

F.No. IV-21011/01/2016-Prov-I 718  
Bharat Sarkar/Government of India  
Griha Mantralaya/Ministry of Home Affairs  
PM Division

26, Man Singh Road, Jaisalmer House  
New Delhi, Dated 09<sup>th</sup> May, 2016

To,

DsG: AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

**Subject: QRs and Trial Directive for 9 Meter Fast Patrol Interceptor Boat with Covered Cabin.**

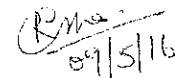
Sir,

The QRs and Trial Directives for the 9 Meter Fast Patrol Interceptor Boat with covered Cabin have been approved by the Competent Authority in MHA, as per Annexure.

2. The CAPFs concerned will be accountable for correctness of the QRs/Trial Directives
3. Henceforth, all the CAPFs should procure the above item required by them strictly as per the laid down Technical Specifications/QRs.

Yours faithfully,

Encl: As above

  
09/05/16

(Ritesh Kumar)

Under Secretary to the Govt of India

Tel: 23381278

Copy forwarded for necessary action to :-

✓ SO (IT), MHA : It is requested to host the QRs and Trial Directives (soft copy attached) on the MHA website (under the page of Organizational Set up- Police Modernization Division- Qualitative Requirement under Vehicle Equipments.

  
09/05/16

( V.Devadas)

Section Officer (Prov-I)

Copy to: DDG (Procurement), MHA.

**QUALITATIVE REQUIREMENT /TECHNICAL SPECIFICATION OF 9 METER FAST PATROL  
INTERCEPTOR BOAT WITH COVERED CABIN**

S/No		Proposed QRS/Technical Specification	
1.	Role & Function	The boat shall be able to perform as Fast Patrol Boat for day/night surveillance & interception of suspected craft/vessel along the riverine border in Sir Creek /Kori creek area & coastal area up to 20 nautical mile between Medi & Jakhau of Gujrat Ftr, Sundarban area & riverine border area of South Bengal Ftr, Braharputra River in Dhubri & high current Chenab River of Jammu Ftr, Sutlaj & Ravi River of PB Ftr. The boat shall be designed Shallow water operation, safe and effective maneuvered at maximum speed with full complements in specified Sea state. The boat will be in service for at last 15 years with annual exploitation of 600 hrs.	
2.	Class	To be built as per IRS class notation (SWASTIK SYMBOL) SU, HSLC, RS-2 or equivalent for the following requirement (i) Structural strength to meet the functional requirement. (ii) Material requirement. (iii) Fire-Fighting requirement. (iv) Electrical installation. (v) Propulsion system. (vi) Navigational requirement Anchoring & mooring requirement as per class.	
3.	General Features		
	(a) Dimension	<b>Length of Hull</b> 9 meter + 0.5meter <b>Breadth Overall</b> 2.8 meter + 0.3 meter <b>Draught</b> Not more than 0.9 meter with full load. <b>Depth</b> As per the Design.	
	(b) Capacity	The Boat shall have the capacity of 12 person on board including Crew in combat dress along with pe sonnel weapon & equipments and Two LMGs with First line ammunition with weight approx 6.73 kg. Average of 100 kg per person.	

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Co-opted Member: [Signature]

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	<p>The equipments and the machineries fitted in the boat should be suitable for marine applications and capable of satisfactory operation, under the following environmental conditions :-</p> <ul style="list-style-type: none"> <li>(i) Wind speed 10-30 knots.</li> <li>(ii) Ambient air temperature from zero to 50° C.</li> <li>(iii) Water temperature from 01° C to 40° C.</li> <li>(iv) Max relative humidity of 90% at 32° C.</li> </ul> <p>Sustain operations with Crew comfort up to sea state - 3 and survive up to sea state - 4.</p>																				
<p>(d) Operating Profile</p>	<p>The FPB shall conform the annual exploitation of 600 Hrs to the following operating profile :-</p> <table border="1" data-bbox="365 376 527 1581"> <thead> <tr> <th>S/No</th> <th>Speed</th> <th>Nos of Hrs</th> <th>Operating Time</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>From 25 knot to 30 knots</td> <td>60 Hrs</td> <td>10% of annual exploitation</td> </tr> <tr> <td>(ii)</td> <td>From 20 knot to 25 knots</td> <td>180 Hrs</td> <td>30% of annual exploitation</td> </tr> <tr> <td>(iii)</td> <td>From 15 knot to 20 knots</td> <td>240 Hrs</td> <td>40% of annual exploitation</td> </tr> <tr> <td>(iv)</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	(i)	From 25 knot to 30 knots	60 Hrs	10% of annual exploitation	(ii)	From 20 knot to 25 knots	180 Hrs	30% of annual exploitation	(iii)	From 15 knot to 20 knots	240 Hrs	40% of annual exploitation	(iv)	From 5 knot to 15 knots	120 Hrs	20% of annual exploitation
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<p>(e) Speed</p>	<p>Max 30 knots in calm water and cruising speed 15 knots at sea state 3 with 12 Person on board with personnel weapon and equipments.</p>																				
<p>(f) Endurance</p>	<p>The boat should have endurance of 6 hours at cruising speed of 15 knots at full load i.e 90 NM.</p>																				
<p>(g) Fresh Water capacity</p>	<p>50 litre in a potable water camper suitably fixed / clamped.</p>																				
<p>Hull</p>																					
<p>(a) Type of Hull</p>	<p>The boat shall be built as per proven hull form in single mould which can achieve the desired parameters with similar hull type and dimensions.</p>																				
<p>(b) Material of Hull</p>	<ul style="list-style-type: none"> <li>(i) The hull shall be constructed in accordance with classification society rules and shall be constructed using GRP/FRP material (base material /Vinyl Ester/additives /core material/ Gel coat) approved by class. Final coat in way of fuel tank should be fire retardant.</li> <li>(ii) Under deck includes longitudinal and transverse stiffeners and sub division bulkheads, with anti-flooding and damage control as per class requirements.</li> <li>(iii) The hull should be strengthened enough to resist the slamming effect of the water waves as per sea state specified in QRs.</li> <li>(iv) The construction of the boat should be done in controlled temperature/humidity to gain the best lamination property as per IRS/any member of IACS rule requirement and approved/ certified the capacity of the firm by any member IACS.</li> </ul>																				

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(c) Collar	Hull of the boat shall have compact/good quality/heavy duty Rigid collar made of hard foam with suitable shape corresponding to the design all around the boat. The foam used should have minimum shore hardness as per international standard and should be of class approved type
(d) Fender	06 Nos pneumatic fender to be provided, including 02 reserve.
(e) Railings	Suitable hand railings are provided in all decks with SS-316 grade material.
5. Cabin	<p>(i) It should be covered console having un-cluttered three side view with bullet proof shield, all around the cabin, including wind shield glass and side glass with open &amp; close system for natural ventilation. Forced ventilation also be provided. (Bullet proofing to be suitable for 7.62 mm bullet fired from a distance of 10 meter) to be certified by agency authorized to issue NIJ - III/EN 1063 certificate.</p> <p>(ii) Size of the cabin should be as per, seating arrangement of 10 person excluding with mitigating adjustable seats for helm master &amp; co-driver.</p> <p>(iii) Suitable hand grip shall be provided near each seats.</p> <p>(iv) 05 seats each at STBD &amp; Port side duly padded, back rest &amp; seat belt.</p>
6. Floor	Anti-skid floor/deck and all surfaces shall have minimum maintenance requirement and easy to clean. The areas of floor/deck shall have adequate handholds where ever required.
7. Propulsion	
(a) Engine	The boat shall be fitted with Twin Four Stroke Petrol Out-Board Motors (OBM) of reputed make like Mariner/Mercury/Yamaha/Johnson and of suitable power output, to meet the speed as mentioned in clause 3(e) load, endurance & all others functional requirements. The OBM should have service facility in India, authorized dealer with established own workshop in India, network of dealers and service center ( The certificate to this effect from the OEM of the OBM be enclosed by the boat builder alongwith the technical bid. Spare parts support for the OBM will be for a period of 10 years. Electrical starting arrangements to be provided for engines. The OBM should be of world reputed make /model and fitted with contemporary technical features associated with current engine designs available
(b) Fuel Tanks	Two below-floor, Independent class approved stainless steel Grade-316 fuel tanks of capacity to meet the endurance with extra 25% reserve shall be fitted. 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, with provision to allow both OBMs to be run by either tank in emergency, in case, one fuel tank supply is choked. Two 50 Ltrs UV-resistant polyethylene fuel tanks may be stowed in addition for emergency use along with the accessories. Proper vent to be provided in the fuel tank for maintaining atmospheric pressure in the tank. Water separator and filter to be installed in the fuel supply line. There should be the arrangement to remove the Fuel tank for service/cleaning etc.
8. Steering &	The boat shall be fitted with remote wheel with suitable steering system, remote trimming and tilting arrangement

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
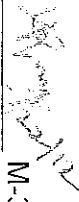


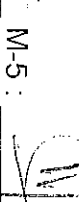
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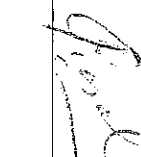
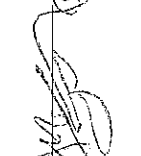
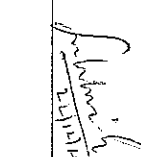
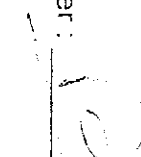
	<p>for engine, throttle/gear controls, techno meters, engines hour-meters, engine water temperature gauges, battery meters, and boat speed indicator, oil temperature. Oil pressure meter etc.</p>
<p>9. console meter Navigation/ communication approved type</p>	<p>a) Simple bracket-mounted magnetic compass shall be fitted to the instrument panel. b) Removable type bracket mounted GPS system with colour display unit. c) Suitable place for installation of VHF set bracket for fitting to its antenna. d) Navigational light to be provided at port &amp; STBD side, and to be placed at a position to prevent damage from stacking at jetty. Other Navigational lights as per class requirement. e) Remotely operated search light with 360° operation, luminosity and effective range of 800 mtr in clean weather. f) One radar with LED Monitor, range 12 NM synchronized with GPS operation be fitted in the cabin. g) Police Siren &amp; light (Blue flashing police light)</p>
<p>10. Power Generation/ Power supply</p>	<p>a) Power to be supplied by sets of batteries of the OBM's for the purpose of engine starting, lighting, navigational lighting, VHF set, search light etc. b) Independent charging facility to be provided for each set of batteries from engine driven alternator or through outside source of power. Required rectifiers &amp; voltage stabilizers are to be catered for. c) FRP battery boxes with water proof lids &amp; acid resistant lining to be provided &amp; secured in such a manner so as to prevent the movement of batteries in all operating condition. All electrical fittings should be IP 65 rating. d) 1000 watts capacities inverter/ UPS system be provided with set of batteries to power the lighting, Communication set bilge pump, radar and other electrical fitting. The charging system be provided with shore supply connection with 100 mtr cable and portable petrol run DG set (1 KVA).</p>
<p>11. Boat Equipment &amp; Tools</p>	<p>a) Galvanized Grapnel anchor as per class approved with 19 mm PP rope having 50 mtr length with sufficient breaking strength. b) Boat hook having 8 feet length of teak wood with Galvanized hook at the end c) Suitable capacity Oars 04 Nos with rowing lock. Aft 2 Nos, Astern 2 Nos. d) Mooring lines 20 mtr length, size 16 mm PP rope of sufficient strength - 06 Nos. e) Mooring line 30 mtr length, size 12 mm PP rope of sufficient strength - 04 Nos. f) VIP flag post brass detachable - 01 No to be installed at the top of cabin/mast (as per suitability). g) One set of following tools specified by the OEM for routine maintenance i) Propeller repairing tool kit. = 1 Set ii) Hand oil pump to drain sump oil. = 1 No iii) Tool for removing &amp; fixing of oil filter. = 1 No iv) Spark plug spanner. = 1 No</p>

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		v) Screw driver flat & star = 1 Set vi) 8" Plier = 1 No
12.	Lifting/Lashing	(a) Four lifting points/sling plates at freeboard top/ Gunwale (freeboard should be strengthened accordingly) with single lifting center shall be provided for quadruple quick-release sling to enable simple lifting by crans etc. Supplier shall ensure that normal deck cleats are made of stainless steel marine grade SS 316 or superior. Two stainless steel towing lugs to be provided. The supplier shall provide cradle for the stowage of boats on shore for under water hull cleaning. (b) Bollard – 03 Nos, 01 Forward & 02 Aft for safe working load and size of rope (Maximum). (c) Cleats - 04 Nos, 02 Forward & 02 Aft for safe working load and size of rope (Maximum). Hand operated and electrical bilge pumps be provided as per class requirement
13.	Bilging arrangement	
14.	Fitting & Fixture	(a) All fitting & fixtures including nut, bolt, screw etc shall be of SS-316 grade unless other materials are suitable for a particular's application as per BIS standards.
15.	On Board Spares	Supplier will provide on board spares required for 800 hours run operation of the OBM as per OEM recommendations. List of on board spares to be furnished by the supplier in the tender documents.
16.	Life Saving and fire fighting Equipments	(a) 04 Nos Hazardous Duty, Life Jackets as per SOLAS regulation /approved. (b) Life jackets heavy duty – 18 Nos SOLAS regulation / approved type. (c) Life buoy – 04 Nos SOLAS regulation/ approved type. (d) Fire extinguisher as per requirement and class approved. (e) Suitable First Aid box.
17.	Life Time Support	The Shipyard is to obtain a Contractual commitment from the various equipment suppliers and provide to the user, product Support including electronics equipments & gadgets fitted in the boat for a minimum period of <b>15 years</b> after delivery of the Boat.
18.	Document	Boat should be supplied with documentation /proven drawings, fitted equipment details and boat data book.
19.	Certificates	The following Certificates 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 Sri 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 (e) The certificate of bullet proof material by authorized agency and duly authorized by member of IACS on the basis of agency approval.

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<p>(f) Stability booklet</p> <p>(g) Basin Trials report containing following test :-</p> <ul style="list-style-type: none"> <li>(i) Swamp test</li> <li>(ii) Drop test 10 feet &amp; 20 feet</li> <li>(iii) Impact test</li> <li>(iv) Deflection test</li> <li>(v) Weighing test</li> <li>(vi) Basin/mooring trials</li> </ul> <p>All the above test will be conducted for first /proto type boat only. The test will be witnessed by BOO of BSF, class rep and firm rep.</p> <p>(h) Sea Trials_report containing following tests :- The following test/trial should be conducted for all boat including prototype (at the time of prototype inspection) and during JRI at consignee location.</p> <ul style="list-style-type: none"> <li>(i) Fuel consumption trials</li> <li>(ii) Speed trials at light load and full load conditions</li> <li>(iii) Range/Endurance trials</li> <li>(iv) Performance trials</li> <li>(v) Maneuvering trials</li> <li>(vi) Crash stop &amp; Astern Trials.</li> </ul> <p>(i) Ballistic test as per approved procedure and schedule to meet NIJ-11/EN 1063 standard for the first craft by authorized agency. The certificate to be submitted to this effect.</p> <p>(k) The firm date of proto type inspection be intimated 30 days before commencing the same by the builder.</p> <p>(l) All arrangement including fuel will be arranged by the builder for Prototype inspection at their yard and Sea trial location.</p> <p>(m) All arrangement excluding fuel will be arranged by the builder for JRI at respective consignee location.</p>	
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20.	Lighting	LED light be provided
21.	Arms	LMG/MMG mounting arrangement at forward deck, LMG/MMG will be supplied by BSF.

PO :- Kunal Mazumdar, DIG (WW), BSF, New Delhi

M-1: (Sanjeev Singh), DC, CRPF

M-2: (G. Saravanan), AC/II, NSG

M-3: (YOGESH SINGH DQ), SSB

M-4: (Col. Sanjay Sharma), Assam Rifle

M-5: (Mahabir Singh), AC, CISF

M-6: (Kuleesh Aband), AC, NDRF

M-7: (M. M. Gaud), BPR&D

M-8: (Insp M Elagovan), ITBP

M-9: (N C Sundar Singh) DC (WW) FHQ BSF N/Delhi

Co-opted Member: (Cdr K K Dhawan), Principal Surveyor, IRS, New Delhi


Approved/Not Approved


Director General  
Border Security Force





Appendix - "D"  
**QUALITATIVE REQUIREMENT / TECHNICAL SPECIFICATION AND TRIAL DIRECTIVES OF 9 METER FAST PATROL  
 INTERCEPTOR BOAT WITH COVERED CABIN**


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1.	<p>Role &amp; Function</p> <p>The boat shall be able to perform as Fast Patrol Boat for day/night surveillance &amp; interception of suspected craft/vessel along the riverine border in Sir Creek /Kori creek area &amp; coastal area up to 20 nautical mile between Medi &amp; Jakhau of Gujrat Ftr, Sundarban area &amp; riverine border area of South Bengal Ftr, Brahmaputra River in Dhubri &amp; high current Chenab River of Jammu Ftr, Sutlaj &amp; Ravi River of PB Ftr. The boat shall be designed Shallow water operation, safe and effective maneuvered at maximum speed with full complements in specified Sea state. The boat will be in service for at last 15 years with annual exploitation of 600 hrs.</p>	<p>Trial Directives</p> <p>During Water Trial operation in shallow water in day and night at user place be checked.</p>
2.	<p>Class</p> <p>To be built as per IRS class notation (SWASTIK SYMBOL) SU, HSLC, RS-2 or equivalent for the following requirement</p> <ul style="list-style-type: none"> <li>(i) Structural strength to meet the functional requirement.</li> <li>(ii) Material requirement.</li> <li>(iii) Fire-Fighting requirement.</li> <li>(iv) Electrical installation.</li> <li>(v) Propulsion system.</li> <li>(vi) Navigational requirement</li> </ul> <p>Anchoring &amp; mooring requirement as per class.</p>	<p>Examine the class certificate issued by classification society with the specified class notation for compliance.</p>
3.	<p>General Features</p> <p>(a) Dimension</p> <p><b>Length of Hull</b> 9 meter + 0.5meter</p> <p><b>Breadth Overall</b> 2.8 meter ± 0.3 meter</p> <p><b>Draught</b> Not more than 0.9 meter with full load.</p>	<p>Check with measuring steel tape in calm water and tally with approved drawing. Check lines plan and general arrangements drawings.</p> <p>Check with the measuring tape after loading the boat with 12 pers with all equipment @ 100 Kgs per person and tally with drawing.</p>


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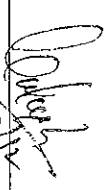
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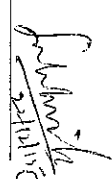
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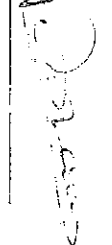
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	<p><b>Depth</b> As per the Design.</p>	<p>Check with the measuring tape and tally with approved drawing. Check line plan and general arrangement drawing. Check with 12 people load.</p>																				
<p>(b) Capacity</p>	<p>The Boat shall have the capacity of 12 person on board including Crew in combat dress alongwith personnel weapon &amp; equipments and Two LMGs with First line ammunition with weight approx 6.73 kg. Average of 100 kg per person.</p>																					
<p>(c) Operating / Environmental conditions</p>	<p>The equipments and the machineries fitted in the boat should be suitable for marine applications and capable of satisfactory operation, under the following environmental conditions :-                  (i) Wind speed 10-30 knots                  (ii) Ambient air temperature from zero to 50° C.                  (iii) Water temperature from 01° C to 40° C.                  (iv) Max relative humidity of 90% at 32° C.                  Sustain operations with Crew comfort up to sea state - 3 and survive up to sea state - 4.</p>	<p>Check the condition at relevant Sea State condition and check the class certificate for environment suitability.</p>																				
<p>(d) Operating Profile</p>	<p>The FPB shall conform the annual exploitation of 600 Hrs to the following operating profile :-</p> <table border="1" data-bbox="1015 599 1015 1581"> <thead> <tr> <th>S/No</th> <th>Speed</th> <th>Nos of Hrs</th> <th>Operating Time</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>From 25 knot to 30 knots</td> <td>60 Hrs</td> <td>10% of annual exploitation</td> </tr> <tr> <td>(ii)</td> <td>From 20 knot to 25 knots</td> <td>180 Hrs</td> <td>30% of annual exploitation</td> </tr> <tr> <td>(iii)</td> <td>From 15 knot to 20 knots</td> <td>240 Hrs</td> <td>40% of annual exploitation</td> </tr> <tr> <td>(iv)</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	(i)	From 25 knot to 30 knots	60 Hrs	10% of annual exploitation	(ii)	From 20 knot to 25 knots	180 Hrs	30% of annual exploitation	(iii)	From 15 knot to 20 knots	240 Hrs	40% of annual exploitation	(iv)	From 5 knot to 15 knots	120 Hrs	20% of annual exploitation	<p>Check the general running of the boat</p>
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(e) Speed	Max 30 knots in calm water and cruising speed 15 knots at sea state 3 with 12 Person on board with personnel weapon and equipments.	To be physically measured in calm water after loading the boat with 12 pers @ 100 Kgs per person during sea trial with the help of GPS and stop watch. Speed trails need to be undertaken favour/against tidal current using standard procedure
(f) Endurance	The boat should have endurance of 6 hours at cruising speed of 15 Knots at full load i.e. 90 NM.	Distance travelled & consumption of fuel to be recorded. 02 hours average Range/ Endurance trial with 12 pers @ 100 kg per person during sea trial with the help of GPS.
(g) Fresh Water capacity	50 litre in a potable water camper suitably fixed / clamped.	Check the container of 50 ltrs
4. Hull	(a) Type of Hull The boat shall be built as per proven hull form in single mould which can achieve the desired parameters with similar hull type and dimensions.	Check the class certificate
(b) Material of Hull	<p>(i) The hull shall be constructed in accordance with classification society rules and shall be constructed using GRP/FRP material (base material M/vinyl Ester/additives /core material/ Gel coat) approved by class. Final coat in way of fuel tank should be fire retardant.</p> <p>(ii) Under deck includes longitudinal and transverse stiffeners and sub division bulkheads, with anti-flooding and damage control as per class requirements.</p> <p>(iii) The hull should be strengthened enough to resist the slamming effect of the water waves as per sea state specified in QRs.</p> <p>(iv) The construction of the boat should be done in controlled temperature/humidity to gain the best lamination property as per IRS/any member of IACS rule requirement and approved/ certified the capacity of the firm by any member IACS.</p>	<p>(i) Check the hull physically in presence of class society representative and as per class society approved material as per QR.</p> <p>(ii) Certificate to this effect be obtained from the builder and class.</p> <p>(iii) The certificate of the class to be checked.</p> <p>(iv) The class certificate to be checked</p>

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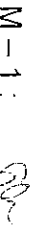
(c) Collar	Hull of the boat shall have compact/good quality/heavy duty Rigid collar made of hard foam with suitable shape corresponding to the design all around the boat. The foam used should have minimum shore hardness as per international standard and should be of class approved type	Class certificate to be checked for material.
(d) Fender	06 Nos pneumatic fender to be provided, including 02 reserve.	Check the fender as per class approval certificate.
(e) Railings	Suitable hand railings are provided in all decks with SS-316 grade material.	Material certificate and class certificate to be checked.
5. Cabin	<p>(i) It should be covered console having un-cluttered three side view with bullet proof shield, all around the cabin, including wind shield glass and side glass with open &amp; close system for natural ventilation. Forced ventilation also be provided. (Bullet proofing to be suitable for 7.62 mm bullet fired from a distance of 10 meter) to be certified by agency authorized to issue NIJ - III/EN 1063 certificate.</p> <p>(ii) Size of the cabin should be as per, seating arrangement of 10 person excluding with mitigating adjustable seats for helm master &amp; co-driver.</p> <p>(iii) Suitable hand grip shall be provided near each seats.</p> <p>(iv) 05 seats each at STBD &amp; Port side duly padded, back rest &amp; seat belt.</p>	The certificate of authorized agency to be checked.
6. Floor	Anti-skid floor/deck and all surfaces shall have minimum maintenance requirement and easy to clean. The areas of floor/deck shall have adequate handholds where ever required.	To be physically checked as per approved plan/drawing.
7. Propulsion (a) Engine	The boat shall be fitted with Twin Four Stroke Petrol Out-Board Motors (OBM) of reputed make like Mariner/Mercury/Yamaha/Johnson and of suitable power output, to meet the speed as mentioned in clause 3(e) load, endurance & all others functional requirements. The OBM should have service facility in India, authorized dealer with established own workshop in India, network of dealers and service center ( The certificate to this effect from the OEM of the OBM be enclosed by the boat builder alongwith the technical bid. Spare parts support for the OBM will be for a period of 10 years. Electrical starting arrangements to be provided for engines. The OBM should be of world reputed make /model and fitted with contemporary technical features	Engine performance to be checked during speed trial. Check functioning of all instrument panel. Check panel remote tilt & trim arrangements. Start stop engine 6-8 time and specific gravity and batteries ( in case of acid filled batteries) to be tested before and after engine start.

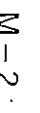
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(b) Fuel Tanks	<p>associated with current engine designs available</p> <p>Two below-floor, independent class approved stainless steel Grade-316 fuel tanks of capacity to meet the endurance with extra 25% reserve shall be fitted. A fuel gauge for each tank shall be fitted having display on the instrument panel. Each tank shall supply only to its own - side OBM, with provision to allow both OBMs to be run by either tank in emergency. In case, one fuel tank supply is choked. Two 50 Ltrs UV-resistant polyethylene fuel tanks may be stowed in addition for emergency use along with the accessories. Proper vent to be provided in the fuel tank for maintaining atmospheric pressure in the tank. Water separator and filter to be installed in the fuel supply line. There should be the arrangement to remove the Fuel tank for service/cleaning etc.</p>	<p>a) Check fuel capacity meets endurance requirement. Certificate issued by class society/builder be obtained.</p>
8. Steering & console meter	<p>The boat shall be fitted with remote wheel with suitable steering system, remote trimming and tilting arrangement for engine, throttle/gear controls, techno meters, engines hour-meters, engine water temperature gauges, battery meters, and boat speed indicator, oil temperature, Oil pressure meter etc.</p>	<p>Physically check the steering system and all gauges meter.</p>
9. Navigation/ communication approved type	<p>a) Simple bracket-mounted magnetic compass shall be fitted to the instrument panel.                  b) Removable type bracket mounted GPS system with colour display unit.                  c) Suitable place for installation of VHF set bracket for fitting to its antenna.                  d) Navigational light to be provided at port &amp; STBD side, and to be placed at a position to prevent damage from stacking at jetty. Other Navigational lights as per class requirement.                  e) Remotely operated search light with 360° operation, luminosity and effective range of 800 mtr in clean weather.                  f) One radar with LED Monitor, range 12 NM synchronized with GPS operation be fitted in the cabin.                  g) Police Siren &amp; light (Blue flashing police light)</p>	<p>a) Check magnetic compass.                  b) Check functioning of GPS.                  c) Check mounting of VHF Set/Antena.                  d) Check all navigational lights are functional.                  e) Physically check.                  f) Check functioning of Radar physically.                  g) Physically check.</p>
10. Power Generation/ Power supply	<p>a) Power to be supplied by sets of batteries of the OBW's for the purpose of engine starting, lighting, navigational lighting, VHF set, search light etc.                  b) Independent charging facility to be provided for each set of batteries from</p>	<p>a. Check Physically                  b. Check Physically</p>

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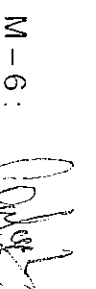
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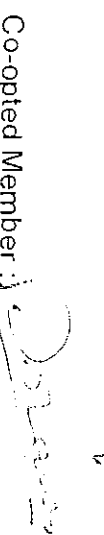
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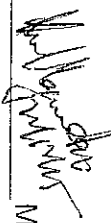

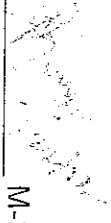

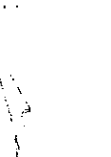

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		<p>engine driven alternator or through outside source of power. Required rectifiers &amp; voltage stabilizers are to be catered for.</p> <p>c) FRP battery boxes with water proof lids &amp; acid resistant lining to be provided &amp; secured in such a manner so as to prevent the movement of batteries in all operating condition. All electrical fittings should be IP 65 rating.</p> <p>d) 1000 watts capacities inverter/ UPS system be provided with set of batteries to power the lighting, Communication set, bilge pump, radar and other electrical fitting. The charging system be provided with shore supply connection with 100 mtr cable and portable petrol run DG set (1 KVA).</p>	<p>c. Check Physically</p> <p>d. Check Physically</p>
11.	Boat Equipment & Tools	<p>a) Galvanized Grapnel anchor as per class approved with 19 mm PP rope having 50 mtr length with sufficient breaking strength.</p> <p>b) Boat hook having 8 feet length of teak wood with Galvanized hook at the end</p> <p>c) Suitable capacity Oars 04 Nos with rowing lock. Aft 2 Nos, Astern 2 Nos.</p> <p>d) Mooring lines 20 mtr length, size 16 mm PP rope of sufficient strength - 06 Nos</p> <p>e) Mooring line 30 mtr length, size 12 mm PP rope of sufficient strength - 04 Nos.</p> <p>f) VIP flag post brass detachable - 01 No to be installed at the top of cabin/mast (as per suitability).</p> <p>g) One set of following tools specified by the OEM for routine maintenance</p> <ul style="list-style-type: none"> <li>i) Propeller repairing tool kit. = 1 Set</li> <li>ii) Hand oil pump to drain sump oil. = 1 No</li> <li>iii) Tool for removing &amp; fixing of oil filter. = 1 No</li> <li>iv) Spark plug spanner. = 1 No</li> <li>v) Screw driver flat &amp; star = 1 Set</li> <li>vi) 8" Plier = 1 No</li> </ul>	<p>All rope tools should be checked physically.</p>
12.	Lifting/Lashing	<p>(a) Four lifting points/sling plates at freeboard top/ Gunwale (freeboard should be strengthened accordingly) with single lifting center shall be provided for quadruple quick-release sling to enable simple lifting by crane etc. Supplier shall ensure that normal deck cleats are made of</p>	<p>Check physically and lifting / downing the prototype boat will be as per class requirement.</p>

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		stainless steel marine grade SS 316 or superior. Two stainless steel towing lugs to be provided. The supplier shall provide cradle for the stowage of boats on shore for under water hull cleaning.	
13.	Bilging arrangement	(b) Bollard – 03 Nos, 01 Forward & 02 Aft for safe working load and size of rope (Maximum). (c) Cleats - 04 Nos, 02 Forward & 02 Aft for safe working load and size of rope (Maximum).	Check Physically
14.	Fitting & Fixture	Hand operated and electrical bilge pumps be provided as per class requirement (a) All fitting & fixtures including nut, bolt, screw etc shall be of SS-316 grade unless other materials are suitable for a particulars application as per BIS standards.	Certificates to be checked.
15.	On Board Spares	Supplier will provide on board spares required for 800 hours run operation of the OBM as per OEM recommendations. List of on board spares to be furnished by the supplier in the tender documents.	Check physically as per list.
16.	Life Saving and fire fighting Equipments	(a) 04 Nos Hazardous Duty, Life Jackets as per SOLAS regulation /approved. (b) Life jackets heavy duty – 18 Nos SOLAS regulation / approved type. (c) Life buoy – 04 Nos SOLAS regulation/ approved type. (d) Fire extinguisher as per requirement and class approved. (e) Suitable First Aid box.	Check physically / certificate of class.
17.	Life Time Support	The Shipyard is to obtain a Contractual commitment from the various equipment suppliers and provide to the user, product Support including electronics equipments & gadgets fitted in the boat for a minimum period of 15 years after delivery of the Boat.	Certificate is checked.
18.	Document	Boat should be supplied with documentation /proven drawings, fitted equipment details and boat data book.	Check physically.
19.	Certificates	The following Certificates 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.	Check all certificates physically. g) All test as per class procedure

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<p>h) Sea trial is conducted by BOO at consignee location. j) Certificate by authorized agency is checked.</p>	<p>(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 (e) The certificate of bullet proof material by authorized agency and duly authorized by member of IACS on the basis of agency approval. (f) Stability booklet (g) Basin Trials report containing following test :- (i) Swamp test (ii) Drop test 10 feet &amp; 20 feet (iii) Impact test (iv) Deflection test (v) Weighing test (vi) Basin/mooring trials All the above test will be conducted for first /proto type boat only. The test will be witnessed by BOO of BSF, class rep and firm rep. (h) Sea Trials report containing following tests :- The following test/trial should be conducted for all boat including prototype (at the time of prototype inspection) and during JRI at consignee location. (i) Fuel consumption trials (ii) Speed trials at light load and full load conditions (iii) Range/Endurance trials (iv) Performance trials (v) Maneuvering trials (vi) Crash stop &amp; Astern Trials (j) Ballistic test as per approved procedure and schedule to meet NIJ-111/EN 1063 standard for the first craft by authorized agency. The certificate to be submitted to this effect.</p>
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	(k) The firm date of proto type inspection be intimated 30 days before commencing the same by the builder. (l) All arrangement including fuel will be arranged by the builder for Prototype inspection at their yard and Sea trial location. (m) All arrangement excluding fuel will be arranged by the builder for JRI at respective consignee location.	
20.	LED light be provided.	Check Physicality
21.	LMG/MMG mounting arrangement at forward deck, LMG/MMG will be supplied by BSF.	Check Physicality

PO :- Kunal Mazumdar  
(Kunal Mazumdar), DIG (WW), BSF, New Delhi

M-1: Sanjeev Singh, DC, CRPF

M-2: G. Saravanan, AC-II, NSG

M-3: \_\_\_\_\_, SSB

M-4: Col. Sanjay Sharma, Assam Rifle

M-5: Mahabir Singh, AC, CISF

M-6: Kuldeep Anand, AC, NDRF

M-7: M. Madhavan, BPR&D

M-8: Insp M. Eldgovan, ITBP

M-9: N C Sunder Singh, DC (WW) HQ BSF N/Delhi

Co-opted Member : Cdr K K Dhawan, Principal Surveyor, IRS, New Delhi

Approved/Not Approved

Director General  
Border Security Force

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