

संख्या. पी-63013/44/2021/मोड-1/सीसुबल 1776.78
भारत सरकार, गृह मंत्रालय
महानिदेशालय सीमा सुरक्षा बल
(रसद निदेशालय: आधुनिकीकरण सैल)
(Email-comdtord@bsf.nic.in)
(Fax: 011-24367683)

ब्लाक संख्या . 10,
सीजीओ काम्पलैक्स,
लोधी रोड, नई दिल्ली-03
दिनांक 15 जून 2023

सेवा में,

महानिदेशक:- आसाम राईफलस (through LOAR), केन्द्रीय ओद्योगिक सुरक्षा बल,
केन्द्रीय रिजर्व पुलिस बल, भारतीय तिब्बत बोर्डर पुलिस, सशस्त्र सीमा बल,
राष्ट्रीय सुरक्षा गार्ड एवं पुलिस अनुसन्धान एवं विकास ब्योरो

विषय: अनुमोदित गुणात्मक आवश्यकता/परीक्षण निर्देशों का प्रेषण।

तकनीकी विशेषज्ञों के उप समूह द्वारा किए गये सूत्रीकरण एवं महानिदेशक सीमा सुरक्षा बल द्वारा अनुमोदित Fast Patrol Boat (FRP Twin Engine Speed Boat) के संशोधित गुणात्मक आवश्यकता एवं परीक्षण निर्देशों को अग्रिम कार्यवाही हेतु प्रेषित किया जाता है।

संलग्न : उपरोक्तनुसार

इ.दे. सिंह

(इन्द्र देव सिंह)
उप महानिरीक्षक (रसद)

प्रतिलिपि :-

1. तकनीकी निदेशक
The Technical Director
राष्ट्रीय सूचना-विज्ञान केन्द्र, नोर्थ ब्लाक,
गृह मंत्रालय, नई दिल्ली
NIC, North Block, MHA
New Delhi (द्वारा ई-मेल)
(ई-मेल पता : mpsugandhi@nic.in) : आपसे अनुरोध है कि उक्त उपकरण के गुणात्मक आवश्यकता/परीक्षण निर्देशों को MHA website (Division of MHA+ - Police Modernization Division - Qualitative Requirements- Qualitative Requirements of Machinery & Eqpt Items with Surveillance, item) पर अपलोड करने का श्रम करें। (श्रम सप्प) 20 के स्थान पर अपलोड करें)
2. SO (IT), North Block, MHA
(Through E-mail)
(E-mail address: soit@nic.in) : कृपया उपरोक्तानुसार कार्यवाही करने का श्रम करें।
3. तकनीकी विंग, सीमा सुरक्षा बल : कृपया उक्त उपकरण के गुणात्मक आवश्यकता/परीक्षण निर्देशों को सीमा सुरक्षा बल की वैबसाईट पर अपलोड करने का श्रम करें।
4. रसद निदेशालय-जल स्कंध : आपके पत्र संख्या 434 दिनांक 12 जनवरी 2023 के सन्दर्भ में अनुमोदित Fast Patrol Boat (FRP Twin Engine Speed Boat) के संशोधित गुणात्मक आवश्यकता/परीक्षण निर्देशों को प्रेषित किया जाता है।
5. कार्यालय प्रतिलिपि

QRs & TRIAL DIRECTIVES OF FAST PATROL BOAT (FRP TWIN ENGINE SPEED BOAT)

S/ No	QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Result expected /Desired
01.	Overview	<p>The boat shall be utilized for coastal patrol and surveillance with the aim to protect area of Haraminala, Creeks of Gujarat and area between Medi & Jakhau, costal area of India and inland water including Brahmaputra river & Sunderbans Delta of Bengal. The boat shall be highly seaworthy. The boat shall have propulsion, power generation, lifesaving & other engineering and electrical systems to carry out safe and reliable operation to perform the various functions as under:-</p> <p>a) Patrol in shallow coastal waters.</p> <p>b) To carry out coordinated secure operations and Force Protection, Vessels, other crafts/boats deployed.</p> <p>c) Seaward anti-terrorist patrols for security of coastal/inland installations, own vessels and own coast line.</p> <p>d) Search and Rescue.</p>	BOO to check water trials may include operation in shallow water during day and night at users place.	Must be as per specification
02	Class	<p>Fast Patrol Boat shall be designed & constructed as per IRS rules class notation SWASTIK, SU, HSLC, RS-2 or equivalent for construction of patrol boat for operation within 12 nautical mile from coast having sea condition such that the design significant wave height of sea state-3 (the Creek/ Sundarban and Inland water of India). Boat should have 'V' shape at front planning hull with optimum dead rise angle to meet the desired speed and stability requirements. Classification society should consult user department to confirm the suitability of vessel at the area of employment of concerned origination before approval of GA drawing.</p> <p>Any GA drawing existing boat(time tested) of organization/purchaser of such kind may be corroborate to ensure the quality check to confirm the ops requirement. The builder should exhibit the final 3D model for analysis of comfortness by the owner/purchaser.</p>	BOO to examine the class certificate issued by classification society with the specified Class Notation for compliance.	Certificate should be as per requirements
03	Capacity	Fast Patrol Boat shall have a capacity of 08 people i.e. total 660 Kgs weight on board including Crew. The boat shall be fitted with two out board motors (OBMs) of sufficient Horse power to generate speed in environmental conditions mentioned below.	BOO to check with 8 people x 82.50 kgs = 660 kgs load.	Must be as per the specifications
04	Environmental Condition	<p>The equipment and the machinery fitted on the FPB should be suitable for marine applications and capable of satisfactory operation, under the following environmental conditions:-</p> <p>(a) Wind speed 10-30 knots</p> <p>(b) Ambient air temperature from zero to +50 C.</p> <p>(c) Water temperature from 01 C to 40 C.</p> <p>(d) Max relative humidity of 90% at 32 C.</p> <p>(e) Salinity of water up to 36 PPM</p>	BOO to check the condition of environment.	Environmental conditions must be as per specification mentioned in the QRs.

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S/ No	QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Result expected /Desired																				
05	General Features	<p>The boat shall be utilized for coastal patrol and surveillance with the aim to protect area of Haraminala, Creeks of Gujarat and area between Medi & Jakhau, costal area of India and inland water including Brahmaputra river & Sunderbans Delta of Bengal. The boat shall be highly seaworthy. The boat shall have propulsion, power generation, lifesaving & other engineering and electrical systems to carry out safe and reliable operation to perform the various functions as under:-</p> <p>a) Patrol in shallow coastal waters.</p> <p>b) To carry out coordinated secure operations and Force Protection, Vessels, other crafts/boats deployed.</p> <p>c) Seaward anti-terrorist patrols for security of coastal/inland installations, own vessels and own coast line.</p> <p>d) Search and Rescue.</p>	<p>a) BOO to check the capability</p> <p>b) BOO to check the running of OBM with GPS and stop watch.</p> <p>c) BOO to check the strength</p> <p>d) BOO to check the comfortness.</p>	General Features should be as per the specifications mentioned in the QRs.																				
06	Operating Profile	<p>The FPB shall conform to the following operating Profile :-</p> <table border="1"> <thead> <tr> <th>S/No</th> <th>Speed</th> <th>Nos of Hrs</th> <th>Operating Time</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>From 30 knot to 35 knots</td> <td>60 Hrs</td> <td>10% of annual exploitation</td> </tr> <tr> <td>B</td> <td>From 25knot to 30 knot</td> <td>240 Hrs</td> <td>40% of annual exploitation</td> </tr> <tr> <td>C</td> <td>From 15 knot to 25 knots</td> <td>180 Hrs</td> <td>30% of annual exploitation</td> </tr> <tr> <td>D</td> <td>From 5 knot to 15 knots</td> <td>120 HRs</td> <td>20% of annual exploitation</td> </tr> </tbody> </table>	S/No	Speed	Nos of Hrs	Operating Time	A	From 30 knot to 35 knots	60 Hrs	10% of annual exploitation	B	From 25knot to 30 knot	240 Hrs	40% of annual exploitation	C	From 15 knot to 25 knots	180 Hrs	30% of annual exploitation	D	From 5 knot to 15 knots	120 HRs	20% of annual exploitation	BOO to check the running of the boat.	Must be as per specification
S/No	Speed	Nos of Hrs	Operating Time																					
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07	Speed	<p>(a) 35 knots at sea state-2 with 02 POB including crew.</p> <p>(b) 29 knots at sea state-2 with 8 POB with personnel weapon and equipments at full load displacements.</p>	BOO to physically measure in creek water after loading the boat with 2/8 pers with all equipments @ 82.50 Kgs per person during sea trial with the help of GPS and stop watch. Speed trails need to be undertaken with and against tide /current using standard procedure.	Speed should be as per the specifications mentioned in the QRs.																				
08	Seaworthiness	The boat should have seaworthy to patrol with reduced performance in Sea State 3 and adequate stability up to Sea State 4.	BOO to check the boat in sea state 3 and 4.	Must be as per specification																				
09.	Supervision during Construction	As the boats are being built to class, these would be inspected by the Classification Society in presence of user. The Owner reserves the right to undertake additional inspections either directly or by third party. Boat builder would be required to provide all inspection facilities at yard premises to the inspecting team. Periodic reviews by the Owner would be conducted for ascertaining work progress by a team including technical member from user end.	Stage wise supervision be carried out as per owner requirement. A technical team consisting of one officer, one Inspr/SI (Wksp), Inspr/SI/HC(Master) be detailed to monitor the entire building of boat from the initial stage for confirmation design drawing as per the requirement of area of deployment to suit the Ops/ Adm requirement. Team will visit the yard in the regular interval and complete the task in addition to the assigned task at posted place.	Must be as per specification																				

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S/ No	QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Result expected /Desired
10	Life Support	Time The Shipyard is to obtain a Contractual commitment from the various equipment suppliers to provide Product Support for a minimum period of 10 years including electronics, after delivery of the last FPB. In case the equipment is likely to become obsolete, the manufacturer of boat should be committed to give a clear three year notice to the user.	BOO to confirm from boat builder.	Complied as per requirement mentioned in the QRs.
11	Dimension	Length of Hull Length incl appendages & OBM – 6.812 Mtr ± 30 cm Moulded length – 6.200 Mtr ± 30 cm	BOO to physically check with measuring steel tape in calm water and tally with approved drawings. Check lines plan and general arrangement drawings.	Must be as per specification
		Breadth – 2.409 Mtr ± 30 cm	BOO to physically check with measuring steel tape in calm water and tally with approved drawings. Check lines plan and general arrangement drawings.	Must be as per specification
		Draft Lightship draft without OBM – 0.200 Mtr (Aft) Lightship Draft without OBM – 0.400 Mtr(Fwd) Mean draft not more than 0.4 mtr with full load. Boat should have optimum dead rise angle to meet the speed & stability criteria at creek, Sea coast and inland water of India.	BOO to physically check with measuring tape after loading the boat with 8 pers with all equipments @ 82.50 Kgs per person and tally with drawings.	Must be as per specification
		Depth Hull – 1.048 Mtr	BOO to physically check with measuring tape and tally with approved drawing. Check lines plan and general arrangement drawings.	Must be as per specification
		Weight Not more than 1100 Kg (With all accessories including Batteries and all fittings except OBM & fuel) The design corresponding to the other criteria like speed, endurance, stability etc be met. The material and FRP construction to meet out the weight criteria should be followed by the boat builders to meet the class requirement.	BOO to physically check in the weighing machine as per design.	Must be as per specification
12	Compliment	08 persons including Crew along with personnel weapon and equipment i.e. total weight 660 Kgs.	BOO to physically check after loading the boat with 8 pers with all equipments @ 82.50 Kgs per person.	Must be as per specification
13	Hull	(a) The hull shall be constructed in accordance with classification society rules and shall be of single piece FRP mould with smooth mat finish scratch proof Gel coat outer finish in single mould. Hull design of Fast Patrol Boat should be identical to the existing hull design of daughter boats of Floating BOP. (As the existing FPBs of FBOP have already covered more than 15 years life against prescribed life, so that this can replace the existing one as and when required in due course). (b) Under deck includes longitudinal and transverse stiffeners and sub division bulkheads, with anti-flooding and damage control as per class requirements. (c) To have minimum draft for easy beaching and sail in shallow water. Bottom	a) BOO to physically check the hull in presence of IRS rep. It should be as per class society recommendation. b) BOO to physically check the certificate to this effect be obtained from the builder. c) BOO to physically check with measuring tape. d) BOO to physically check material	Must be as per specification

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S/ No	QRs/Technical Specification	Trial Directive/ Procedure suggested for trial	Result expected /Desired
	<p>should be strengthened for this purpose.</p> <p>(d) Glass reinforcement plastic materials used in construction of the boat with comply with following standard:- Gel coat- IRS/IACS members approved. Vinyl ester Resin - IRS/IACS members approved. CSM'E' – IRS/IACS members approved.</p> <p>e) The hull should be strengthened to resist the slamming effect of the water waves as per sea state specified in QRs.</p> <p>f) The construction of the boat should be done in controlled temperature/humidity to gain the best lamination property.</p> <p>g) Under floor buoyancy as per class requirement. Buoyancy should be air tight and hallow and sealed properly.</p> <p>(h) The hull should be strengthened as per IRS class rules for beaching on the sea shore/beds for shallow water operation.</p>	<p>type approved certificate to submit by builder.</p> <p>e) The inclining experiment of the first boat is to be carried out if applicable as per class requirement.</p> <p>f) BOO to check in prototype inspection.</p> <p>g) Certificate be obtained from class. BOO to check in prototype inspection.</p> <p>h) BOO to physically check Certificate be obtained from class.</p>	
14	Fender Boat shall have compact/good quality/ heavy duty rubber fender with suitable shape corresponding to the design all around the boat. 04 Nos. pneumatic fender to be provided.	BOO to check fender for adequacy/ location as per approved drawing & class approval certificate for materials.	Must be as per specification
15.	Accommodation a. Height adjustable seats for Helm's Master & Co-Driver, suitable hand grip shall be provided in front of co-driver and 01 wooden/FRP bench each side (i.e. port & STBD) having seating capacity of 03 persons should be provided. Front upper deck should be of aerodynamic design and side of driver and co-driver should have adequate height compatible with aerodynamic front deck so that no water ingress inside the deck while sailing of boat. b. The area below deck forward of the helm provides a storage area. c. Walk through wind screen to be provided. d. Detachable with locking system, LMG mounting post at forward deck to be provided with comfortness to the gunner. e. Provision of seat belt, hand-rails and toe grips.	(a) BOO to physically check Shock absorbing capacity of seats during speed trial. Ascertain comfortable sitting by 06 people on port & stbd site. (b), (c) & (d) To check physically by the BOO. (e) BOO to physically check hand-rails, belt and toe grips.	Must be as per specification
16	Electrical (a) Power should be sufficient to charge the battery system. (b) Battery should be placed in the boxes suitability fixed. (c) The marine application battery with sufficient power to start the OBM and operate the navigational lights and accessories.	a) BOO to check gauge. b) & (c) BOO to physically check by BOO.	Must be as per specification
17	Floor Anti-Skid floor/deck and All surfaces shall be of minimum maintenance and easy to clean. The areas of floor/deck shall have adequate handholds where ever required.	BOO to physically check as per approved plan/drawing.	Must be as per specification
18	Life Saving and fire fighting Equipment (i) 04 Nos Hazardous Duty Life Jackets as per Indian Navy Standard attached as Annexure 'I' to QRs or equivalent. (ii) Life jackets -09 Nos SOLAS approved type. (iii) Life buoy – 02 Nos SOLAS approved type. (iv) Fire extinguisher as per class approved.	i) BOO to check lay out the buoys/jackets count. ii) BOO to check class approved certificates. iii) BOO to check random testing of kit/life jackets be done to ensure functionality. iv)BOO to check pressure test certificate of firefighting	Must be as per specification

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S/ No	QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Result expected /Desired
19	Engine	<p>The FPB shall be fitted with Twin Four Stroke petrol Out Board Motors (OBM) reputed make not less than 90 HP each with suitable propeller. The FPBs shall be fitted with remote wheel with suitable hydraulic steering system, remote trimming and tilting arrangement for engine and throttle/gear controls, tachometers, engines hour-meters, engine water temperature gauges, battery meters, and boat speed indicator, oil temperature. Oil pressure meter etc. OBM should be of world reputed make/model with advanced technology. The OBM should install along with all meter and accessories as per the OEM specification and instructions as per the manual. The OBM should have service facility in India with establish network of dealer and service centre. OBM harness, gear shift cable etc should fitted upper side of the boat to avoid entries water from rear.</p> <p>Engine make and model to be provided by bidders during Technical bid.</p> <p>The Service of OBM (out boat motor) will be done by the OEM on site itself during Guarantee warranty period.</p>	<p>extinguisher.</p> <p>Engine performance to check by BOO during speed trial, functioning of all instrument panel, panel remote till & trim arrangements, start stop engine 6-8 time & specific gravity and batteries to be tested before & after engine start.</p>	<p>Must be as per specification</p>
20	Endurance	<p>The Fast Patrol Boat should have endurance of 04 to 06 Hrs of continuous operation without refueling at the speed of 25 -30 knots with full load</p> <p>(It will be decided by the indenter at the time of Indent)</p>	<p>BOO to check distance travelled & consumption of fuel to be recorded. 02 hours average Range/ Endurance trial to be carried out with 08 pers alongwith all equipments @ 82.50 kgs per person during sea trial with the help of GPS.</p>	<p>Must be as per specification</p>
21	Fuel Tanks	<p>Two below-floor high quality FRP/Plastic fuel tanks of capacity to meet the endurance with extra 10% reserve shall be fitted. Fuel tank shall be fitted centre of the boat maximum forward line with proper hatches having cleaning facility. A fuel gauge for each tank shall be fitted having display on the instrument panel. Each tank shall supply only to its own- side OBM, which shall provide separation and redundancy in the fuel supply in case of contamination, damage etc. However, a synchronization system shall be provided to allow both OBM to be run with either tank in emergency in case of one fuel tank supply chocked. Two 25 Ltrs UV-resistant polyethylene fuel tanks may be stowed in addition for emergency use along with the accessories. Proper vent to be provided for de-vaporization. Water separator and filter detachable and transparent OEM of OBM make to be installed (to drain the separated water time to time).</p>	<p>a) BOO to check fuel capacity meets endurance requirement. Certificate issued by class society/builder be obtained.</p> <p>b) BOO to check additional uv-resistant fuel tank capacity</p>	<p>Must be as per specification</p>
22	Navigation/Com munication- Approved Type	<p>a) Simple bracket-mounted magnetic compass shall be fitted to the instrument panel.</p> <p>b) Removable type bracket mounted hand held GPS system with Colour Display unit.</p> <p>c) Suitable place for installation of VHF set and bracket for fitting to its antenna.</p> <p>d) Navigational light to be provided Port/STBD side, and to be placed at a position to prevent damage from stacking at jetty.</p> <p>e) One 150mm/100 W hand held search light to be provided and facilitated to connect by 5 meter cable from panel arrangement run by on board battery.</p>	<p>a) BOO to check magnetic compass.</p> <p>b) BOO to check functioning of GPS, Check correctness of GPS reading by compass.</p> <p>c) BOO to check mounting of VHF Set/ Antenna.</p> <p>d) BOO to check all navigational lights are functional.</p> <p>e) BOO to physically check.</p>	<p>Must be as per specification</p>

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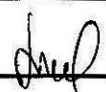
S/ No	QRs/Technical Specification	Trial Directive/ Procedure suggested for trial	Result expected /Desired
	(f) The quality of materials should be ensured/certified by classification society at every stage of construction. (g) A flap type NRV & plastic / nylon non corrosive ball valves of appropriate diameter must be installed.		
30	Certificate The following Certificate and Documents shall be supplied at the time of delivery of the vessel :- a) Classification Certificate as the construction of boat according to the class notation mentioned at Srl No.2 above issued by Classification Society Rules. b) GA drawing along with other plans approved by class. c) Load test certificate of four point lifting arrangement. d) The certificate of materials used in the construction of boat by Classification Society.	BOO to check the all required certificate/ approved drawing provided by builder duly approved by class society.	Required certificate must be provided by the firms.
31	Classification Regulations & Marks on Hull, Superstructure, Colour Scheme Classification Regulations FPB shall be designed, built and outfitted to comply with all the applicable provisions and requirements of the current International Rules and Regulations of Classification Society State approved Statutory authority. Marks on Hull, Superstructure The Boat name, ID No, user emblem, National Flag is to be affixed to both sides of the hull at super structure level. Size and location to be as approved by purchaser. Colour Scheme: The outer skin of the fiberglass hull is to be gelcotted with white colour glossy finish. To protect the surface of the boat, sealing the fiberglass beneath from the elements including water moisture and the sun's ultraviolet rays.	Craft ID No., BSF emblem etc to physically check by the BOO.	Complied as per specification mentioned in the QRs.
32	Cathodic Protection External Anodes: Suitable anodes to be fitted at appropriate places wherever required (OBM) for 18 months of continuous service.	BOO to physically check anodes for locations.	Complied as per specification mentioned in the QRs.
33	Tools One set of tools specified by the OEM for routine maintenance etc. 01 No propeller removing tool kit. 01 No hand oil drain pump. 01 No special tool for removing/fixing of oil filter to be provided. 01 No. spark plug spanner 01 Screw driver flat and star. 01 No. pliers 01 No. adjustable spanner.	BOO to physically check	Complied as per specification mentioned in the QRs.
34	Canopy A stowable canopy parachute canvas cloth/SRF canvas cloth may be fitted. The stainless steel collapsible canopy frame folds aft and stows above the transom. Canopy should be able to withstand high relative winds of upto 60 knots (30 knots wind + 30 knots speed)	BOO to physically check during speed trials against true wind.	Complied as per specification mentioned in the QRs.
35	First aid box Suitable first aid box and provisioning for keeping it.	BOO to physically check.	Must be as per specification
36	Document Fast patrol should be supplied with documentations/drawings, fitted equipment details and Boat data Book. Certificate mentioned at Srl No. 30	BOO to physically check	Complied as per specification


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S/ No	QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Result expected /Desired
37	Guarantee/warranty	The firm will have to provide 02 years guarantee/warranty for FRP Twin Engine speed Boat from the date of acceptance of consignee location in satisfactory condition.	BOO to be physically checked.	Complied as per specification



 (B K Mehta), ADG (Log), BSF

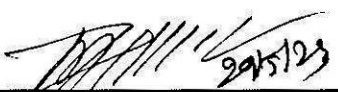

 (Indra Deo Singh), DIG(Prov/WW), BSF



 (Mukesh Kumar), ZIC, SIW, BSF



 (R K Sharma), DC/WW, BSF



 (Deepak Sharma), SSA, BPR&D


 (Piyush Goyal), AD, DCPW



 (Mahendra Kumar Yadav), AC, CRPF



 (Gaurav Drall), AC, SIW, BSF



 (Guru Gopal Singh), Surveyor, IRS


 (Inspr/RM Ashwani Kumar), BSF


 (Inspr/Tele Bhagat Ram Bhardwaj), ITBP


 (Inspr/Exe A K Awasthi), CISF


 HAV Shriram Gujjar, 52 SAG (NSG)


 (Sub Balwan Singh), Assam Rifle

Approved/Not Approved


 Director General
 Border Security Force

TECHNICAL SPECIFICATIONS OF HAZARDOUS DUTY LIFE JACKET (HDLJ)

1. This statement of technical requirement covers the design, manufacturing, supply, testing and product support for single buoyancy Hazardous Duty Life Jacket (HDLJ), DS CAT No N4220-000835(Indian Navy), required to be worn by personnel whilst carrying out hazardous duties at sea such as Boarding Party Ops, Seamanship evolutions, High speed boat operations etc.
2. **Construction.** The HDLJ should be manufactured considering following requirements:-
 - (a) **General Requirements**
 - (i) As per para 1.2 of SOLAS LSA code, MSC resolution 48(66)-
 - (ii) As per para 5 of SOLAS LSA code, MSC resolution 207(81)-
 - (b) The quality of workmanship (eg seam stitching, fixing of various fixtures, ergonomics of design and placement of fixtures etc) must be of high order.
 - (c) It should be fitted with a whistle made of a rustproof material, capable of making a loud shrill note in fresh water/sea water, and firmly secured by a cord.
 - (d) **Vest** HDLJ should be fitted on a nylon sleeveless mesh vest. Vest should have pockets / pouches. HDLJ should also have means for airlifting a survivor during search and rescue operation.
 - (e) The buoyancy of Life Jacket should be at least 16 kg in fresh water. Weight of HDLJ should not exceed 1.5 Kg. Life jackets should be suitable for use by adults.
 - (f) **Emergency Gears.** HDLJ should be provided with the following emergency gears, suitably affixed on HDLJ:-
 - (i) **Distress Marker Light And Battery Unit.** A distress light with a water activated battery is to be provided for locating the wearers in darkness or fog. There must be a provision to replace battery and / or lamp if it has been utilized. The light and the battery should have a shelf life of five years from the date of delivery onwards.
 - (ii) **Buddy Line.** A five foot buddy line should be attached to the HDLJ. The line should have a loop on the end to connect to a rescue boat or to another person.
 - (g) Auto-inflation mechanism and valise / bladder material should conform to the test requirements of MSC 81(70)
3. **Miscellaneous Features .**
 - (a) The model number and the year of manufacture, Buoyancy and details of approving authority should be printed on the Life jacket.
 - (b) Each Life jacket should have mark of inspecting authority on the valise and a permanent marking of date of expiry.
4. **Testing and Certification.**
 - (a) HDLJ should have the approval of national authorities like Navy/ DOT / MMD/Coast Guard of the country of manufacture or confirm to SOLAS specifications.
 - (b) The life jackets should have been type tested in accordance with IMO resolution MSC 81(70) and 226(82) . However, SOLAS requirement of twin buoyancy chamber is not applicable.
 - (c) Necessary certificates for Type approval are also to be submitted.

A series of handwritten signatures and dates are present at the bottom of the page. From left to right, they include: a signature with a date '29/5/23', a signature 'Gunn' with '125' below it, a signature 'D.D.' with '29/5/23' below it, a signature 'Aligad...' with '29/5/23' below it, a signature 'A' with '29/5/23' below it, a signature 'B' with '29/5/23' below it, and a signature 'die' on the far right.

5. **Product Support & Performance Guarantee** The supplier has to guarantee the satisfactory performance of the life jacket for a minimum period of five years, and product support for the same duration from the date of delivery to Indian Navy.

6. **Spares** - The On Board spares (OBS), and test equipment and the quantity, if any, are to be recommended by the supplier. Such recommendations are to be commensurate with the reliability of critical components and component use in the jacket. Special tools and test equipment are to be supplied for on board maintenance.

(a) **On Board Spares** - An itemized list of OBS, special tool and special equipment, which will be supplied with the life jacket are to be furnished along with the main offer. The OBS are to cater for all on-board maintenance routines and possible repair requirements. The OBS should include the following:

- (i) All spares required for exploitation upto 2 years.
- (ii) One set of general-purpose maintenance tools along with each lifejacket.
- (iii) One set of special tools required for dis-assembling/ assembling of components for repair by replacement.
- (iv) OBS list is to be furnished.
- (v) Detailed specification of various components is also required to be provided.

7. **Documentation** Each life jacket should be provided with an operating, technical and maintenance manual, type test and acceptance test certificates. In addition following documents are to be provided by the supplier:-

Description	Content	Copies
	Field and Depot Maintenance Manual	
	Parts and Tools Catalogue	
Technical Data	GA Drawing	
	Test Procedure and Documentation	
	Minor Repair Procedure	
	Certified Test Report	

8. **Warranty.** The life jacket with its associated components is to be guaranteed for stipulated performance for 2 years. The system supplied shall be warranted from defects, arising due to manufacturer and performance for the said period and cover all the defects arising from malfunction through design faults, inappropriate material, bad production and non-conformance to specifications. Any expense on account of repair/supply of spares against guarantee defects is to be borne by the supplier.

Handwritten signatures and notes:
 - A large signature on the left.
 - "first part 29/9/23" with a signature below it.
 - "Guru 125" with a signature below it.
 - "29/9/23 Bhagat" with a signature below it.
 - "2025" with a signature below it.
 - "stg" with a signature below it.
 - "A" with a signature below it.
 - "B" with a signature below it.