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HY/PP/1144/RFI

09 Oct 17

REQUEST FOR INFORMATION (RFI) INDIGENOUS CONSTRUCTION OF SURVEY VESSELS

1. The Ministry of Defence, Government of India, intends to construct **Five Survey Vessels** indigenously for undertaking coastal and deep-water hydrographic and oceanographic surveys by the hydrographic department of the *Indian Navy (IN)*.
2. This Request for Information (RFI) consists of two parts as indicated below :-
 - (a) **Part I**. The first part of the RFI incorporates operational characteristics and features of the vessels along with the list of crucial/major equipment package (including hydrographic equipment suite).
 - (b) **Part II**. The second part of the RFI states the methodology of seeking response of the ship builders. Submission of incomplete response format will render the ship builder liable for rejection.

PART - I

3. **The Intended Use of Equipment (Operational Requirements)**. The **Survey Vessels** would be deployed for coastal/ deep-water hydrographic and oceanographic surveys by the hydrographic department of the *Indian Navy*.
4. **Important Parameters**.
 - (a) **Design**. The shipbuilder is required to design and build the ship in accordance with the broad specifications placed at **Enclosure 1**. Further, details of Survey Vessels that have been designed /built by your shipyard, if any, are also to be forwarded along with technical and operational specifications, including maximum speeds achieved, of the vessels. The design should be contemporary, meet International Standards and should have due approval of Classification Society. The relevant Class Notation is also to be provided. Suggestions/comments for building the ship to any Classification Society rules and the advantages thereof may also be indicated. All requisite design details, model testing, timelines date, relevant calculations etc will be vetted by IHQ MoD (Navy). Vendor may also utilise this opportunity to recommend capabilities proposed in terms of equipment parameters and essential parameters is in accordance with para 10 of Chapter II of DPP-2016 as input for Staff Qualitative Requirements (SQRs).

(b) **Construction**. The indigenous construction must be undertaken employing contemporary technique allowing for integrated construction to derive benefits of high degree of pre- outfitting at block level.

(c) **Equipment Vendors**. IHQ MoD (Navy) will provide a preferred list of vendors from whom the major equipment is to be sourced for the Survey Vessel. The Shipbuilder may guide the equipment supplier to configure/modularise their equipment and systems to suit integrated, pre-outfitted construction and also to allow for easier upgrades and faster replacement/ repair while in service.

(d) **Payment Terms**. All terms and conditions of the Contract will be in accordance with the Defence Procurement Procedure (DPP-2016) in force, which is available on the Ministry of Defence website www.mod.nic.in. The Shipbuilder is also to confirm whether:-

(i) The Shipbuilder would be able to comply with all the provisions of **Defence Procurement Procedure (DPP) 2016** available on the Ministry of Defence website. If not, which Para/Clause of DPP would not be agreed to with reasons.

(ii) The terms of payment as per DPP are acceptable.

(iii) The approximate price submitted by you should be in Indian Rupees and the Foreign Exchange (FE) component should be clearly mentioned (as percentage of the total cost).

(iv) Willingness to conclude comprehensive maintenance/ product support package including training of personnel for the hydrographic equipment with the OEM/ OEM authorised representative in India for atleast 10 years from the date of expiry of warranty/ one year after commissioning of the equipment whichever is earlier. The approximate cost estimation for comprehensive maintenance of hydrographic equipment may be included in the budgetary cost.

(e) The following information is required from the Shipbuilder :-

(i) Proposed time frame for construction and delivery of the vessel, according to enclosed specifications, after conclusion of contract.

(ii) Time Frame for construction of any other Survey Vessels, built/ designed by your shipyard in the past, may also be indicated.

(iii) Approximate cost estimation excluding tax/custom duty component.

(iv) Envisaged Indigenous Content (IC) likely to be achieved for the ship.

- (v) Proposed Build strategy.
- (vi) Additional details as deemed appropriate.
- (vii) Willingness for Option Clause, including the duration for which the option clause would be valid.
- (viii) Vendor may consider RFI as advance information to obtain requisite Government Clearance for import of any hydrographic equipment, ship equipment and machinery etc.

5. The ship builder should also confirm the acceptability of the following conditions of the contract :-

- (a) The solicitation of offers will be as per '**Single Stage-Two Bid System**'. It would imply that a 'Request for Proposal' would be issued soliciting the technical and commercial offers together, but in two separate sealed envelopes. The validity of commercial offers would be atleast 18 months from the date of submission of offers.
- (b) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.
- (c) All equipment/ system/ components which are not already in use in the Indian Navy, would be put through Field Evaluation Trials (FET) on a 'No Cost No Commitment' (NC-NC) basis. A Staff Evaluation would be carried out by SHQ to analyse the result of Field Evaluation Trials and shortlist the equipment for introduction into service. The shipbuilder/sub-contractor is to indicate willingness/ modalities/ location for the same.
- (d) Amongst the vendors cleared by Staff Evaluation, a Commercial Negotiation Committee would decide the lowest cost bidder (L1) and conclude the appropriate contract.
- (e) Shipbuilder would be bound to provide product support for time period specified in the RFP, which includes spares and maintenance tools/ jigs/ fixtures for field and component level repairs.
- (f) The ship builder would be required to accept the general conditions of contract given in the Standard Contract Document at **Chapter VI** of **DPP2016** available on the Ministry of Defence website www.mod.nic.in.
- (g) **Integrity Pact**. An integrity pact along with appropriate Bank Guarantee is a mandatory requirement as per **Annexure I to Appendix Mof Schedule I of Chapter II of DPP 2016**.
- (h) **Performance-cum-Warranty Bond**. A Performance-cum-Warranty Bond equal to 5% value of the contract in the form of Bank Guarantee is required to be submitted after signing of contract.

PART II**6. Procedure for Response.**

(a) Ship builders must fill the form of response as given in Appendix B to Chapter II of DPP 2016 (**Enclosure 2**). Apart from filling details about company, details about the exact product meeting our generic technical specifications should also be carefully filled. Additional literature on the product can also be attached with the form.

(b) The filled form along with the information sought should be dispatched at under mentioned address: -

The Principal Director of Hydrography
Directorate of Hydrography
West Block IV, Wing V
RK Puram
New Delhi 110066 (India)
Fax : +91-11-26181834
Email : doh@navy.gov.in

(c) Last date of acceptance of filled form is 04 Dec 17. The vendors short listed for issue of RFP would be intimated.

7. The Government of India invites responses to this request only from reputed indigenous ship builders. The end user of the vessel is the *Indian Navy*.

8. This information is being issued with no financial commitment and the Ministry of Defence reserves the right to change or vary any part thereof at any stage. The Government of India also reserves the right to withdraw RFI or RFP, should it be so necessary, at any stage.

9. The acquisition process would be carried out under the provisions of DPP 2016.

Yours sincerely,

Enclosure 1

(Refers to Para 4 of IHQ/MoD(N)
HY/PP/1144/RFI dated 09 Oct 17)

BROAD SPECIFICATIONS – FIVE SURVEY VESSELS
(INDIGENOUS CONSTRUCTION)

SECTION – A

SINGLE SHEET SPECIFICATIONS

Role	Full scale coastal and deep-water Hydrographic Survey capability of Ports and Harbours, Approaches and determination of Navigational channels/ routes. In addition, surveys of maritime limits up to EEZ/ extended continental shelf.
Crew	15Officers and 180 Sailors
Length	New design
Beam	New design
Draught	Not more than 4.50 m (at Standard displacement)
Tonnage	2700 tons – 3000 tons
Propulsion	Twin shaft CODAD
Max Speed	NLT 18 knots (at 85% MCR)
Cruising Speed	16 knots
Eco Speed	12-14 knots
Mission duration	60 days
Endurance at 14 Knots	6500 NM
ASW	Demolition Stores
CIWS	One 30 mm Naval Surface Gun (NSG) with Electro Optical Fire Control System(EOFCS)
Radar	Two 'I' band COTS navigation radars
IFF	IFF Mk XII (S) Transponder or an upgraded version
Data Link	LINK II MOD III or an upgraded version
Aviation	Capable of operating one Advanced Light Helicopter/ Naval Utility Helicopter (ALH)/ (NUH) (with retractable hangar)

SECTION – B**GENERAL**1. **Roles And Capabilities.**(a) **Primary Role.**

(i) Full scale coastal and deep-water Hydrographic Survey capability of Ports and Harbours, Approaches and determination of Navigational channels/routes. In addition, surveys of maritime limits up to EEZ / extended continental shelf.

(ii) Conduct of limited oceanographic surveys for defence applications.

(b) **Secondary Role.**

(i) To perform limited defence role in an emergency [suitable arrangements for installation of One 30 mm Naval Surface Gun (NSG) with Electro Optical Fire Control System (EOFCS) or as indicated by Indian Navy].

(ii) Limited search and rescue capability.

(iii) Hospital ship/casualty holding Ship.

(c) **General Remarks.**

(i) Should be built as per Classification society rules and regulations for the construction and classification of naval ships with an expected life of 35 years.

(ii) Should adhere to latest MARPOL standards of pollution control.

(iii) All machinery, sensors and equipment should have maximum reliability and maintainability for a mission time of eight weeks at a stretch.

(iv) Should conform to MEPC 159/55 regulations or latest for ballast water, sewage, galley waste, garbage disposal etc.

(v) Should primarily incorporate COTS technology.

(vi) Should be constructed with sufficient redundancy to reduce requirement of manpower manning.

2. **Limiting Dimensions.** Draught not more than 4.5 m (at standard displacement).
3. **Tonnage.** Approximately 2700 tons - 3300 tons, at standard displacement.
4. **Hull.** Single hull construction of a proven design; made of welded steel of DMR 249A with steel superstructure of DMR 249A.
5. **Mission Duration.** 60 days.
6. **Endurance.** 6500 NM at economical speed with 25% reserve fuel capacity.
7. **Speed.**
 - (a) Maximum : Not less than 18 knots (at 85% MCR).
 - (b) Economical : 12-14 knots.
 - (c) Cruising speed : 16 knots
 - (d) Operating Profile :
 - (i) 0-6 knots : 30% of time.
 - (ii) 6-10 Knots : 20 % of time
 - (iii) 10-14 knots : 40% of time.
 - (iv) 14-16 knots : 10% of time.
 - (v) Operating Hours : 4500 hrs pa
 - (e) Capable of operating at slow speeds of 0 to 6 knots for prolonged duration (about 12 hours at a stretch).
8. **Aircraft.** The ship should be capable of operating one Advanced Light Helicopter/ Naval Utility Helicopter (ALH)/ (NUH) (with retractable hangar). Retractable Hangar for the full stowage of the aircraft. Flight deck should be capable of sustained operations of the helicopter of atleast 6 tons weight.
9. **Crew Strength and Accommodation.**
 - (a) CO + 14 Officers.
 - (b) 180 Sailors.
10. **Propulsion System.**
 - (a) The propulsion system should consist of twin-shaft arrangement, each shaft driven by one Marine Engine driving a FPP/ CPP through a reversible reduction gearbox. Auxiliary Propulsion consisting of Stern Thrusters is to be provided to cater for prolonged slow speed operation of the vessel to avoid under loading of main diesel engines and enable better manoeuvrability. Bow Thrusters are to be provided. The propulsion machinery is to be designed to meet the specified operating profile of the ship as specified.

(b) **Control**. An Integrated Platform Management System (IPMS) should be provided having dual redundant Gigabit Ethernet network distributed architecture system (VME 64 standard) covering the ship machinery and systems.

(c) Facility in all machinery compartments for monitoring all vital parameters from the bridge.

(d) Bow and stern thrusters.

11. **Seaworthiness**.

(a) Operational seaworthiness up to Sea State 5.

(b) Transit on all headings up to Sea state 7.

(c) Ability to survive on best heading up to Sea state 8.

(d) Helo operations on upto Sea state 4 in all headings and Sea State 5 at best heading.

12. **Stabilisers**. The ship is to be provided with active stabiliser system to ensure optimum utilisation of weapons, sensors, aviation facilities as well as operational and habitability criteria of the ship along with reduction of the heavy rolling of the ship.

13. **Operating Conditions**.

(a) Ambient temperature up to +41°C (Dry bulb).

(b) Water temperature up to +40°C.

(c) Relative Humidity of up to 90% at 32°C and Salinity of water of upto 35000 ppm.

(d) Sea Way Conditions:-

(i) Roll : Max 20° with 10 sec period.

(ii) Pitch : Max 6° with 20 sec period.

(iii) List : Max 20° from vertical.

(iv) Trim : Max 5°

14. **COTS technology**. COTS policy to be adopted in maximum possible areas of the vessel.

15. **Ergonomics**. Latest modular concepts with respect to ergonomics and crew comfort to be adopted.

16. **Inter-docking Period and Ops-cum-Refit Cycle**. An inter-docking period of five years to be catered. The ship should have an operational cycle of 36 months.

17. **Hydrographic Equipment.** The list of main hydrographic equipment and systems is placed at **Appendix A**. The hydrographic equipment includes the following:-

- (a) **Auxiliary Equipment.** The list of auxiliary equipment to support main equipment will be provided.
- (b) **Drawing Instruments.** The list of drawing instruments will be provided.
- (c) **Miscellaneous Hydrographic Stores and Publications.** The list of miscellaneous hydrographic stores will be provided.
- (d) **Onboard Spares (OBS).** Onboard spares for all hydrographic equipment (main & auxiliary) for two years to be supplied.
- (e) **Subscription.** Lifetime licenses for all software to be provided. Subscription associated with hydrographic software suites in equipment including subscription for Satellite Based Augmentation System (SBAS) satellite signal of Differential Global Positioning System (DGPS) to be included for not less than 10 years.

18. **Air Conditioning.** Air Conditioning to be as per Def Stan 02-102, Issue 3. AC plants to cater for required load plus 50% reserve capacity.

19. **Power Supply.** Main supply of 415V 3 Phase 50 Hz 3 wire floating neutral with a lighting supply of 230V 1 Phase 50 Hz with 100% reserve. Emergency 24V DC from battery banks.

20. **Training.** Mandatory training to be imparted to the ship's crew and maintainers, by the OEM/ OEM Reps/ Shipyard, for the operation and maintenance of machinery and equipment installed onboard in consultation with **IN**. The ship's crew and shore maintenance staff and staff of training schools will be trained at the Shipyards / OEM's premises / onboard (as applicable) on the operation and maintenance of hull, machinery and equipment installed onboard. Shipyard will arrange for such training by OEM reps prior to delivery of the vessel. The training schedule will be prepared in consultation with IHQ of MOD (N) well in advance. The cost of the training will be borne by the shipbuilder. The training program will include the following:-

- (a) Introductory training by OEM reps at factory premises for each of the ships. This is required to provide the necessary focus to the end-users by giving them necessary input with regard to operation, maintenance, and fabrication process and repair methodology.
- (b) The shipbuilder will further provide operator, user and maintainer training to the crew on-board at the yard with OEM's assistance during System Commissioning within the time frame of commissioning requirement. Repair methodologies are to be part of the training.
- (c) Training aids comprising of cut section models, audio – visual / CBT packages (on operation, maintenance and repair activities) are to be provided for hull, all import machinery, equipment and system.

(d) The proposed training calendar clearly bringing out the duration of training and the number of personnel (ship's crew and shore maintenance staff) will be submitted along with the Build Specification.

21. **First Outfit of Naval Stores.** Stores required on board for carrying out day-to-day maintenance. List of First Outfit of Stores will be indicated subsequently which are required to be provided by the ship builder.

22. **Labour Saving Device.** Labour saving devices/ equipment/ tools are to be provided to the ship as per *IN* policy in vogue.

23. **Underway Replenishment (UNREP).** UNREP as per DefStan 07-279. 600 TPH Dual probe system should be catered for.

24. **Anchor Chain Cable.** Anchor Chain cable and accessories should be in accordance with Naval Constructors Document (NCD) 3909.

25. **Waste Disposal.** Suitable Garbage Disposal Unit for disposal of solid garbage shall be provisioned as per MARPOL Regulations – Annex V and MARPOL Regulation MEPC 76(40), MEPC 93(45) and MARPOL Annexure VI for exhaust requirements.

26. **On Board Spares (OBS).** Spares required for undertaking running hour based/ periodic maintenance/ rectification of defects, which if not immediately available might impair the operational efficiency of the ship or operational availability of critical equipment, are to be provided. These spares include jobs within the ship staff capability as well as those undertaken with yard assistance. Data of these spares to be provided in Integrated Logistics Management System (ILMS) format. This should also include certain critical spares to meet action damage requirements. It is to be noted that besides equipment/machinery, OBS is to be supplied also for yard items such as valves, compensators and other system fittings considering operational cycle of two years.

27. **Base & Depot Spares (B&D).** Offers for OEM recommended B&D Spares (for 05 years exploitation of equipment) are to be submitted for ranging and scaling by ship-builder as per format. The list should include complete Part Identification List (PIL)/ Comprehensive Parts List (CPL) for the equipment to aid in Ranging and Scaling.

28. **Documentation.** Documentation for all equipment will be supplied by shipyard/vendors in IETM Level 4 format or upgraded version.

29. **Accounting.** The vessel should be 'Self-accounting' type.

30. **Special Features.**

(a) Two Survey Motor Boats (SMB's) of approx length 11.0 m and two SMB's of approx. length 9.0 m. The broad specifications of the SMBs 9.0 m and 11.0 m are placed at **Appendix B and C** respectively. All four SMB's to be hoisted by a suitably located Centreline Crane with a provision of stowage on

the deck. The crane should be telescopic / retractable with a minimum outreach of 5m beyond the ship side. The Safe Working Load (SWL) of the centreline crane for lowering and hoisting of SMB's should be at least 10 tonnes at maximum outreach.

(b) Two 7.3m RIB as Sea Boat with its own single-arm davit for hoisting/lowering capable of being hoisted and lowered at slow speeds and re-configurable for Low Intensity Maritime Operation (LIMO) role with provision for fitting LMG/MMG.

(c) Two inflatable Gemini's with OBM.

(d) One Diesel MUV/ SUV(air-conditioned) and One Diesel pick-up van for transportation of equipment/stores, two each trailer and water carriers (1000 litre capacity), a telescopic crane, capable of lifting 3 tons and with an arm length extending five (05) metres beyond the ship side, for lifting jeep is to be fitted onboard.

(e) Two motorcycles, one lister (battery-driven trolley) and seven bicycles.

(f) Quarterdeck below the helodeck for oceanographic/hydrographic evolutions and field trials of new induction equipment in addition to the below-mentioned:-

(i) Installation of winches for the portable survey equipment like Side Scan Sonars, Remotely Operated Vehicle (ROV).

(ii) Arrangements for tow aft.

(iii) Space for Capstan, bollards and fairleads.

(iv) Adequate working area for seamanship and hydrographic survey evolutions.

(v) Stowage space ROV on the quarterdeck. The dimensions for stowage area for ROV would be approximately 2m x 1m x 1m.

(g) Bridge design should cater for bridge wings (As per *IN* policy in vogue).

(j) Oceanographic davit with 10,000m EFSWR (4mm – 6mm) cable for Sound Velocity Profiler and other oceanographic sensors at suitable location on foyle.

31. **Additional Spaces/Workshops.** The following additional air conditioned stowage spaces/ workshops are envisaged over and above the standard Naval spaces/ workshops :-

(j) Stowage space for the optical/ electronic portable survey equipment with two-tier racks on all sides and three cupboards.

(k) Stowage space for mechanical survey equipment.

- (l) Stowage space for ROV and associated equipment along with test/maintenance workshop.
- (m) Stowage space for Boat spares/ equipment along with maintenance workshop.
- (p) Stowage/ work space for survey equipment (all AC spaces) as follows:-
 - (i) Survey Instrument stores – 02
 - (ii) Oceanographic lab – 01
 - (iii) Bulk Instrument Stores – 02

32. **Rules and Regulations.** The International conventions and regulations, as listed below are to be applied:-

- (a) International Convention for Safety of Life at Sea (SOLAS).
- (b) International Convention for Prevention of Collision at Sea (COLREGS).
- (c) International Convention for Prevention of Pollution from Ships (MARPOL) along with IMO regulation MEPC 159/55.
- (d) Rules of Navigation and Tonnage Regulations for Suez and Panama Canal Authorities, including measurement.
- (e) ISO 9943 – Ventilation and Air-Treatment of Galleys and Pantries with Cooking Appliances.
- (f) International convention on Load Lines, 1966 and the International Convention on Tonnage Measurements.

Appendix A
(Refers to Para 17 of Section B)

LIST OF MAIN HYDROGRAPHIC EQUIPMENT AND SYSTEM
(SHIP AND SURVEY MOTOR BOATS)

Ser	Equipment	Qty(per ship set)	
1	Data Acquisition and Processing System[DAPS] (for ship and boats)	08	
2	Geodetic GNSS Land Survey systems	05	
3	Digital Side Scan Sonars with Data Acquisition and Processing System	03	
4	(a) Hull-mounted Multibeam System (Deep) with Data Acquisition and Processing system	01	
	(b) Portable Multibeam System (Shallow) for boats with Data Acquisition & Processing system	02	
	Both the Deep and Boat Multibeam systems are to be from the same OEM to ensure compatibility and interoperability		
5	(a) Ship	(i) Dual-frequency Singlebeam Echosounders Deep/Medium %	01
		(ii) Dual-frequency Singlebeam Echosounders Medium/Shallow %	02
	(b) Survey Motor Boat	Dual Frequency Single beam Echosounders Medium/Shallow %	04
6	Dual-frequency Singlebeam Medium/Shallow Echosounders (Portable)	02	
7	DGPS Long-range Positioning System (Subscription based Satellite corrections)(includes one monitor station/three set)	08	
8	Electronic Total Station	04	
9	Electronic Digital Level	04	
10	Water Level Meter (Radar type)	02	
11	Acoustic Doppler Current Profiler (ADCP)(Hull mount for ship and portable transducer for Survey Motor Boat) with one Data Acquisition and Processing system	01 each	
12	Current Velocity Meter (Portable)	04	
13	Remotely Operated Vehicle (ROV) with Data Acquisition and Processing system	01	
14	Conductivity Temperature and Depth (CTD) Profiler with one winch	02#	

% - Includes one Motion/Heave Sensor as appropriate for each system.

- Two CTD sensors and one winch

BROAD SPECIFICATIONS OF SURVEY MOTOR BOAT 9.0 M

1. Purpose. The Survey Motor Boat (SMB), in hydrographic surveying, is employed for collecting bathymetric, oceanographic and geo-physical data in open sea / ocean, near shore waters, creeks and in rivers. In addition, the SMB would also be employed for transfer of personnel, stores and equipment ashore by beaching.
2. Regulations/Standards. The SMB will be required to be built to latest NCD provided by IHQ-MOD (N) / DNA. All the equipment fit in the boat should be marinised.
3. Functionality. The SMB should be able to:-
 - (a) Operate upto sea state 3.
 - (b) Conduct bathymetric, oceanographic, geo-physical and beach gradient surveys in open sea / ocean, near shore waters, creeks and in rivers.
 - (c) Transfer / land personnel, stores and equipment ashore by beaching.
 - (d) Withstand sudden impacts due to occasional grounding without any compromise to the integrity of the hull, propellers, appendages and machinery.
 - (e) Carry a maximum of 15 personnel in emergency for life saving purpose.
 - (f) The SMB is required to be extremely manoeuvrable for negotiating, surf, near shore operation and other safety requirements.
4. Specifications. The broad specifications of the SMB are as follows:-
 - (a) General Description. It should conform to the following:-

(i) Construction :	Round bilge moulded GRP
(ii) Length :	9.0 m \pm 0.2 m
(iii) Beam :	2.5 m - 2.9 m
(iv) Full Load Displacement:	Not to exceed 6.0 tonnes
(v) Draught:	Not to exceed 0.8 m
(vi) Engine:	Single/Twin diesel engine with reverse transmission
(vii) Speed:	Not Less than 12 Knots for transit speed at 85% MCR 8-10 Knots for a minimum period of 15 hours
(viii) Generator:	11 KVA diesel generator providing 230 \pm 10 V 3 Phase 60 Hz AC supply

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|-------|--------------------|--|
| (ix) | Endurance: | Minimum 12 hours at 10 Knots |
| (x) | Carrying Capacity: | 5 personnel during survey tasking. 15 personnel during emergency for life saving. |
| (xi) | Air Conditioner: | Required to maintain temperature at 24° C and humidity at 65 %with ambient temperature upto 50°C and relative humidity 95% |
| (xii) | Steering: | Remote steering, hydraulic powered with capability for emergency tiller |

(b) Equipment Fit. The total weight of hydrographic equipment fit would not exceed 200 ± 25 Kgs. Some of the equipment are indicated in the hydrographic equipment list **Appendix A**. The equipment fit in the SMB will be as follows:-

- (i) Echo Sounder.
- (ii) Position Fixing System.
- (iii) Automated Data Logging System (ADLS).
- (iv) Motion Sensor.
- (v) GPS, DGPS and marine magnetic compass.
- (vi) Marine band VHF radio, Loudhailer, AIS transponder, SART beacon

(c) Layout. The SMB should be divided into four water-tight compartments viz. Fore Peak, Fore Cabin, Wheel House cum Survey Chart Room (SCR) and Engine Room.

(d) Class Coverage. The complete boat should be built under the approval of Classification Society with appropriate Class Notation/Compliance Certificate. The design of the boat should be vetted by the Classification Society for following:-

- (i) Structural strength as per Class rules to meet the functional requirement.
- (ii) Material requirements as per Class rules
- (iii) Stability and subdivision as per IMO regulations.
- (iv) Life Saving and Fire fighting as per SOLAS requirement.
- (v) Anchoring, mooring, towing, fendering and lifting arrangements as per Class rules
- (vi) Navigation, Anchoring and Mooring requirements as per COLREGS and Class.
- (vii) Electrical Installation as per Class
- (viii) Engineering machinery, propulsion, shafting and piping systems as per Class
- (ix) Main Engine as per latest MARPOL and IMO regulations on emission norms

5. Product Support. Following product support should also be provided:-
- (a) The builder must support the boat with spares and services for the life of the boat.
 - (b) The builder must provide onboard spares, maintenance and services for any system associated with the boat. List of all B & D spares with Part No. should be provided.
 - (c) One set of all the tools required should be provided
 - (d) One set of operator and maintainer documentation (IETM Level 4 or upgraded version) of all the machinery and equipment fitted in SMB.

Appendix C
(Refers to Para 30 (a) of Section B)

BROAD SPECIFICATIONS OF SURVEY MOTOR BOAT 11.0 M

1. Purpose. The Survey Motor Boat (SMB), in hydrographic surveying, is employed for collecting bathymetric, oceanographic and geo-physical data in open sea / ocean, near shore waters, creeks and in rivers. In addition, the SMB would also be employed for transfer of personnel, stores and equipment ashore.
2. Regulations/Standards. The SMB will be required to be built to latest NCD provided by IHQ-MOD (N) / DNA. All the equipment fit in the boat should be marinised.
3. Functionality. The SMB should be able to:-
 - (a) Operate upto sea state 3.
 - (b) Conduct bathymetric, oceanographic, geo-physical and beach gradient surveys in open sea / ocean, near shore waters, creeks and in rivers.
 - (c) Transfer / land personnel, stores and equipment ashore by beaching.
 - (d) Withstand sudden impacts due to occasional grounding without any compromise to the integrity of the hull, propellers, appendages and machinery.
 - (e) Carry a maximum of 30 personnel in emergency for life saving purpose.
4. Specifications. The broad specifications of the SMB are as follows:-
 - (a) General Description. It should conform to the following:-

(i) Construction:	Round Bilge moulded GRP
(ii) Length:	Not to exceed 11 m \pm 0.5 m
(iii) Beam:	3.0 m to 3.5 m
(iv) Displacement:	Approximately 8.0 to 9.0 tonnes
(v) Draught:	Not to exceed 1.3 m
(vi) Engine:	Single / Twin Diesel engine with reverse transmission
(vii) Propulsion:	Single / Twin shafts with single / twin rudders
(viii) Speed:	Maximum 12 Knots at 85% MCR 8-10 Knots for prolonged duration
(ix) Generator:	12 - 13 KVA diesel generator providing 230 \pm 10 V 3 Phase 60 Hz AC supply

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|--------|-----------------------|---|
| (x) | Endurance | 12 hours at 10 knots |
| (xi) | Fresh Water Capacity: | 100 litres in tank |
| (xii) | Carrying Capacity: | 6 personnel during survey tasking and 30 personnel during emergency for life saving |
| (xiii) | Climate Control: | Required to maintain temperature at 24° C and humidity at 65 % with ambient temperature upto 50°C and relative humidity 95% |
| (xiv) | Steering: | Remote steering, hydraulic powered with capability for manual steering. |

(b) Equipment Fit. The total weight of hydrographic equipment fit would not exceed 400 Kgs. Some of the equipment are indicated in the hydrographic equipment list at **Appendix A**. The equipment fit in the SMB will be as follows:-

- (i) Single Beam Echo Sounder (SBES).
- (ii) Multi-Beam Echo Sounder (MBES).
- (iii) Acoustic Doppler Current Profiler (ADCP).
- (iv) Digital Side Scan Sonar.
- (v) Position Fixing System.
- (vi) Data Acquisition and Processing System (DAPS).
- (vii) Motion Sensor.
- (viii) COTS Radar, GPS, Electronic Chart Display and marine magnetic compass.
- (ix) Marine band VHF radio, Loudhailer, AIS transponder, SART beacon.

(c) Layout. The SMB should be divided into four water-tight compartments as follows:-

(i) Forward Compartment. This compartment should allow for stowage of anchor chain cable and ropes. This compartment should be accessible through a water-tight manhole and hatch.

(ii) Survey Cabin. The compartment shall be fitted with arrangements for conduct of hydrographic survey. It shall have all-round visibility, clear head space, marine grade modular furniture for equipment fit, and dismountable seating arrangement for survey team. The compartment is required to be fully insulated to maintain temperature at 24° C and humidity at 65%. In addition the cabin shall have a refrigerator of 65 – 100 litres capacity, 35 litres Microwave Oven, Water Purifier of 25 litres capacity and sink. The compartment shall have an attached MARPOL compliant lavatory. All the fittings in the cabin should be of modular design made of power coated aluminum/SS metal.

(iii) Wheel House. This compartment shall be above the survey cabin with all round visibility and provision of radio communication. This cabin will contain the steering console, helmsman display with data feed from survey cabin, steering wheel and a swivel mounted chair for the boat coxswain. All the fittings in the cabin should be of modular design made of power coated aluminum/SS metal. In case, the Wheel House impedes the smooth operation of hoisting / lowering SMB from ship in sea state upto 3, then considering the safety aspects the Wheel House could be considered with Survey Cabin.

(iv) Engine Room. The Engine room shall be fitted with single /twin diesel engine capable of reverse transmission, diesel generator and other associated systems. It shall have sufficient space to monitor operation and conduct maintenance on the machinery. This compartment will be below the wheel house and quarterdeck of the boat. Access is gained into this section by one hatch from quarterdeck and one from wheel house. The compartment must be provided with forced ventilation. All machinery, equipments and fittings in the boat shall be compact and light-weight construction.

(d) Class Coverage. The complete boat should be built under the approval of Classification Society with appropriate Class Notation/Compliance Certificate. The design of the boat should be vetted by the Classification Society for following:-

- (i) Structural strength as per Class rules to meet the functional requirement.
- (ii) Material requirement as per Class rules.
- (iii) Stability and subdivision as per IMO regulations.
- (iv) Life saving and fire fighting as per SOLAS requirements.
- (v) Anchoring, mooring, towing, fendering and lifting arrangements as per Class rules.
- (vi) Navigation, Anchoring and Mooring requirements as per COLREGS and Class.
- (vii) Electrical installation as per Class.
- (viii) Engineering, machinery, propulsion, shafting and piping systems as per Class.
- (ix) Main Engine as per latest MARPOL and IMO regulations on emission norms.

5. Product Support. The product support for the boat shall be as follows:-

- (a) The builder must support the boat with spares and services for the life of the boat.
- (b) The boat builder must provide onboard spares, maintenance and services for any system associated with the boat list of all B & D spares with Part No. should be provided.
- (c) One set of all the tools required in the boat should be provided.
- (d) One set of operator and maintainer documentation (IETM Level 4 or upgraded version) of all the machinery and equipment fitted in SMB.

Enclosure 2

(Refers to Para 6 of IHQ/ MoD(N)
HY/PP/1144/RFI dated 09 Oct 17)

INFORMATION PROFORMA
(INDIAN VENDORS)

1. **Name, Address and Unique ID (if any) of the Vendor/Company/Firm.**

(Company profile, in brief, to be attached. In the eventuality of the firm emerging as L1, contract will be concluded in the name and address of the firm, as indicated here). Vendors are to undertake that any subsequent proposal for change in name of firm or address, will be intimated to IHQ MoD (N) at the first available opportunity and supporting documents be furnished accordingly within five working days of their approval by the competent authority.

2. **Type (Tick the relevant category).**

Original Equipment Manufacturer (OEM)

Yes/No

Authorised Vendor of foreign Firm

Yes/No (attach details, if yes)

Others (give specific details)

3. **Contact Details.**

Postal Address:

City : State :

Pin Code : Tele :

Fax : URL/Web Site:

Email :

4. **Local Branch/Liaison Office in Delhi (if any).**

Name & Address:

Pin code: Tel: Fax: Email:

5. **Financial Details.**

(a) Category of Industry (Large/Medium/Small Scale):

(b) Annual turnover: (in INR)

(c) Number of employees in firm:

(d) Details of manufacturing infrastructure:

(e) Earlier contracts with Indian Ministry of Defence/Government agencies:

Contract Number	Equipment	Quantity	Cost

6. Certification by Quality Assurance Organisation.

Name of Agency	Certification	Applicable from (Date & Year)	Valid till (Date & Year)

7. Details of Registration.

Agency	Registration No.	Validity (Date)	Equipment
DGS&D			
DGQA/DGAQA/DGNAI			
OFB			
DRDO			
Any other Government Agency			

8. Membership of FICCI/ASSOCHAM/CII or other Industrial Associations.

Name of Organisation:

Membership Number :

9. Equipment/Product Profile (to be submitted for each product separately).

(a) Name of Product:

(IDDM Capability be indicated against the product)(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature):

(c) Whether OEM or Integrator:

(d) Name and address of Foreign collaborator (if any):

(e) Industrial Licence Number:

(f) Indigenous component of the product (in percentage):

(g) Status (in service/design & development stage):

(h) Production capacity per annum:

(j) Countries/agencies where equipment supplied earlier (give details of quantities supplied):

(k) Estimated price of the equipment:

10. Alternatives for meeting the objectives of the equipment set forth in the RFI.

11. Any other relevant information:

12. Declaration.

(a) It is certified that the above information is true and any changes will be intimated within five (05) working days of occurrence.

(b) It is certified that design and development in indigenous and belong to the vendor _____(Vendor) and/ or _____ (its Indian Sub Vendor). The Indigenous Content in the said equipment is ____% as on date and is likely to be raised to ____% by_____ (date). The certification for the same is enclosed.

(c) It is certified that the complete set of design and production drawing are available and source code for all software applications/ programmes are also available with the _____ Vendor and that these would be produced for verification when required.

Note:- Certification for 12 (b) and (c) is required only if claiming IDDM category

(d) It is certified that in the past that _____ (name of firm) has never been banned / debarred for doing business dealings with MoD/ GoI/ any other Government organisation and that there is no inquiry going on by CBI/ ED/ any other Government agency against the firm.

Note:- Para 44 and Appendix F of Chapter II of DPP 16 may be referred.

(Authorised Signatory)