enter into the rate contract / All-inclusive Annual maintenance contract (AIAMC) with ICG for maintenance and supply of spares.

21. Operational Cycle: The operating refit cycle of ship is as follows:

- (a) 1st and 2nd Ops refit cycle – Operation cycle of 24 months followed by a refit.
- (b) 3rd and 4th Ops refit cycle – Operation cycle of 18 month followed by a refit.
- (c) Balance Ops and refit cycle – Operation cycle of 15 month followed by a refit.
- (d) First three refits are short refit (SR) followed by a normal refit (NR). Second NR will be medium repair (MR).
- (e) Short refit is for duration of 04 months. Normal refit is for duration of 05 months and medium refit for duration of 12 months.

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22. Interchangeability: Equipment design is to ensure that components and parts having same dimensions and characteristics should be inter-changeable between different units of similar kind in the ship, without affecting the specified equipment performance.

23. Tally and Diagram Plates:-

All tallies and diagram plates shall be as per OEM Standards and must generally indicate the following-

Manufacturer's Name-

Manufacturer's Serial No. Type/Model:-

Year of Manufacture.-

Electrical parameters viz. Ratings, Voltage, Frequency, Current, Insulation details etc as applicable-

Weight of Equipment.-

IP Rating of the equipment.-

Danger labels in Red colour with white lettering are to be provided on all electrical equipment operating on 150Volts or higher.

Other important instructions are to be given on tally plate.

Tally of JB/Panel and other equipments internal diagram plate to be prepared by OEM.

Cable Tallies as per approved system drawing to be prepared by OEM.

Cable tallies should be supply for both the ends.

24. Instruction Plates: Instruction plates listing the starting/shut-down procedure and precautions in brief are to be prominently displayed on the equipment. The Instruction plates are to be SS/ chrome plated. Equipment is to be supplied with a set of instruction plates duly mounted on equipment or supplied loose.


25. Painting Specification:

Paint of standard marine quality to be applied to the equipment. Details to be forwarded with the offer. Painting of machinery and electric equipment shall be as per the manufacturer's standard but finish colour shall be in accordance with painting schedule, wherever specified.

26. Lifting Arrangement: - Equipment components weighing more than 40 kilograms are to be provided with eyebolts/lifting arrangement, for ease of handling/lifting on board the ship or ashore. During transportation/transit of equipment, adequate provisions (such as supports, locking arrangement, jacking, etc.) are to be made for preventing any damage to the equipment & its associated components. Any component requiring special handling shall be clearly marked and appropriate handling instructions shall be provided by equipment supplier. One set of special lifting gear (if any) shall be supplied to shipyard.

27. Preservation / Conditioning:

- a. Equipment supplier is to provide high quality packing for the complete scope of supply along with handling arrangements. The package/container should display clear instructions for stowage, handling, care and accessibility for inspection of equipment preservation condition.

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- b. Equipment shall be supplied with Initial preservation for a period of 24 months for tropical conditions and protected against high humidity. The equipment are to be preserved on delivery as per the standard marine engineering practice. Closing plates/plugs/caps (duly filled with nitrogen gas) are to be provided on all openings.
- c. For re-preservation requirements, at shipyard or on board ship beyond initial preservation period, suitable provision is to be catered for by equipment supplier. Equipment supplier shall provide re-preservation & upkeep procedure, preservatives/consumables and technical assistance/supervision to the shipyard, as per requirements.
- d. Preservation requirement, procedures and schedule for main equipment, OBS and B & D Spares are to be indicated in the offer.

28. Packing & Shipping:

- a. All equipment shall be adequately packed and protected with supports to ensure adequate protection during all methods of transportation. Each unit within a package/container shall be clearly marked in English for identification. The container shall clearly indicate the commodity description with caution marks, weight, size, etc.
- b. A separate document giving complete details & instruction for storage, preservation, handling & transportation after delivery shall be supplied & a copy must be included with the shipping document. The supplier should indicate the delivery schedule port of embarkation, transport, packing, preservation, insurance etc.
- c. The instrumentation, sensors and meters etc. which are fitted on the equipment are to be removed from the equipment and shall be staggered delivered according to shipyard schedule in a separate suitable box/packing during STW.
- d. Following items shall be packed in separate containers/boxes with proper colour coding (with description) & list of their contents in English for their easy identification and traceability:
 - i. Deliverables related to Main Equipment (to be marked in green colour).
 - ii. Deliverables related to Auxiliary Equipment (to be marked in green colour).
 - iii. Deliverables related to Installation material and Tools related to Main & Auxiliary Equipment (to be marked in green colour).
 - iv. Commissioning consumables and Tools (to be marked in green colour).
 - v. On Board spares and Tools (to be marked in red colour) in SPTA boxes
 - vi. Base & Depot Spares (to be marked in red colour).
 - vii. Documentation (to be marked in blue colour).
 - viii. The list of actual deliverables against each of the above serials

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shall be forwarded to shipyards in soft copy (MS Excel format) with required part nos. within one week of finalization of PNC in order to detail them in the purchase order.

- ix. Packing list should give further breakup of items, wherever particular item is quantified by set.

29. Training :

- a) The equipment supplier is to impart training, to ship's crew, on aspects related to operation, installation, maintenance and repair of the equipment.
- b) For imparting training, complete training package in hard & soft form (including suitable training material, docket, computer based aids, etc.), is to be provided by the supplier to the participants.
- c) Training would be conducted by the equipment supplier at Shipyard/ On-board Ship. Training plan will be submitted by the equipment supplier, along with the technical offer. Training is required to cover the following aspects (but not limited to):

Design and installation


- (a) Operation and trouble shooting
- (b) Control & monitoring
- (c) Upkeep and routine maintenance
- (d) On board maintenance including major repairs and overhaul.

30. Security of Information: The information contained in this document is not to be divulged to any other firm/third party without the prior permission of the Indian Coast Guard and MDL. Adequate measures are to be taken to ensure safe custody of this document.

31. Warranty:

31.1 The equipment along with associated auxiliaries/components shall be warranted by the equipment supplier for the stipulated performance for a period of twenty (20) months from the date of delivery of equipment to MDL or twelve (12) months after planned delivery date (D) (mentioned in subsequent Para) of the ship by shipyard MDL to the Indian Coast Guard, whichever is later. This is to be referred as 'Standard Warranty'.

31.2 During the said period, the equipment supplied shall be warranted against any malfunction, defects, material failure, non-compliance to ordered specifications, sub-optimal performance, design deficiency, poor workmanship and quality. Any expenditure on account of equipment malfunction, repair or supply of spares against warranty defects shall be borne by the equipment supplier. If any defective part is required to be taken back to OEM's factory/works (i.e. importing and re-exporting from Country of origin) for the purpose of service, the entire liability including expenditure towards the same shall be borne by the supplier. The spare parts required / consumed for scheduled servicing & maintenance activities in the period of 'Standard Warranty' shall also be provided by the OEM without any commercial implication.

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- 31.3 In case of systems/equipment, which have not completed trials prior delivery, the warranty of that particular system/equipment and service would commence from the day of successful completion of trials. The Supplier will undertake update (if any) of software's for all equipment up to 5 years from the date of acceptance of the vessel.
- 31.4 If within the period of warranty, the Training ship and (or) stores and (or) spares are reported by the Shipyard to have failed to perform as per the specifications, the Supplier shall either replace or rectify the same free of charge, maximum within 15 days of notification of such defect by the Shipyard provided that the goods are used and maintained by the Shipyard as per instructions contained in the operating Manual.
- 31.5 Warranty of the equipment would be extended by user in log book, Spares and all consumables required for warranty repairs shall be provided free of cost by Supplier. All activities including diagnosis, rectification, calibration, transportation etc., required for making equipment serviceable and available would be Supplier's responsibility.
- 31.6 The Supplier also undertakes to diagnose, test, adjust, calibrate and repair/replace the goods/equipment arising due to accidents by neglect or misuse by the operator or damage due to transportation of the goods during the warranty period, at the cost mutually agreed to between the Shipyard and the Supplier subject to acceptability by the Shipyard. The Supplier shall intimate the assignable cause of the failures.
- 31.7 Supplier hereby warrants that necessary service and repair backup during the warranty period, shall be provided by the Supplier and he will ensure that cumulative downtime period for the Training Ship and or the fitted equipment /system equipment does not exceed 45 days of the warranty period. Thereafter, the Shipyard reserves the right to make good the defects at Suppliers risk and cost.
- 31.8 If the associated equipment and service, spares of Training Ship fails frequently and/or, the cumulative down time exceeds 45 days of the warranty period or a common defect is noticed repeatedly with respect to a particular item/component/sub-component, that complete item/ equipment shall be replaced free of cost by the Supplier within 45 days of receipt of the notification from the Shipyard duly modified/upgraded through design improvement in all equipment supplied/yet to be supplied and Engineering Support Package (ESP) supplied/yet to be supplied. Thereafter, the Shipyard reserves the right to make the defects at Supplier risk and cost.
- 31.9 In case the complete delivery of the ESP is delayed beyond the period stipulated in this contract, then the Supplier undertakes that the warranty period for the goods/stores shall be extended to that extent.
- 31.10 The Supplier warrants that the Training ship, the associated equipment and service supplied will conform to the Temperature and Humidity conditions as mentioned in this document.
- 31.11 The Supplier agrees to provide back to back warranty of equipment /system or any other item whose specified warranty by the OEM is more than 12 months and shall extend the same warranty to the Shipyard at no. additional terms and conditions.



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31.12 **Extension of Warranty:** Supplier shall mandatorily indicate, in the offer, the annual rate for extended warranty period, in the event of expiry of warranty period as detailed above along with the attendant commercial terms and conditions if any.

32. Planned Ship Delivery date(D): The planned date for delivery of the Ships to the Indian Coastguard by MDL are tabulated below:

Ship no.	Yard No.	Planned Delivery date
1	16101	October 2026

33. Weight Recording / Weight Certificate: Weights of all components are to be recorded and a suitable certificate shall be submitted, by the equipment supplier. The designated inspection authorities shall countersign such certificates. Format for weight control data sheet, is placed at Annexure of this document.

33.1 Net weight of each component is to be recorded in presence of designated inspection authority and the weight certificate is to be submitted by the equipment supplier, along with equipment supply. Format for weight certificate, is placed at Annexure of this document.

33.2 The supplier shall have to submit, reasons for variation between allocated weight and actual/certified weight for each and every item, wherever applicable, to Coast Guard and MDL for their consideration and further necessary action.


34. Technical Assistance:

34.1 The Supplier shall provide the necessary representative(s) **as and when required**, in carrying out inspection and supervise the work that is done on the equipment, during the following phases:

- (a) Preparation for installation of equipment by shipyard.
- (b) Monitoring of proper equipment preservation during storage.
- (c) On-board erection and alignment.
- (d) Setting to Work (including fitment of latest calibrated instrumentation).
- (e) Harbor Trials.
- (f) Assistance in trouble shooting.
- (g) Customer Sea Trials
- (h) Post CST equipment Inspections.
- (i) Final Machinery Trials.
- (j) Assistance in operation during equipment guarantee period.

34.2 The supplier shall indicate total cost for executing all technical assistance activities mentioned above, in the price bid. Activity-wise cost break up shall also be given in the price bid, to facilitate the payment on satisfactory completion of the activity.

34.3 Shipyard has to progress on ship construction activities, simultaneously on ships

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of the coastguard project or on ships of different projects. View this, there shall be every likelihood of clash of requirement of technical assistance. In such eventuality, in order to avoid delays on one ship due to similar work requirement on other ship, supplier shall depute their dedicated separate/independent team of supervisors/specialists for required technical assistance, on the required ships. Rotation of supervisors/specialist amongst the various ships/projects shall be avoided.

34.4 The supplier shall provide checklist for installation, setting to work, HATs & SATs to the shipyards to ensure the completeness of the activities by shipyards in order to avoid waiting period of the supplier specialists.

35. Receipt Inspection: Receipt inspection for the major equipment shall be carried out in the presence of OEM rep to verify completeness of the scope of supply and intactness of the supplied equipment. Defective / damaged parts and deficiency, if any, in supply shall be made good by OEM free of cost. OEM shall be intimated the date of receipt inspection.

36. Compliance Matrix: Para-wise compliance matrix, including paras which are not applicable, as per the technical specifications (contained in this document) shall be submitted by the equipment supplier along with the technical offer, in the format as per Annexure-5 (preferably in excel sheet). The technical offer received without Compliance Matrix shall be liable for rejection.

37. OEM's responsibility-

- a) OEM to Prepare system drawing/Cable drawing in autocad .dwg format .
- b) OEM to prepare cable schedule, connection schedule of the system.
- c) Connectorisation of the delivered equipment and termination of the cable will be done by OEM onboard.
- d) Interfacing of third party equipments/System and handshaking of data will be OEM's responsibility to prove system onboard.



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Section –II


TECHNICAL REQUIREMENTS

38. Scope of Supply- ECHO Sounder (1 set.)


Echo Sounder of dual frequency type (33 KHz & 210 KHz) for indicating, measuring and recording depth shall be provided. The system shall comprise of data recorder, Digital Indicator, Power Supply Unit, Junction Boxes, Transducers, etc. Recorder and Digital Indicator and shall be installed on bridge. The repeater should be at Trainees Bridge.

The Echo Sounder consists of following subunits:-

- a) Dual Frequency Main Display unit- 1 No.(Bridge)
Type approved high resolution Graphical TFT with user friendly Main display unit must be suitable for measuring the range of depth 0-1600 meters
- b) Data Recorder – 1 No.(Bridge)
- c) Digital Depth Indicator Display Flush Mounting type(Loc:- Slave display in Training bridge)-1 sets
- d) Repeater – (Training Bridge, Bridge Wing docking console Port & STBD)-3 set
- e) Transducer Suitable for 33 KHz with 20 Mtrs of cable- 1set.
- f) Transducer suitable for 210 KHz with 20 Mtrs of cable-1 set.
- g) Cable from Junction box to main unit of Echo sounder-200mtr for each transducer
Any limitation of Transducer cable length to be indicated in the offer-1 set
- h) Stuffing tube-2 set
- i) Distribution unit-1 set
- j) Printer operating on 230V AC/24V DC power supply & printer cable of standard Length-1 Set
- k) 2000 sheets endless paper-1 set
- l) Transducer casing- 2 set
- m) Junction boxes (IP-56) - 2 set.
- n) Power supply for electronic unit and repeater suitable for operation in 230V 1Ph, 50 Hz AC supply (provision for 24VDC to be provided by firm in case of failure of supply). - 1 Set
- o) NMEA buffer unit-1 Set

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- p) All Cables (other than power supply cable)-1 set
(Cable for Repeaters-300m approx)
- q) Echo Sounder should have data recorder facility to save Depth information for 12 hours (recorded every 1 minute) as per IMO requirement.
- r) Echo Sounder with shallow depth alarm feature to be provided.
- s) All standard accessories including data recorder, Digital Indicators, transducer tank, Power supply units, Junction boxes, all types of cables, mounting accessories and installation material etc to be supplied along with the equipment as per system requirement.
- t) All main and remote displays should have dimming facilities to vary the light intensity from zero to maximum as per class regulations.
- u) Study GA drawing of Vessel, Vendor to recommend the Frame No for ideal location for the transducer Installation consulting with OEM.
- v) Main equipment as per Technical Requirement
- w) All flexible hoses/bellows, interface flanges, counter-flanges, couplings, pipe stubs and fasteners, required to connect Main and Auxiliary Equipment to the ship's piping. They shall be delivered along with Main Equipment
- x) All mating electrical connectors, plugs and sockets for supplied equipment, for assembly with ship's interconnecting cables. Cable Glands shall be supplied with fitted glands on removable plates to be fitted at the bottom of the panel. They shall be delivered along with Main Equipment
- y) Deliverables related to Installation material and Tools required to carry out installation, alignment of Main and Auxiliary Equipment (shall be delivered along with Main Equipment).
- z) Instrumentation & sensors shall be supplied loose, to the extent possible, before STW of equipment with latest valid calibration certificates. Itemized cost breakup shall be given in offer/price bid.
- aa) Commissioning Consumables and Tools (including special tools / instruments / gadgets required to conduct HATs and SATs) shall be delivered before STW of the Main and Auxiliary Equipment.
- bb) On Board Spares and Tools shall be delivered before STW of the Main and Auxiliary Equipment.
- cc) Base & Depot Spares shall be delivered prior to the Commissioning of the Ship.
- dd) Preservatives required for preservation of the equipment & items (shall be delivered along with Main Equipment).

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- ee) Documentation in hard as well as soft copies shall be delivered along with Main Equipment for each ship set as detailed in the Table
- ff) The equipment shall be supplied in its entirety to make it fully operational. All the items/materials as indicated in the P.O & TNC are to be supplied in single delivery.
- gg) The equipment shall be supplied with all its accessories including interconnecting cables, cable glands, connectors, nuts, bolts, consumables, etc. required for installation and satisfactory performance of the equipment.
- hh) Equipment, Units to be provided with Earthing studs/bolts on both the sides
- ii) All terminal blocks and connectors should be of Wago/standard OEM make
- jj) Whenever the type/model of the equipment mentioned in the quotation is out of production and superseded, the latest version is to be supplied without any cost implications. However, details of the same are to be sent to MDL for study and approval well in advance. Latest upgraded equipment inclusive of processor will be supplied
- kk) The system should be suitable for operating on 230V AC, 1Phase, 50Hz AC supply (provision for 24VDC to be provided by firm in case of failure of supply).


39 Interface Requirements:- Suitable for interface with ECDIS, VDR, DGPS, AIS, Radars, GYRO, IBS MFC(Hardwired), and Other interfaces.

40 Echo Sounder outputs:-The Echo Sounder should have provision for the following outputs tentatively.

- a) 2 X RS 422 NMEA 0183 latest Version (3.01 Version or Higher) for Integrated Bridge System Sensor Servers
- b) Any other Interfaces not indicated above but required according to (MO & NIBS notation (ABS) to be supplied.
- c) 02xGLONASS, 01x IRNSS provision for giving input to Echosounder to be provided

41 Services of Engineers, Commissioning & proving Performance including interfaces as defined below:


- a) The supplier should provide services of engineers for Installation assistance wherever specifically asked for. Charges for service engineer's assistance should be quoted for each function mentioned below.
- b) The supplier should provide services of engineers for setting to work, Harbour Acceptance Trial, Sea Acceptance Trial and Defect Rectification if any.
- c) Any other work/activities which are un-foreseen but demands the requirement of firm's service engineer as decided by MDL.

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- d) The estimated number of mandays for which services of firm's engineer(s) may be required need to be indicated by the firm based upon past experiences in executing similar jobs on CG vessels.
- e) If any special test equipment required for these trials the same to be provided by the firm on returnable basis.
- f) The supplier is responsible in all respects for the completeness of the system and should prove satisfactory performance of the system/equipment on board the ship to the CGHQ rep/Local Surveyor/MDL QA rep as per as per approved trial schedule, including Service of Engineers, Commissioning.
- g) For interfaces, firm to clearly indicate the following for the Inputs/Outputs received/transmitted and the required Output/inputs transmitted/received by the other equipment at the other end to ensure proper interface between the equipment as per IMO rules and NIBS Notation.
 - h) Interface hardware type like RS 422 or RS 232 etc
 - i) Software Protocol like NMEA 0183 RS 422 3.01 version etc
 - j) Type of messages etc
 - k) Exact inputs/outputs required will be indicated on finalisation of each equipment
 - l) The firm must confirm to the performance of the equipment in the position which will be reflected in the General arrangement drawing.
- m) The supplier should ensure the failure of any one Echo Sounder repeater should not affect the operation/ performance of other repeaters

42. Specific Requirements:-

- a) Echo Sounder offered should be compatible for integration with Integrated Bridge System with all necessary interfaces as per NIBS notation of ABS and IBS notation of IRS.
- b) Only OEMs and the authorised Indian Company of the parent firm shall be executing the assigned tasks. Sub-contracting of any work to any other party is not acceptable and shall be rejected.
- c) OEMs/Authorised Indian Company of the parent firm shall be fully responsible for satisfactory performance of interfacing of Equipments / Items.
- d) It is preferable that the suppliers indigenously manufacture, assemble, test and provide life cycle support of imported items to the maximum extent in order that the System is supported locally from within India. This local support should be provided either by the Indian Company of the parent firm and or through collaboration with a reputed Indian firm. Due weightage will be given to product support and maintainability.
- e) Firm to approve the Location, Seating of Transducer, and Installation Wiring Diagram for satisfactory Installation/proper termination of the Echo Sounder on board soon after placement of order.

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- f) Firm to indicate details regarding necessary pressure tests and insulation resistance checks to be carried out on transducer/transducer cables prior to launching of the vessel soon after placement of order.
- g) Firm to indicate the distance upto which the transducer cable is to be laid in conduit pipe. Further, firm to indicate the OD of the conduit pipe to be laid for transducer cable soon after placement of order.
- h) Firm to indicate if there is any specific requirement of special preservation for the equipment/accessories.
- i) List of firm's own manufactured items and list of bought out items by the firm if any to be clearly indicated in the offer
- j) Firm to prepare Installation Wiring Diagram, Seating drawings, Layouts and location of transducers soon after placement of order.
- k) Manufacturing quality inspection and Test certificates.
- l) ABS or equivalent Type Approval Certificate complying to IMO's Res. A.224 (VII) & MSC.74(69) Annex 4 "Performance Standard for Echo-Sounding Equipment" and A.694(17), MSC 191 (79) or any other latest rule as amended and required by ABS/IMO/SOLAS for meeting NIBS notation.

43. General Technical Requirements:-

- a) The equipment shall be supplied in its entirety to make it fully operational. All the items/materials as indicated in the P.O & TNC are to be supplied in single delivery.
- b) The equipment shall be supplied with all its accessories including interconnecting cables, cable glands, connectors, nuts, bolts, consumables, etc. required for installation and satisfactory performance of the equipment.
- c) Equipment, Units to be provided with Earthing studs/bolts on both the sides.
- d) All terminal blocks and connectors should be of Standard reputed make.
- e) If any special tools and calibration kits are required for erection, commissioning and maintenance of the equipment they are required to be supplied along with the equipment on returnable basis.
- f) Whenever the type/model of the equipment mentioned in the quotation is out of production and superseded, the latest version is to be supplied without any cost implications. However, details of the same are to be sent to MDL for study and approval well in advance. Latest upgraded equipment inclusive of processor will be supplied. All upgradation in the computer will be taken care by the firm.
- g) Laminated circuit diagram to be provided.

44. Environmental Conditions:-

- a) The equipment offered must be suitable for marine applications and should achieve specified output and function smoothly under tropical conditions.

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- b) It should withstand air contamination through oil, salt and other contaminants associated with the marine environment.
- c) The equipment shall be water drip proof as a minimum requirement.
- d) The equipment shall be robust in construction and suitable for marine use to withstand shock/vibrations incidental to ship movements.
- e) Due to the space constraint, all efforts should be made to minimize the weight and dimensions of the equipment as far as practicable, without impairing the functional parameters.
- f) Space requirements for withdrawal of units/sub-assemblies to be indicated in Installation drawings/manuals. Unless otherwise specified/agreed, equipment should be of front withdrawal type.
- g) In case the supplier is not able to meet the specification requirements, he should clearly point out the deviations and the reasons thereof in his quotation. If not, it will assume that the supplier will meet all the requirements of specifications in toto.
- h) Any other requirements not covered in this specification, but can give better performance of the equipment/system, may be referred to MDL.
- i) All Equipments /units weighing 20 Kgs and above shall be provided with lifting eye bolts.
- j) The item before dispatch is to be weighed and the actual weight be indicated in the dispatch documents.
- k) 50 mm green edge on seating to be provided to account for shear/camber.
- l) If required by Indian Coast Guard, the supplier should supply special tools, test equipment, jigs and fixtures for setting up repair/refit facilities ashore.

45. Assistance:-

The supplier should provide services of engineers for setting to work, harbour acceptance trials and sea acceptance trials of equipment whenever required by the Shipyard/Owner. Installation assistance wherever specifically asked for is to be provided. If any special test equipment is required for these trials, they are to be provided by the supplier. Charges for service engineer's assistance should be quoted for each function mentioned above.

Additional items, if any not indicated in the above scope of supply but essential to achieve completeness of the system/configuration and satisfactory functioning of the system/equipment will be the responsibility of the firm to supply without any price implications. Such items to be supplied to MDL after relevant discussions/correspondence with MDL.

46. **Calibration** to be carried out to customer specification, by Manufacturer. Assistance in Installing Transducer (hull unit) to be provided, if required for the first vessel. Echo Sounder calibration will be done during the sea trial.

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47. **CABLES:** All cable assemblies required are to be supplied in prepared condition along with the installation material/ main equipment, and length of each cable to be indicated. All cables required to interconnect the Echo Sounder system equipments, sub-system equipments, OEM cables etc shall be of LFH type & shall be supplied by the firm. The power supply cables should be of EBXL type and signal cables should be of LFH type. For all interconnecting cables, list of types of cables used along with detailed specification of each type of cable to be indicated. Cable length restrictions if any are to be indicated in the offer. The type/ pattern no of interface cables (connecting to other system), OEM/suppliers' cables etc. to be indicated in the offer. The tentative quantities of end connectors are also to be indicated in offer.

Firm to consider all cables required to complete the system configuration and quote for adequate quantities required. Any inadequacy in supplied cables vis-à-vis actual requirement onboard observed thereafter shall be made good by the firm without any cost implications.

All the cable should be LFH type.


48. **Services of Engineers** : are to be quoted for following activities. The total charges should be quoted on lumpsum basis considering duration of each activity and not on man day rate basis. The schedule indicated in PR for Services of Engineers indicated is tentative, final schedule will be intimated with respect to ships progress by MDL. No additional charges will be paid besides the quoted charges against any cause to complete the STW, Commissioning, HATs and SATs for Echo Sounder per ship. The supplier should provide services of engineers for Installation assistance wherever specifically asked for. Charges for service engineer's assistance should be quoted for each function mentioned below.

The supplier should provide services of engineers for setting work.

The Supplier shall provide the necessary representative(s) to assist, as and when required, in carrying out installation of Transducers.

49. **Upgradation of Electronic Equipment.**

- a) The OEMs of electronic equipment being fitted should provide upgradation of the equipment/sub components/software in case of obsolescence within 05 years from date of acceptance of the vessel without any additional cost.
- b) The Vendor shall submit an undertaking to maintain currency/upgrade of software for the equipment upto 03 years from the date of delivery of the Vessel.
- c) In the event of any obsolescence during the above mentioned period of product support in respect of any component or sub system, mutual consultation between the vendor and MDL/ Owner / Indian manufacture will be undertaken to arrive at an acceptable solution including additional cost, if any.
- d) Any improvement/Modification /up gradation being undertaken by the OEM or their sub-suppliers will be communicated to MDL/ Owner. During the guarantee period, these improvement/ modification/up gradation will be carried out by the vendor at vendors cost and post guarantee period at Owners cost if required by the owner.

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- e) The OEM of Electronic Equipment being fitted should provide Upgradation of the equipment/sub components/software in case of obsolescence within 05 Years from date of delivery of the vessel without any additional cost.

50. Certificate of Malicious Code :

- a) OEM would undertake necessary measure to ensure strict adherence to the following certificate of Malicious Code submitted by them while bidding the tender.
- b) "This is to certify that the Hardware and the Software beings offered as part of the contract does not contain embedded malicious code that could activate procedures to:-
- c) Inhibit the desired function of equipment
- d) Cause physical damage to the user or his equipment during the operational exploitation of the equipment
- e) The OEM is liable in case physical damage or malfunctioning is caused due to activation of any such malicious code in embedded software.
- f) The OEM will be considered to be in breach of the contract in case physical damage, loss of information or infringement related to copyrights and Intellectual Property Rights(IPRS) are caused due to activation of any such malicious code in embedded software.

51. SCOPE OF OFFER-

As a minimum, the following technical and design details applicable to equipment/item shall be submitted with the technical proposal:


- a) System Overview
- b) Proposed system configuration.
- c) System Description with block diagram, System components, System operation.
- d) System software (Software components, brief description of software and architecture), System start up, HMI functionality.
- e) Technical specifications of system.
- f) Description of Interfaces with other on board systems along with block diagram.
- g) List of cables, connectors, installation materials and accessories inclusive / not inclusive in the standard scope of supply.
- h) List of items required for installation and operation of the equipment and not supplied by the manufacturer.
- i) List of shock mounts and quantity supplied for each equipment.
- j) List of special tools, items required to carry out preservation at Yard
- k) List of recommended OBS.
- l) List of B&D.
- m) List of special Tools / instruments and test equipment required for On Board Maintenance.
- n) List of accessories inclusive / non-inclusive in the standard scope of supply.

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- o) Clear demarcation between the scope of supply of firm and that of ship builder.
- p) Itemized price list of system components and other services offered.
- q) Delivery time from receipt of order.
- r) Indicative maintenance plan.
- s) Proposed training plan.
- t) Supply of complete binding data within three weeks of placements of order.
- u) Supply of Group SPTA set.
- v) Supply of Documentation.
- w) Proposal plan for Technical Assistance for System installation including STW, HATs and SATs.
- x) Proposed Factory Acceptance Tests.
- y) Reliability parameters.
- z) Proposed quality assurance and quality Inspection plan.
- aa) System Integration and interface Plan.
- bb) Schedule of delivery of prelaunch items (transducers, Gyro alignment plate etc), cable and other equipment to be decided during Preliminary Design Review meeting.
- cc) Sufficiency clause: All the deliverables supplied with the equipment shall be sufficient for the satisfactory operation of the system. If any additional item required thereafter for satisfactory operation of the system as described in the tender will be supplied by the firm with no cost implications.
- dd) OEM should organise supply of materials and deputation of their reps for connectorisation, installation, STW, HATs & SATs for ships being built at MDL concurrently without affecting the construction schedule of the ship.

52. **Technical Offer as Per Shipyard Tender:** Technical part of the offer with respect to the equipment and its associated auxiliaries/components/controls, to be submitted by the equipment supplier in comprehensive, systematic and structured manner, as per the requirements mentioned in this document, including the following (but not limited to):

- a) Equipment specifications.
- b) Equipment performance data
- c) Characteristics data, curves, efficiency, etc., related to equipment performance
- d) Outline general arrangement drawings of equipment with footprint, main dimensions, weights and mounting arrangement, with recommended maintenance space.
- e) Requirement of Ship services (Power rating, Sea/Fresh water, Compressed Air etc.)
- f) Associated support systems specifications and drawings.
- g) Interface requirements.
- h) Relevant drawings with all views and maintenance envelopes.
- i) Control and monitoring system along with complete list of sensors and instrumentation (in structured manner).
- j) Mounting data/details and characteristics

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- k) Structure borne and airborne noise performance levels (in graphical & digital format).
- l) Comprehensive list of binding design documentation in structured manner along with time schedule for submission.
- m) Associated electrical equipment specifications and drawings.
- n) Recommended list of installation & commissioning Consumables, onboard spares, base & depot spares, special tools, test equipment, etc., in systematic manner.
- o) Indigenization plan, work-share, MOU / Definitive Agreement / License agreement, technology transfer, product support, etc.; as applicable.
- p) Training plan
- q) Preliminary quality assurance and test plan. (QAP)
- r) Compliance matrix (Para-wise compliance to tender specifications).
- s) Complete Weight breakdown for major components (excluding & including oil).
- t) Requirement of Greases, Oils etc., with their Indian equivalents.
- u) Proposed plan for technical assistance for installation, preservation and commissioning, trials, etc.
- v) List of main and auxiliary equipment included in the standard scope of supply with NCN (NATO Code Nos.)
- w) List of items required for auxiliary systems (shipboard systems), which are essentially, be fitted for proper functioning of main equipment with NCN. Also indicate any of them, which are not supplied along with main equipment.
- x) List of Instrumentation & Diagram.
- y) Clear demarcation between the scope of supply of firm and that of the yard.
- z) Trial and commissioning time of complete system on board.
- aa) Delivery time from receipt of order.
- bb) List of special tools, instruments, jigs & fixtures & facilities required for lifting, transporting, aligning, installing and commissioning of main equipment and their auxiliaries.
- cc) Type approval/class approval
- dd) The specification relates to design, manufacture, supply & commissioning of System / equipment to be used in Indian Coast Guard Ship.
- ee) Manufactures may be guided by this document to ensure that their products meet the standards of Installation on Indian coast guard ship.
- ff) The drawing & dimensions are for reference purpose only. Vendor to design the equipment based on technical data supplied.
- gg) The offer should be strictly conforming to the details indicated in this specification and in the relevant specifications / drawings / documents (All Latest Issues are to be followed).
- hh) No omission in the Specifications shall relieve the supplier of his responsibility to ascertain these requirements to perform work & furnish material in accordance with codes specified.
- ii) The offer should be complete with all relevant details such as Detailed Technical Specification, Material Specification, Overall Dimensions, Maintenance requirement, Foundation / Installation / Bolting, Storage/ Preservation Details, supported by drawings/documents/data sheets etc.
- jj) Any clarification required regarding Technical Specification / Requisition should be sought before submission of the offer.

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kk) Four copies of technical offer shall be submitted by equipment supplier; in hard and soft form (CD-ROM).


53. Type Approval:-Type approved/class approved by IACS authority equipment to be offered by the Vendor.

54. Certificate of Conformity:- The offer should be complete with CERTIFICATE OF CONFORMITY as per format detailed at Annexure.

The offer received without the “Certificate of Conformity”, duly filled in and signed, may not be considered.

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Compliance Matrix					
EQUIPMENT DESCRIPTION:				EQUIPMENT NO. :	
The form shall be completed by Supplier & shall be supplied along with the equipment.					
SUPPLIER'S NAME			Ref. No.		Drg.
ADDRESS			Part No.		
TELEPHONE NO.			EQPT. NO.		
ORDER NO.					
S No.	Tender Specifications Para reference	Brief Description as per Relevant Tender Specifications	Compliance to Tender Specifications	Deviations if any, with Reasons	Remarks if any
SUPPLIER'S SEAL			COMPANY		SUPPLIER'S SIGNATURE & DATE

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APPENDIX- 2.

CERTIFICATE OF CONFORMITY

(To be filled in by the **SUPPLIER** & submitted as part of the Offer)

M/s. _____

With reference to the subject **Requisition** received along with the MDL Inquiry and our QUOTATION No. _____ Dated _____ we hereby confirm / clarify the following:

1. **REGISTRATION WITH DQA (WP) / DQA (N) / MDL:**
 We are NOT Registered / already REGISTERED (*) with _____ for manufacture and supply of following items
 (a) _____
 (b) _____

2. **PAST PERFORMANCE:**
 We have NOT Supplied / have SUPPLIED (*) identical / similar (*) ITEM to MDL in the past. The relevant Order references are given below :
 (a) _____
 (b) _____

3. **REQUISITION / DRAWINGS / SPECIFICATIONS / SOR:**
 We ARE NOT / ARE (*) fully aware of the relevant Drawings / Specifications / TSP etc. indicated in the REQUISITION and the related Documents.

4. **DEVIATION:**
 The OFFER is fully in compliance with the Requisition WITHOUT any deviation / EXCEPT for the deviations listed in the attached format (*).

5. **BINDING DATA:**
 OUR Drawings with necessary BINDING DATA such as Overall Dimensions, SEATING Details / Bolting Plan, Connection / Interface Details, Face to Face Dimensions is ENCLOSED / NOT Enclosed (*) with the offer. We have noted that any change in Binding Data shall require specific approval from MDL/IHQ of MoD (N).

6. **DOCUMENTS / DATA:**
 The following Technical Documents / DATA SHEETS are enclosed herewith
 (a) (To be specified if applicable)

For M/s. _____

Signature: _____ Date : _____

Stamp:

(*) Strike out which is **NOT APPLICABLE**.

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APPENDIX-5.

TABLE-1 FORMAT FOR PROVIDING DIMENSIONAL DETAILS

SR NO	DEVICE	DIMENSIONS (WXHxD)	Wt IN KG	HEAT DATA	DISSIPATION	POWER CONSUMPTION



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APPENDIX- 6.

WEIGHT CONTROL DATA SHEET

EQUIPMENT DESCRIPTION

EQUIPMENT NO.

COMPARTMENT (IF KNOWN)

LOCATION (IF KNOWN)

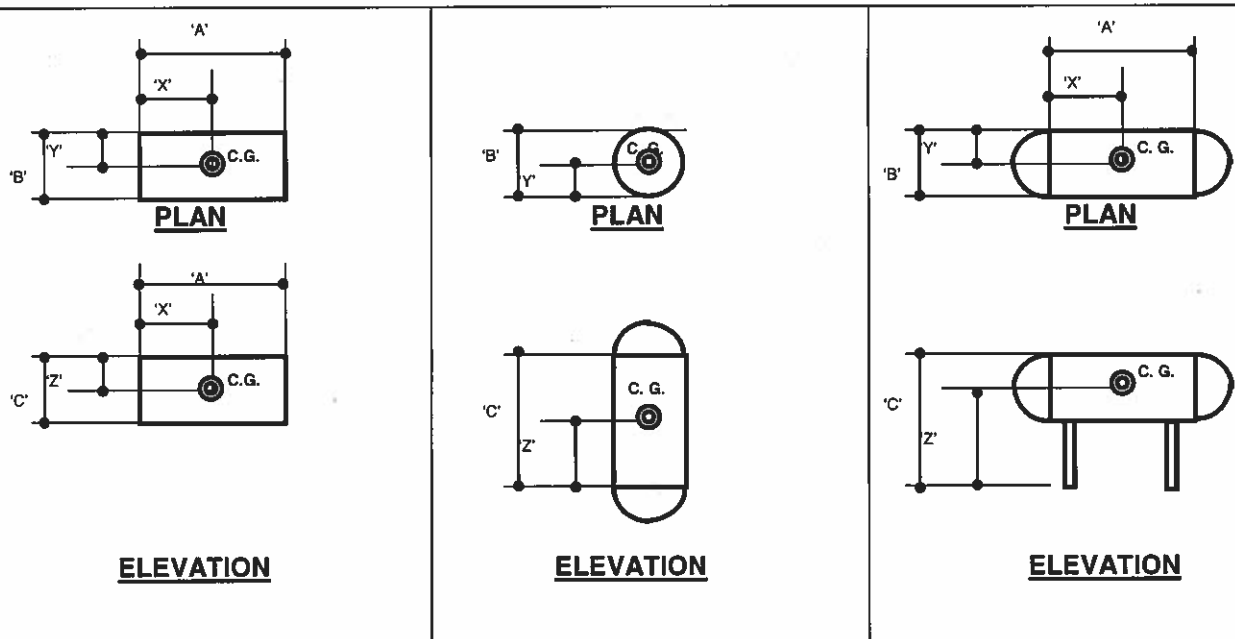
SWBD :

TOLERANCE ESTIMATE
 PRELIMINARY (CALC)
 DESIGN EST.
 M.T.O (CALC)
 WEIGHED ±%
 TOLERANCE CODE

1. WEIGHT (Kg.)

(a)	DRY	Kg ±	%
(b)	FLUID	Kg ±	%
(c)	OPERATING	Kg ±	%
(d)	TEST	Kg ±	%
(e)	TOTAL	Kg ±	%

2. EQUIPMENT DIMENSIONAL DATA (mm) & Co-ordinates of CoG



OVERALL SIZE		CENTRE OF GRAVITY	
'A'(LENGTH)		'X'	
'B'(BREADTH)		'Y'	
'C'(HEIGHT)		'Z'	

NOTE :

- ALL OFFERS SHALL INCLUDE THIS DATA SHEET DULY FILLED IN BY THE SUPPLIER (SIGNED, DATED & SEAL AFFIXED).
- ALL FINISHED ITEMS SHALL BE WEIGHED & A CERTIFICATE SHALL BE PROVIDED AS PER ATTACHED SHEET.
- SEPARATE SHEETS SHALL BE COMPLETED FOR EACH INSTALLED EQUIPMENT.
- ORIGIN OF 'X', 'Y' AND 'Z' TO BE INDICIATED.

SUPPLIER'S SEAL

SUPPLIER'S SIGNATURE & DATE



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APPENDIX - 7.

WEIGHT CERTIFICATE

EQUIPMENT DESCRIPTION:

EQUIPMENT NO. :

The form shall be completed by Supplier & shall be supplied along with the equipment.

SUPPLIER'S NAME

ADDRESS

TELEPHONE NO.

ORDER NO.

Ref. Drg. No.

Part No.

EQPT. NO.

METHOD OF WEIGHING:

Supplier shall prescribe Method & Equipment Used:

DATE OF LAST CALIBRATION

**SPECIFIED
REQUIREMENT**

ACCURACY

NOTE :-

RESULT OF WEIGHING TOTAL EQUIPMENT DRY WEIGHT

(Excluding packing, temporary protection etc.)

ALLOCATED WEIGHT

(Weight estimate agreed by purchaser
and supplier based on order specs).

REASONS FOR VARIATION BETWEEN ALLOCATED WEIGHT AND CERTIFIED WEIGHT:

WEIGHING ADDRESS:

**WITNESSED BY
FOR SUPPLIER**

Representative


FOR PURCHASER

Representative

Date:

Signature / Date & Seal


Signature/Date & Seal

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APPENDIX-8.

TABLE OF CONNECTIONS FORMAT

SR NO	CABLE NO	CABLE TYPE	NO: OF CORES	FROM DEVICE	CONN REF	TERMINAL / PIN NO	TO DEVICE	CONN REF	TERMINAL / PIN NO	SIGNAL
1	CAB-1	XXX 3 CORE CABLE	1	DEV-A	P1	1	DEV-B	J1	1	
			2			2			2	
			3			3			3	


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Appendix-9
TIMELINES FOR TASKS AND DELIVERABLES (DURATIONS) FOR
ECHO SOUNDER SYSTEM

FOR MDL				
	Activity	Yard 16101		
		From	To	Duration (Months)
	Placement of order	P		
1	Binding Data	P	P+1	01
2	QAP	P	P+2	01
3	Manufacturing Drawing	P	P+1	01
4	FAT & Certification	E-3	E-1	02
5	Equipment Supply	E		
6	Documentation	E		
7	Preservation	E	E+12	12
	(a) In Stores OR	E	E+12	12
	(b) On- board	E	E+12	12
8	Services of Engineers			
	(a) Installation	E	E+ 6	06
	(b) STW	E+ 6	E+ 12	06
	(c) HATs	E+ 12	E+ 13	01
	(d) SATs	E+ 13	E+ 14*	01
	(e) For Routines	NA	NA	NA
	(f) Training	E+ 13	D*	02*
9	OBS for three years	E	NA	NA
10	Warranty	E+20 or D+12 whichever is later		
11	B&D Spares	D-6	D-3	03

* - These end dates will be indicated as calendar dates in the Purchase Order.

P- Placement of Purchase Order, E- Equipment Delivery, D- Planned Delivery

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Appendix-10

MANUFACTURER'S RECOMMENDED LIST OF SPARES TOOLS AND SOFTWARE (MRL-OBS)

VESSEL/ EQUIPMENT: 01 TRAINING SHIP

S r N o	Eqpt Part No./ Model no./SI No.	Eqpt Descripti on	OEM Name	Vend or Name	Illustrated Spare Part List (ISPL) Reference/ Part No. of	Desc of Spare	Count ry of Origin	Unit Pric e	Seller Order No. & Date	Curre ncy Code	Tot al Qty	V E D* C at eg or y	Reco mme nded scale for 01 Traini ng Ship	Re mar ks

MANUFACTURER'S RECOMMENDED LIST OF SPARES (MRL-B&D)

VESSEL/ EQUIPMENT: 01 TRAINING SHIP

S e r N o	Eqpt Part No./ Model no./SI No.	Eqpt Descripti on	OEM Name	Vend or Name	Illustrated Spare Part List (ISPL) Reference/ Part No. of Spare	Desc of Spare	Count ry of Origin	Unit Pric e	Seller Order No. & Date	Curre ncy Code	Tot al Qty	V E D* C at eg or y	Reco mme nded scale for 01 Traini ng Ship	Re mar ks

*VED- VITAL / ESSENTIAL/ DESIRABLE analysis of spares to be carried out by OEM prior to submission to the Buyer.

Original Equipment Manufacturer (OEM): _____ (Complete Address)

1. Data regarding maintenance spares/stores like lubricants, sealing compound, gases should be given separately giving source of supply.
2. Data furnished as OBD and B&D should also include software backups, as applicable
3. In "Remarks" column following information (if applicable) be given:-
 - a) If an item has a shelf/operational life it be marked as 'G' and life be indicated
 - b) Matching set of components be indicated.
 - c) Item which can be locally manufactured in India should be marked 'LM'.
 - d) Items which cannot be manufactured in India due to sophisticated design/ technology may be marked as 'SI' (Special Item).
 - e) If a component/assembly is common to other similar equipment offered by the OEM earlier, these should be marked 'CM' and Name of the equipment be indicated.
4. OBS and B&D spares list should be drawn out of the 'Part List' of the equipment, which should be separately given as part of Technical Manuals.
5. If the main equipment consists of other equipment, then OBS and B&D spares list should be prepared for them under proper heads. OBS and B&D spares list is to be prepared as per the maintenance concept of the customer.



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6. Items provided along with the equipment as spares should also be included in OBS and B&D list
7. Modules/ Shop Replaceable Unit (SRU) / assemblies should be listed and their components should be included under them so as to relate each item of spare to their module / SRO / assembly.
8. OBS and B&D list for test equipment should also be provided on the similar format.
9. Cost to be indicated in Price bid only.

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Appendix-11

Checklist with offer:

- 1) The supplier to supply as a minimum the following information along with his technical offer:
- 2) Technical Specification of the equipment's.
- 3) Details of all connections to equipment, Vibration details with pattern no, seat details, flange details etc.
- 4) GA drawing of all equipment's, sub-assemblies & accessories.
- 5) Technical parameters/Specification of all equipment & accessories.
- 6) Outline drawings of the equipment indicating overall dimensions, C.G. and Maintenance envelope.
- 7) Compliance Matrix as indicated in TSP/SOTR
- 8) Deviation List as indicated in TSP/SOTR
- 9) Heat dissipation of the Equipment
- 10) All Annexures attached in the TSP/SOTR to be submitted.
- 11) Tools required for maintenance.
- 12) Recommended onboard and base spares holding (for 2 year and 5 years operation respectively)
- 13) Manufacturers list of spares for installation & Commissioning.
- 14) Instrumentation List & Diagram.
- 15) Brief on integration of System with other ships installed systems.
- 16) Inter-unit cabling diagram clearly indicating each unit/sub-unit and types of cables being used for the system.
- 17) Proposed factory tests and Inspection plan.
- 19) Proposed preservation plan.
- 20) Delivery time from receipt of order.
- 23) Special tools and test equipment to be supplied for on board maintenance.
- 25) List of main equipment included in the standard scope of supply.
- 26) List of accessories inclusive / not inclusive in the standard scope of supply.
- 27) Reliability parameters.
- 29) Class approval/Type approval certificates for each equipment to be submitted.