RFI No. AH/9964/AMPH LEASE dated 07 Jan 26
Total Pages - 33

REQUEST FOR INFORMATION (RFI) FOR LEASING AMPHIBIOUS AIRCRAFT FOR INDIAN NAVY

REQUEST FOR INFORMATION FOR LEASE OF AMPHIBIOUS AIRCRAFT

1. The Ministry of Defence, Government of India, intends to lease (wet lease) four fixed wing amphibious aircraft for a period of four years under Lease (Indian) category.

2. This Request for Information (RFI) consists of three parts as indicated below.

(a) **Part I**. The first part of the RFI incorporates broad operational requirements and features that should be met by the aircraft. Few important technical parameters of the proposed aircraft are also mentioned.

(b) **Part II**. The second part of the RFI states the methodology of seeking responses.

(c) **Part III**. Not applicable being a lease case.

PART - I

3. **The Intended Use of Equipment (Operational Requirements)**. The aircraft should be able to operate (take-off and land) from water surface (sea/ inland lakes etc.) as well as prepared surface (runway) and should be able to seamlessly transition from water to land and vice-versa. It should be Instrument Flight Rules (IFR) certified with day and night capability. The aircraft should be able to perform following roles: -

(a) **Primary**.

(i) Operational Logistics Support.

(ii) Long Range Search and Rescue (LR-SAR).

(iii) Special Operations.

(iv) Humanitarian Aid & Disaster Relief (HADR).

(v) Casualty Evacuation (CASEVAC).

(b) **Secondary**.

(i) Anti-piracy support.

(ii) Anti-narcotics support.

(iii) Maritime Patrol.

4. **Important Technical Parameters**. This document solicits information regarding compliance with critical technical specifications of the **Amphibious Aircraft**. A detailed response is essential so as to analyse the proposed solution of the lessor with regards to technical capabilities and features of the Amphibious Aircraft. Procedure for response by lessor is placed at **Appendix 'A'** to this RFI. Lessors are required to furnish details as per Proforma placed at **Appendix 'B'** to this RFI. Broad operational requirements for Amphibious Aircraft are placed at **Appendix 'C'** to this RFI. The lessor is to provide maximum details with respect to each parameter and also specify restrictions or conditions, if any. In addition, additional information may also be provided as feasible. Respondents are to provide detailed, para-wise information on all aspects.

5. **Conditions for Solicitation of Offers**. Lessor is to confirm if the following conditions in accordance with DAP-2020, are acceptable: -

(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 at least 18 months from the date of submission of offers.

(b) **Category of Lease**. The response is solicited for wet lease {Lease (Indian)} of **four** amphibious aircraft for a duration of **four years** iaw Para 23 of Chapter IX of DAP-2020. Additionally, it is to be confirmed whether the Lessor is an Indian entity and is the owner of the asset iaw para 3 of Chapter IX of DAP-2020.

(c) **Payment Terms**. Lessor is to indicate acceptability to the terms of payment as per DAP-2020.

(d) Details of approximate budgetary estimates for the amphibious aircraft being supplied including customs duties, spares, installation, commissioning, infrastructure, training cost and documentation is to be provided mandatorily under separate heads.

(e) Whether the lessor would be able to comply with all provisions of Defence Acquisition Procedure 2020 (DAP-2020) or not. If not, which Para/ Clause of DAP-2020 would not be agreed with reasons is to be indicated.

(f) Details of Liability and Insurance (Hull insurance and third-party insurance) in case the eventuality of an accident/ incident or damage to the leased equipment (including in times of war/ heightened state) and replacement timeline of the damaged asset is to be provided.

(g) Lessors may consider RFI as advance information to obtain requisite Government clearances.

(h) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.

(j) The Equipment of all TEC cleared lessors would be put through a trial evaluation in India on a 'No Cost No Commitment' basis. A staff evaluation would be carried out by SHQ to analyse the result of field evaluation and shortlist the Equipment for introduction into service.

(k) Lessors are to confirm the feasibility to offer 'No Cost No Commitment' trials, including at sea, of proposed equipment in India, in exact configuration as proposed in response to the RFI. Alternatively, the differences between various configurations and their consequent costs may be highlighted.

(l) Lessor must provide list and cost of BFE (if any)/ FRD viz., infrastructure (ashore and afloat especially during foul weather) and training cost.

(m) Amongst the lessors cleared by Staff evaluation, a Contract Negotiations Committee would decide the lowest cost bidder (L1) and conclude an appropriate contract iaw DAP 2020.

(n) Lessor 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 so as to maintain the required availability percentage as will be specified in the RFP.

(p) Lessor would be required to accept the general conditions of contract given iaw Para 29 and Appendix 'B' of Chapter IX of DAP 2020.

(p) **Integrity Pact**. An Integrity Pact (IP) is a mandatory requirement in the instant case (Annexure I to Appendix 'O' of Schedule I of DAP 2020).

(q) **Earnest Money Deposit**. An Earnest Money Deposit as bid security is mandatory requirement in the instant case (Refer Annexure I to Appendix O of Schedule I of DAP-2020).

Estimated Cost of Lease Scheme (Rs Crore)		EMD Amount
Above (not including)	To (including)	
-	100	Nil
100	150	30 Lakh
150	300	70 Lakh
300	1000	2 Crore
1000	2000	5 Crore
2000	3000	10 Crore
3000	5000	15 Crore
5000	-	25 Crore

(r) **Performance-cum-Warranty Bond**. Performance-cum-Warranty Bond both equal to 5% value of the contract inclusive of taxes and duties is required to be submitted after signing of contract.

(s) The lessor should indicate whether the proposed equipment is already in use by any other Navy/ Air Force/ Defence Forces or offered for use by other Governmental/ Non-Governmental agencies within India or abroad and if so, unit price (without taxes/ custom duties) and year in which it was supplied is to be indicated. The differences between these versions of equipment and equipment presently being offered may also be forwarded in detail.

(t) Acquisition cost at the end of lease period is to be indicated by the lessor.

(u) **Confidentiality Clause**. Classified information pertaining to the instant case/ items shall not be divulged by lessors to other agencies.

(v) **Undertaking**. The prospective lessors must submit an undertaking that information provided by them is correct.

(w) **Financial Implication**.

(i) Following details may be furnished by the lessors to arrive at optimal leasing option: -

Four Amphibious Aircraft for Four Years						
Availability	**Planned Hours/ Aircraft / Year**	**Guaranteed Hours/ Aircraft**	**Surge Capability (Hours/ Month)**	**Base Hourly Rate (INR/ FH)**	**Annual Cost (INR)**	**Total Contract Value**
60%						
70%						
80%						
85%						

Table - 1

(ii) Additionally, financial implications for leasing additional aircraft for the same period (up to six additional aircraft) may be furnished separately in the format at Table 1.

(x) **Detached Operations**. Cost implications if detached operations are undertaken be furnished *iaw* table below: -

No of days/ month	5	10	15	20
Cost				

Table - 2

PART - II

6. **Procedure for Response**

(a) Lessors must fill the form of response as given in Annexure II to Appendix A to Chapter II of DAP-2020 (**Appendix B**). Apart from filling details about company, details about the exact product meeting other generic technical specifications should also be carefully filled. Additional literature on the product can also be attached with the form.

(b) Lessors must forward an undertaking that in the past they have never been banned/ debarred from doing business dealing with Ministry of Defence (MoD)/ GoI/ or any other GoI organisation, placed at Para 12 of Appendix 'B'.

(c) The filled form should be dispatched at undermentioned address: -

Commodore Aircraft Acquisition
NHQ/ Directorate of Aircraft Acquisition
Room No. 405, Block D
Defence Offices Complex, Africa Avenue
New Delhi - 110 023
Tel: +91-11-26771342
Fax No.: +91-11- 26771382
E-mail: daa@navy.gov.in

(d) Last date of submission of filled form **should not be later than EIGHT WEEKS** from date of issuance of RFI, i.e. **05 Mar 26**. The lessors Short listed for issue of RFP would be intimated.

7. The Government of India invites responses to this request only from Original Equipment Manufacturers (OEM)/ Authorised Lessors. The end user of the equipment is the Indian Navy (***IN***).

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 it should it be so necessary at any stage. The acquisition process would be carried out under the provisions of DAP 2020.

Appendix A

REQUEST FOR INFORMATION: PROCEDURE FOR RESPONSE

REQUEST FOR INFORMATION (RFI) FOR LEASE OF FOUR AMPHIBIOUS AIRCRAFT FOR INDIAN NAVY

1. The Ministry of Defence, Government of India, is planning to progress a case for lease of four Amphibious Aircraft for a period of four years for the Indian Navy. With the view to identify probable lessors who can undertake the said project, OEMs/ Authorised lessors are requested to forward information on the product which they can offer. The parameters/ broad specifications of the item are mentioned in the questionnaire attached as per Appendix 'C'. In addition, the lessors are required to furnish details as per Proforma at Appendix 'B'.

2. Apart from the information as per the Appendices the lessors may also forward technical details/product brochures/literature etc pertaining to the item in question.

3. The required information/ details may please be forwarded at the following address by **05 Mar 26**: -

Commodore Aircraft Acquisition
NHQ/ Directorate of Aircraft Acquisition
Room No. 405, Block D
Defence Offices Complex, Africa Avenue
New Delhi - 110 023
Tel: +91-11-26771342
Fax No.: +91-11- 26771382
E-mail: daa@navy.gov.in

Appendix B
(Refers para 6(a) for RFI)

LESSOR INFORMATION PROFORMA

1. **Name of the Lessor**.

(Company profile including share holding pattern, 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. Lessors are to submit an undertaking that any subsequent proposal for change in name of firm or address, will be intimated to NHQ at the first available opportunity and supporting documents will be furnished within five working days of approval of the relevant competent authority.

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

Original Equipment Manufacturer (OEM) Yes/ No

Authorised Lessor 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/ Website: _____
Email: _____

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

Name & Address: _____
Pin code: _____ Tel: _____ Fax: _____
Email: _____

5. **Financial Details**. Category of Industry (Large/ medium/ small Scale):

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
GeM			
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:

(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 quantity 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: {**Compliance with DAP 2020**. The lessor is to indicate whether they would be able to comply with all provisions of DAP 2020 or not. If not, para/ clause of DAP 2020 which would not be agreed to is to be mentioned, with reasons (to enable SHQ to process seeking of reasonable waivers)}.

12. **Declaration**.

(a) It is certified that the above information is true and any changes will be intimated at the earliest.

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

(***Authorised Signatory***)

Appendix C

BROAD OPERATIONAL REQUIREMENTS FOR AMPHIBIOUS AIRCRAFT

1. Instructions for furnishing information: -

(a) The lessor response should be in ENGLISH only.

(b) The following units should be used:-

(i) Weight - Kilograms/ Pounds

(ii) Altitude - Feet

(iii) Temperature - ^{0}C

(iv) Distance - Nautical Miles

(v) Pressure - Hecta Pascal

(vi) Length - Metres

(c) **Indian Reference Atmosphere**. Performance requirements must be met in Indian Reference Atmosphere (IRA) conditions. The relevant parameters of IRA are as under: -

Ser	Parameter	Condition
(i)	Sea level Mean Temperature (^{0}C)	ISA+15^{0}C
(ii)	Lapse Rate	6.5^{0}C/ Km
(iii)	Relative Humidity	95%

(d) **Beaufort Scale & Sea State**

Beaufort Number	Wind Description	Wind Speed	Wave Height
0	Calm	O knot	0 feet
1	Light Air	1-3 knot	< ½ feet
2	Light Breeze	4-6 knot	½ feet (max 1 feet)
3	Gentle Breeze	7-10 knot	2 feet (max 3 feet)

4	Moderate Breeze	11-16 knot	3 feet (max 5 feet)
5	Fresh Breeze	17-21 knot	6 feet (max 8 feet)
6	Strong Breeze	22-27 knot	9 feet (max 12 feet)
7	Near Gale	28-22 knot	13 feet (max 19 feet)

(e) The response should be provided in HARD and SOFT copy (Excel) format.

(f) Make and model of all equipment to be fitted for the project in the Amphibious Aircraft should be furnished in response along with the information.

(g) **Environmental Conditions**. The environmental conditions of the aircraft as well as individual fit are required to be compatible as per MIL STD 810 G or above applicable military standards.

(h) Please provide specific responses/ compliance details.

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
Section I - General Specifications		
1.	**Configuration**. (a) What is the category and type of the aircraft in terms of weight and roles of aircraft? (b) What are the dimensions of the aircraft, height, wingspan, wheel track, wheel base, overall length? Lessor is requested to provide 3D model of the aircraft in AutoCad format. (c) What are variants available for the aircraft and their roles? (d) Provide details of the proposed aircraft, including ability and technical details to operate from water bodies as well as prepared surface (runway) and transition from one to the other.	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(e) What is the minimum notice to mission in case of an immediate launch?	
2.	**Basic Design Features**. Is the proposed aircraft of sturdy design (including radome and antenna equipment) capable of sustained operations at sea with minimum logistics and maintenance requirements?	
3.	**Certification**. (a) Is the aircraft certified for military operations? (b) Which is the certifying agency of the aircraft proposed? Is there any limitation to which the aircraft or equipment is certified? (c) Is the aircraft certified for both VFR as well as IFR operations? Have any restrictions been imposed by the registering authority? (d) Whether the aircraft is certified as a multi-engine (twin engine or better)?	
4.	**Operating Environment**. Do the performance parameters of the proposed aircraft cater to tropical conditions prevalent in Indian Ocean Region (IOR)? Additionally, please provide details on the following: - (a) Range of operation for temperature, humidity, saline environment etc. (b) Distance required for Take-off and landing run, both from water surface and land airfield. (c) Sea state and wave height limitations for different stages of operation on sea surface (take-off, landing and sustained float). (d) Minimum water depth for operation.	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(e) Special sea/ shore facilities required for operation, if any. (f) Limitations wrt visibility, precipitation and cloud penetration. (g) Are there any limitations in take-off/ landing by Day and Night (both afloat and ashore) or transition? (h) Is the aircraft capable of operating in the range -30^{0}C to +50^{0}C?	
5.	**Manoeuvring Envelope**. What are the performance parameters of the proposed aircraft, including but not limited to service ceiling, cruise speed, patrol speed, V_{NE}, take-off and landing speeds, as well as any other parameters limiting manoeuvring? Additionally, provide climb and cruise at 10,000 ft, for following conditions: - (a) Take-off and Landing ISA +25°C. (b) Cruise and climb at ISA +15°C. (c) Mean Sea level pressure of 1005 Hpa. (d) Environmental Lapse rate of 6.5°C/Km.	
6.	**Range and Endurance**. Provide detailed range, fuel consumption and endurance table in various conditions of loading and variants, role wise, under Indian Reference Atmosphere (IRA) conditions. Additionally: - (a) What is the operating weight in following configurations? (i) Certified max Take-off Weight. (ii) Certified max Landing Weight.	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(iii) Operational Empty Weight (with details of items included/ excluded). (b) At Max Take-Off All Up Weight (AUW), what is the PCN requirement of the aircraft from runways? (c) What is the maximum endurance of the aircraft (catering for 20% fuel as reserve) in fully loaded condition? (d) Up to what airfield elevation {in ft above Mean Sea Level (AMSL)} and minimum length (in ft) is the aircraft capable of operating at maximum AUW in nil wind conditions?	
7.	**Crew Complement**. (a) What is the standard crew complement (aircrew as well as maintenance crew) required to operate the aircraft? (b) Is the aircraft capable of undertaking operations from a detached location? If yes, following details are to be provided? (i) Minimum crew complement required (aircrew and maintenance crew). (ii) Minimum GSE/ GHE requirements? (iii) Any other factors.	
8.	**Technology**. The aircraft should incorporate latest technology to meet amphibious role including but not limited to: - (a) Corrosive Resistance Technology. (b) Watertight integrity of hull and reserve buoyancy to factor eventuality of damage.	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(c) Spray suppressant hull/ underbody design. (d) Slow speed handling characteristics. (e) Short take-off and landing (STOL) capability. (f) Capability of integrating radar, EO/IR, AIS and other sensor inputs into a single display.	
Section II - Physical and General Characteristics		
9.	**Power Plant**. (a) How many engines does the aircraft have? (b) Is the engine corrosion resistant? (c) Does the engine have Full Authority Digital Engine Control (FADEC) mechanism with auto throttle capability? (d) What is the redundancy for FADEC mechanism? (e) Does the engine have life monitoring mechanism such as Health Usage and Monitoring System (HUMS) which is connectible to ground station? (f) What is the mode for data retrieval? (g) Is the engine capable of air start (relight in air) and up to what altitude or any other limitations for relight? Describe in-flight engine start modes like auto-relight, windmill relight and assisted start relight capabilities with envelope limitations. (h) Is engine removal and installation feasible at remote location in short time with minimum manpower and Ground Support Equipment (GSE)? If yes, the details to be provided.	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(j) In the eventuality of loss of thrust on all engines, is the aircraft capable of undertaking a gliding recovery over land/ water? If yes, provide details.	
10.	**Fuel System**. (a) What are the methods of refuelling available (e.g., pressure refuelling, gravity refuelling)? Is the aircraft capable of being refuelled on water? (b) What are the specifications of the fuelling coupling/ adapter? (c) Is there a provision of partial refuelling and hot refuelling on the aircraft? (d) Is the aircraft capable of using ATFK-50 as well as JP-5 aircraft fuel? Are there any limitations on mixing these two fuels? (e) Is it possible to de-fuel the aircraft from a single point without the need for extra ground support equipment? (f) Is there a provision to transfer fuel from one side to another? (g) Is the fuel system of the aircraft capable of gauging entire fuel capacity and indicate the usable fuel on cockpit gauge at all times? (h) What are the measures incorporated in the fuel system for adequate redundancy and protective features to enhance survivability? (j) Does the aircraft have facility for jettisoning of fuel? (k) What is the maximum internal fuel capacity (litres, kg and lbs)?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
11.	**Hydraulics**. (a) What is the type and number of hydraulic systems with redundancies to operate essential services? (b) Does any single failure result in a situation where an essential system cannot be operated either by the main or the standby/ emergency system? (c) Are the hydraulic lines shielded by the airframe protective structures? (d) What is the specification of hydraulic fluid used and operating pressure of the system? Also, the specification of the coupling/ adapter to be indicated?	
12.	**Flight Controls**. (a) What is the Flight Control system available and level of redundancy? (b) In case of failure, is reversion to standby system/ manual mode possible?	
13.	**Landing Gear**. (a) What is the type of landing gear in aircraft? (b) Are landing gear position indicators available in the cockpit? (c) What is the main and standby mode of lowering the undercarriage? (d) What are the tyre pressures for shore operations? (e) What is the type of airframe/ fuselage to support take-off and landing from sea? (f) Is the landing gear of the aircraft operable when waterborne?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
14.	**Air Conditioning**. (a) What is the minimum cockpit temperature and humidity controlled by aircraft's air conditioning system and could these conditions be achieved while flying at low-level and high speed under hot ambient conditions of ISA + 25°C? (b) Does the cabin air conditioning cater for pilot comfort during ground operation of the aircraft up to 20 min under ISA + 25°C temperature conditions? (c) Is there any redundancy for air conditioning system? (d) Do the avionics bays on the aircraft have adequate environmental control to ensure reliable operation of the systems for the required duration of continuous operation whilst on ground in ISA+ 25°C?	
15.	**Electrical System**. (a) What are the type, capacity and number of power generating systems of aircraft? (b) What is the spare capacity of each of the power generating systems of the aircraft at maximum load? (c) Does the aircraft have adequate redundancy in both AC and DC systems to cater for uninterrupted mission accomplishment despite any single system failure? (d) Does the aircraft have an external receptacle to supply stabilised power to aircraft systems from a ground power source? What are the specifications of the external receptacle coupling/ adapter and type of supply required for the same?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(e) What is the type, capacity and number of internal batteries on the aircraft? (f) How many internal starts of the engine/s or auxiliary power unit is the internal battery pack capable of giving when connected in parallel to the AC/ DC power system? Does the aircraft have provision for start with external power supply source? (g) What is the duration up to which the internal batteries are capable of giving emergency electric supply to essential systems, if the aircraft does not have second level power backup? (h) Can the electrical power system handle all loads after single engine failure (in case of twin engine aircraft)?	
16.	**Air Operable Cargo Doors**. (a) Is the proposed aircraft equipped with air operable cargo doors to facilitate ease of in-flight operations? Does the aircraft have a provision of a ramp? (b) Does the air operable door have adequate safety features and interlocks to prevent inadvertent operation during flight? (c) What are the dimensions of the door? Is the size of door sufficient to allow access to a dinghy/ inflated boat/ palletised load, stretchers for incapacitated personnel, wheel chair patients etc? Details to be indicated. (d) Is there a provision of secondary/ fall-back mechanism for operation of the Air Operable Cargo Doors? If yes, provide description.	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(e) What is the provision to carry out Static line jumps and Combat Free Fall (CFF) for paratroopers from the air operable cargo doors? Are there associated indications (audio and visual) provided in the cockpit and cargo compartment?	
17.	**Avionics**. (a) What are the various avionics fitted on the proposed aircraft? Provide description in terms of accuracy, frequency range, weight and relevant details of each equipment? (b) What are the Flight Management System, navigation systems and landing systems available onboard? (c) Is the aircraft supported with a suitable flight planning tool onboard (digital Jeppesen database with support for receiving regular updates)? What is the period of such a support? (d) Is the proposed aircraft equipped with weather radar, TCAS, IFF, ADS-B, ILS, homer, enhanced GPWS? What are the operating characteristics and technical specifications of these equipment?	
18.	**Communication**. (a) Is the proposed aircraft capable of being fitted with Software Defined Radios (SDR), UHF SATCOM? How many systems are fitted? (b) Does the proposed aircraft have communication sets (VHF/ UHF/ HF spectrum) with Maritime Mobile Band (MMB) capability and Data Link system integration facility? What are the operating characteristics and technical specifications of these equipment?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(c) What is the DF/ homing system provided to Search and Locate SAR/ GMDSS homing/ Personal Beacons, Emergency Location Transmitters and Transponders? What are the operating characteristics and technical specifications of these equipment? (d) Is the aircraft equipped with Fourth Generation Intercom and provision for public address system.	
19.	**Cockpit and Cabin**. (a) Is the aircraft (including cabin area) pressurised? (b) What is the standing height of the cabin area? (c) What are the ergonomics features, noise and vibration level, displays, redundancy features incorporated in the proposed aircraft to permit long duration flights? (d) Does the aircraft have a glass cockpit concept and does it have Multi-Functional Display (MFD)? (e) Is the cockpit NVG capable? (f) What are the details of various cabin configurations available? (g) What is the maximum number of stretchers that can be carried onboard with suitable arrangements? (h) Is a chemical toilet within a lockable space, galley facility available?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
20.	**Miscellaneous Systems**. (a) **Cockpit Voice Recorder (CVR)/ Flight Data Recorder (FDR)**. (i) Is the aircraft provided with a solid state digital CVR/ FDR? (ii) If yes, is it deployable or not? (iii) Is the recording medium crash and fire proof as per TSO 124C or equivalent standards? (iv) What is the recording capacity for data and audio? (v) Does the crash proof element have a Sonar Locator Beacon (SLB)? If yes, provide details of SLB. (vi) Is there a provision of ELT in the aircraft? If yes, provide type, frequencies of operation and details thereof. (vii) Is it possible to retrieve FDR data from the aircraft from a single point? (viii) Is there a provision for playing back the 3D flight profile from the FDR data? (ix) Would it be possible to supply one set of specialised equipment, required for extraction of data from a crashed aircraft FDR? (b) **Fatigue Monitoring**. Does the aircraft have a facility to monitor and analyse the aircraft fatigue data?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(c) **Autopilot**. Is the aircraft autopilot coupled to the navigation system and integrated with auto throttle and does it have adequate built-in redundancy? Does the autopilot have the following modes:- (i) Attitude Stabilization Mode (Bank & Pitch). (ii) Auto Trim Function. (iii) Horizontal and Vertical Navigation Mode. (iv) Course & Track Capture Mode. (v) Altitude Selection Mode. (vi) Altitude Hold Mode. (vii) ILS capture (both Localiser & Glide Slope) and auto land facility, if available. (viii) Facility of receiving feed from air navigation systems including INS/ GPS and giving signals to autopilot to follow the path generated by the operator. (d) What is the minimum height for engagement of the autopilot? What is the lowest altitude to undertake sustained operations over sea with the autopilot engaged? (e) Is the aircraft equipped with windshield wipers? Are the windshield wipers capable of removing salt deposits without impairing visibility in a manner detrimental to flight safety?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
21.	**Payload**. (a) In addition to crew and sensors fitted, what load is the proposed aircraft capable of carrying at ambient temperature ISA +25°C and MSL of 1005 hPa? (b) Specify total number of hardpoints and weight limitations of each. What is the securing arrangement of load on hard points? (c) What is the arrangement for fasteners with quick release arrangement to cater for fast and efficient movement of load within the proposed aircraft such as while air dropping loads or ditching of load during emergencies? (d) What are the size and weight restrictions for carrying cargo pallets? (e) What is the provision for pallets to facilitate loading, unloading and towing in water? (f) What is the arrangement for rollers on floor for loading and unloading of pallets and stores? (g) What is the arrangement of custom racks and cargo nets to secure load? (h) Is there a provision of a winch inside the cabin to move the load?	
22.	**Passenger Capacity**. (a) What is the passenger carrying capacity on seats/ jump seats in addition to the crew without any modification to the cabin layout? (b) How many special operations (Spl Ops) troops fully loaded can be carried onboard?	

<table>
<tr><th>Ser</th><th>Specifications/ Parameters</th><th>Lessor To Specify and Provide Maximum Details Possible</th></tr>
<tr><td></td><td>(c) Does a provision exist to permit expeditious fitment/ removal of passenger seats/ jump seats by technical crew?

(d) What is the feasibility of carriage of patients (with numbers) on stretchers during flight with suitable arrangements? Are suitable arrangements available for associated equipment such as oxygen cylinders etc?

(e) Is there a provision of VIP seats to meet occasional requirements?

(f) Is the aircraft capable of supporting static line para jumps for paratroopers? Provide necessary description and details.</td><td></td></tr>
<tr><td colspan="3">Section III - Operational Characteristics</td></tr>
<tr><td>23.</td><td>Sensors.

(a) Is the proposed aircraft equipped with surveillance radar? Provide details of number of targets that can be tracked, MTI/ GTI facility, blind zones/arcs, random PRF and ECCM facilities along with any other capabilities incorporated in the Radar. Details of modes such as ISAR, SAR and Weather to be provided.

(b) What would be detection ranges of surface targets for the surveillance radar? Provide the data as per table below: -

<table>
<tr><th>Target RCS (Type)</th><th>Detection/ Classification Range (Nm) and Altitude (ft)</th></tr>
<tr><td>1 m^2 Target (Life raft/ Dinghy)</td><td></td></tr>
<tr><td>10 m^2 Target (Small Boat)</td><td></td></tr>
<tr><td>100 m^2 Target (Small Ship)</td><td></td></tr>
<tr><td>1000 m^2 Target (Frigate)</td><td></td></tr>
</table>
</td><td></td></tr>
</table>

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(c) **Weather Mode**. Following data to be provided wrt weather mode: - (i) Weather detection range. (ii) Ability of multi-channel processing (ability to display weather mode in the cockpit with simultaneous display of surveillance picture on main radar console). (d) Is AIS input provided to the Radar Operating Station? (e) How many targets can be automatically tracked and up to what range? (f) Is there any data capture and analysis facility including display, storage, replay and output to printer and mass storage device onboard for post mission analysis? (g) Is the aircraft equipped with a digital mapping system? (h) Is there any facility for receiving inputs feed from air navigation systems including INS/ GPS and giving signals to autopilot for proceeding to target designated or to follow a path generated by the operator? (j) Is the proposed aircraft equipped with EO/IR? Is the EO/IR coupled with the surveillance radar? (k) Does the radar have capability to pick up SART/ EPIRB transmissions? (l) What is the size of the radar console? (m) Is there any provision for fitment of loud hailer and search light?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(n) Is there any provision for fitment of Pollution Surveillance suit?	
24.	**Visual Aid to SAR**. What are the features available to facilitate visual aid to SAR to aid in search and target identification by day and night?	
25.	**Safety/ Survival Equipment**. (a) Is the aircraft equipped with Self-Inflatable Life Raft for aircrew and passengers? If yes, what is the carrying capacity? (b) Provide details of international standard survival equipment for maritime and jungle survival provided onboard. (c) Is there any provision for of stowage, inflation, launch and recovery of the craft(s)? How many such crafts can be accommodated onboard? (d) Is there any provision for dropping Air Droppable Life raft for undertaking SAR missions?	
Local Data Centre Requirements		
26.	**Maintenance**. (a) Is the proposed aircraft compliant with the latest maintenance philosophy in vogue? (b) What is the facility provided to download defect data for further interpretation, analysis and archiving? Would this data be shared with the lessee? (c) What is the minimum turn-around time for operational missions under various configurations? (d) What is the number of personnel envisaged to be employed by the lessor for undertaking routine servicing of the aircraft? (e) Does the aircraft have a comprehensive support package? Provide details.	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
27.	**Accessibility**. (a) Are all components/ parts requiring inspection/ servicing/ repairs easily accessible and permit inspection, servicing, removal or installation? (b) Are the inspection/ access panels standardized with quick release fasteners?	
28.	**Servicing Requirements**. (a) What are the external feeds that are required to service and operate the aircraft? (b) Does the aircraft have Built-in-Test Equipment (BITE) for its systems and what is the coverage (up to what level)? (c) What is the minimum periodicity of first and subsequent scheduled maintenance in flying hours and time period? (d) Is there a provision for cooling of avionics spaces while testing and operation on deck/ ground for extended periods without engine power? (e) Does the aircraft have a computerised health monitoring and maintenance management system for comprehensive management of maintenance activities for the aircraft? (f) Are there any additional servicing requirements for water operations? (g) What is the duration for undertaking Before Flight Servicing (BFS), Turn Round Servicing (TRS) and After Flight Servicing (AFS)?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(h) **Pilot Turn Round Servicing (TRS)**. Is it possible to carry out pilot TRS by refuelling, BITE and system check without any specialised equipment?	
29.	**Reliability/ Maintainability (R&M)**. (a) What would be average aircraft availability, serviceability, utilisation rate per month, mission reliability? Related experience to be indicated. (b) Data available on R&M to be provided. Where data is not available, the plans to obtain the same may be specified. (c) What is the overall aircraft availability catering for scheduled maintenance and reliability? (d) What is the MTBF for major components including engines in relation to the TBO?	
30.	**Servicing Periodicity**. (a) What are the maximum flying hours possible to operate the aircraft from aircraft carrier/ forward airfields without the need for routine 'I' level servicing? (b) What is the overhaul cycle of the aircraft (in hours)? (c) Is Engine 'O' & 'I' level servicing based on on-condition maintenance philosophy? (d) **Tropicalisation**. (i) What maintenance support equipment and technology would be offered with the aircraft to sustain the aircraft and engine performance under Indian tropical condition? (ii) Is there a requirement of carrying out special preventive maintenance viz. compressor wash, additive sprays etc on the engine, during routine operations and sustained operations?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
31.	**Ground Support Equipment (GSE)/ Ground Handling Equipment (GHE).** (a) What are GSE/ GHE/ test/ servicing equipment and tools etc. that would be offered for ashore and afloat operations of the aircraft? Features such as light-weight, ease of handling etc should be brought out. (b) Of these, which are COTS equipment? (c) Does the feasibility exist for carriage of essential GSE onboard in case of deployment at forward base? (d) What are the additional infrastructure requirements for operating the aircraft ashore? Would there by any requirement of equipment onboard ships whilst undertaking operations at sea? (e) Are the tools and tool boxes for airframe, electrical avionics and ordnance of international aviation standards and of reputed manufacturer?	
32.	**Electro-Magnetic Compatibility.** (a) Are the systems on board the aircraft adequately protected against electromagnetic emissions and do the systems comply with the Mil-Std 461 E/F or equivalent Standards? (b) Is there feasibility for integration of add-on equipment?	
33.	**Standardisation.** (a) Are all broad class of equipment, component and assembly standardised? (b) Which are the applicable military and other quality standards met in the design/selection of the aircraft and equipment?	

Ser	Specifications/ Parameters	Lessor To Specify and Provide Maximum Details Possible
	(c) Does the aircraft meet requisite MIL Standards to undertake amphibious operations?	
Any other relevant information on capability of roles and additional roles may also be specified.		