

REQUEST FOR INFORMATION FOR LEASE OF RECONNAISSANCE & SURVEILLANCE HELICOPTERS (RSH)

1. **Introduction.** The Ministry of Defence (MoD), Government of India (Lessee), intends to lease 20 Helicopters (Reconnaissance & Surveillance Helicopters) with ground support equipment for five years. This lease will also include all maintenance support including Performance Based Logistics (PBL) and training of aircrew and maintenance crew during the term of the lease.

2. The MoD, Government of India seeks information from helicopter Original Equipment Manufacturers (OEMs) or Authorised Indian Leasing Firms for participation in the Lease Project in accordance with Chapter IX of DAP 2020.

3. **RFI Structure.** This Request for Information (RFI) consists of two parts as indicated below: -

(a) **Part I.** The first part of RFI incorporates the following :-

(i) Intended use of leased helicopter and features that should be met by the Lessor. Few important technical parameters of the helicopters sought are also mentioned.

(ii) The intended terms of the lease.

(b) **Part II.** The second part of the RFI states the methodology of seeking response of Lessors. Submission of incomplete response format will not render the lessor liable for rejection.

PART - I

4. **Intended Use of Equipment.** The RSH Helicopters should be able to perform the following roles by day and night:-

(a) Reconnaissance and Surveillance, including armed reconnaissance.

(b) Direction of Artillery Fire.

(c) Carry small body of troops/Quick Reaction Teams for special missions.

(d) Aerial Photography.

(e) Scout role in conjunction with Attack Helicopter.

- (f) Airborne Forward Air Controller (FAC), if required.
- (g) Casualty Evacuation.
- (h) NBC monitoring.
- (j) Platform for ESM, ECM and ECCM etc.
- (k) Provide dynamic response during aid to civil authorities.

5. **Important Technical Parameters.** Important technical, operational and general parameters are placed at **Appendix A**. In each aspect, vendors are required to provide technical specifications, numerical data as per existing/achievable capability (*with time-frame*). Apart from the information sought as per the Appendices, the vendors should also forward **relevant documents, registered nomenclature of helicopter and engine(s), technical details, product brochures, literature etc supporting the information provided.**

6. **Quantities Required/ Number of Bases.** There is a requirement of leasing 20 Helicopters including ground support equipment to operate from two bases (amongst existing Army Aviation Bases), training of aircrew (including instructors) and training of technical crew for undertaking 'Operator' (O) level maintenance.

7. **Identification of Equipment and Operational Demonstration to Identify the Equipment that Best Meets the Capability Sought.** The identification of platform and its operational demonstration will be conducted in accordance with Chapter IX of DAP 2020. Lessors may indicate suggested operational demonstration methodology for which evaluation can be done prior to formulating Lease Operational Requirement (LOR) and obtaining AoN.

8. **Scheduled Delivery Date and Lease Term Including Early Termination or Extension Options.** The Lessors are required to indicate the overall time frame of delivery of 20 helicopters for Lease from the date of signing the contract. It should include stage wise break-up of delivery and the entire Lease Project post conclusion of contract. Lessor shall also indicate the possibility of delivering all 20 helicopters within **two** years from the contract signing date. The training schedule is to be in line with the delivery schedule. The Lessor should indicate readiness for commencement of delivery of the helicopters, support equipment and training. Lessor is to separately indicate with effect on lease cost for buying helicopters (at residual value) at the end of lease term and other implications, if any as well as extending the lease for a period of five years or part thereof.

9. **Delivery/ Redelivery Location.** The helicopters are required to be delivered along with Ground Support Equipment (GSE)/Ground Handling

Equipment (GHE) at two locations (amongst existing Army Aviation Bases) with capability to operate independently as detachment from other locations. The lessor is required to provide '**Intermediate**' (I) level maintenance at the two delivery locations. Requirement of Infrastructure/ space for the same would be provided by **IA** and needs to be indicated by the lessor. The Lessor is required to provide '**D**' Level maintenance at any **one** place in the country to which the helicopter may be flown for D level Maintenance and flown back on completion. The Lessor is required to indicate intended location for D Level maintenance facility. Upon termination of Lease Contract by expiration of the period or otherwise, the helicopters, documentation and spares (if any) will be redelivered to lessor from the same two locations.

10. **Delivery Conditions**. Lessor shall deliver the helicopters to the Lessee on the Delivery Date in the following condition: -

(a) Fully operational and in compliance with manufacturer's recommended inspection and maintenance program, with all calendar and hourly inspections that must be completed on or before the Delivery Date completed without deferment or extension.

(b) Operational and in an airworthy condition with a current and valid Standard Airworthiness Certificate.

(c) With all systems functioning normally in accordance with manufacturer's specifications and in compliance with all applicable certification documents (Airworthiness Directives, manufacturer mandatory service bulletins etc) with compliance dates on or prior to the Delivery Date.

(d) All logbooks shall be legible, complete and continuous in the English language and shall comply in all respects with applicable regulations. Software for maintenance of records as per **IA** maintenance philosophy must be provided.

11. **Operating Conditions Including Minimum Life Requirements**. The helicopters need to fly a maximum of **360 hours/ year** with monthly flying of **30 hours** per month per helicopter with an option to carry forward/ advance within a respective quarter. A minimum of **75 %** serviceability rate (including helicopters under 'I' & 'D' level maintenance) to ensure mission compliance is to be ensured by the Lessor at any given time at each of the two locations independently. Availability of GSE/ GHE including specialised helicopter towing equipment for moving helicopter in and out of hangar & POL (excluding fuel) is to be ensured by the Lessor for independent deployment. The helicopters should have a residual life of minimum 15 years at commencement of lease term with OEM/ OEM authorised MRO agency providing life time support for its maintenance during 15 years. The

helicopters would be subject to inspection by Indian Army Quality Assurance agency upon delivery and periodically during the lease term.

12. **Insurance Requirements.** Detailed response to Insurance requirements needs to be provided alongwith the approximate costs from an Indian Insurance Company. The insured amount is to be indicated specifically for each of the types of insurance which the Lessor shall maintain throughout the period of performance of this Contract.

13. **Rent, Deposit/ Commitment Fee, and Other Payments.** Payments will be made as per provisions of Chapter IX of DAP 2020. The Lessor is to provide indicative cost for leasing 20 helicopters as per **Appendix B** to this RFI. The Lessor should take into account all aspects of leasing, delivering of helicopters to operate from two bases, insurance, training of aircrew and maintenance crew and Power By Hour (PBH) costing for maintenance. Each Lessor is to indicate PBH cost of minimum number of hours per year for which **IA** would need to pay irrespective of usage. In addition Lessor is to indicate cost of PBH over and above the minimum hrs, under the provision of para 11 and 14 of RFI. Life cycle support and obsolescence management for the lease period and till its life post completion of leasing period including other aspects (if any) need to be mentioned specifically alongwith cost. Annual cost of PBH post lease period till life of the helicopter (minimum of 10 years) is also to be indicated.

14. **Maintenance Compensation Mechanism.** All O-Level servicing is to be undertaken by **IA** crew while responsibility of I-Level maintenance and beyond (including any break down maintenance at any place in India) would rest with the Lessor through the OEM/OEM authorised MRO agency. Agency carrying out PBH is to be indicated. All spares and POL (excluding Fuel only) will be provided by the Lessor. At any time, POL (excluding fuel) of four months should be made available at each base. Maintenance costing will be done in accordance with PBH philosophy accounted yearly, with payment being undertaken for a minimum number of fixed hours/ year and for hours flown above the maintenance hours/ year (excluding scheduled maintenance flying). A maximum of **360 hrs** of flying per helicopter per year is to be used for calculation of PBH in **Appendix B**. By end of the lease, the helicopters may be bought by **IA** or lease term may be extended for another 05 years, based on the requirement. OEM/ OEM authorised MRO agency would provide life time support for its maintenance. Costing for Life Cycle Support through PBH methodology for residual life post lease period needs to be mentioned separately (including escalation rate) on year on year basis. All vendors are to forward full list of POL for the use by helicopters to ensure commonality with existing POL with **IA**. NATO equivalent of POL is also to be provided.

15. **Maintenance, Operations and Records.** Lessor will be responsible for providing suitable maintenance software and hard copies for maintaining records as per IA maintenance philosophy and requirement. All O-Level servicing is to be undertaken by **IA** crew while responsibility of I-Level maintenance and beyond (including any break down maintenance at any place in India) would rest with the Lessor through the OEM/OEM authorised MRO agency.

16. **Airworthiness Compliance Standards, including any AD (Airworthiness Directives).** The helicopters should be certified by DGCA or equivalent agency (National/International) and OEM. All equipment and payloads should also be qualified or certified for airborne operations as per latest mil standards or equivalents.

17. **Pre/Post-Delivery Modification (and cost sharing).** The helicopters should be capable of installing IA provided Medium Machine Gun (7.62 mm) as a role removable equipment for Low Intensity Operations. Lessors are to provide willingness, time required and the cost thereof to integrate user provided Defence Series Maps (DSM), V/UHF SDR radio sets, SATCOM and IFF (with military modes and waveforms) instead of the equipment installed on the helicopter. Lessors are also required to provide compatibility of helicopters with IRNSS.

18. **Conditions Precedent (CP) to Effectiveness of the RFP/Contract.** Prior to commencement of Lease, training of aircrew and maintenance crew for independent operations of each helicopter in the first batch should have been completed and maintenance organisation of the Lessor and Lessee at both the locations should have been established. Lessors are required to indicate any Condition Precedent desired by them.

19. **Regulatory/Registration Regime.** The helicopters would be operated under the Military (Indian Army) regulatory framework. Provision of Military registration of the Leased Helicopter needs to be indicated.

20. **Governing Law.** The lease will be considered and made in accordance with as well as governed by and interpreted by the Laws of the Republic of India. No interpretation or construction of this RFI shall be made that would require either party to violate any applicable law or regulation of the Republic of India.

21. **Confidentiality.** Classified information pertaining to the instant case shall not be diverged by Lessor to other agencies.

22. **Tentative Time Schedule of the Leasing Process.** AoN for the leasing contract will be processed within **Six** months after the RFI is issued

and contract conclusion in accordance with the timelines mentioned in DAP 2020.

23. **Type of Lease.** Lessors need to provide requisite costing information for both Operational as well as Finance lease of the 20 helicopters for a duration of 05 years, 10 years and 15 years towards studying the cost benefit analysis and selection of type of Lease which **IA** would adopt for the instant case. At the end of lease term, or at predetermined times during the term of the lease, the asset(s) may be acquired by the MoD (the Lessee) for an agreed to price set at the beginning of the lease. The cost of acquisition of assets at the end of 2nd, 3rd, 4th and 5th year is to be indicated separately. The cost of procurement of new helicopters upfront is also required to be provided.

24. **Rough Order of Magnitude Cost.** Lessors are to provide the Rough Order of Magnitude (ROM) cost for lease of 20 helicopters for 05 years with Buy option and also provide a separate ROM cost for lease of 20 helicopters for 05 years with an option to extend the lease for another 05 years as per tables at **Appendix B**. All 20 helicopters should be of the same type/ version/ standard. The cost is to be subdivided into cost of helicopters, cost of GSE/GHE including helicopter towing equipment for moving, insurance cost, maintenance /PBL for 05 years with a cost breakdown for Power by the Hour, cost of training aircrew/ maintenance crew and miscellaneous cost (elaborate). Taxes and levies are to be mentioned separately.

25. **Scope, Depth and Range of Lease.** Lessors are required to provide detailed scope, depth and range of Lease they are willing to provide including details of helicopter (s) being offered, MRO agency (ies) involved, Certification agency (ies) involved, Finance and insurance agency (ies) involved etc so as to enable MoD to have a clear understanding of the entire leasing process being offered. During the tenure of the lease, status reports (details to be decided later) are required to be made to the user.

26. **Any Special Conditions of Lease.** Lessors are required to indicate in detail any special conditions of the Lease including any deviations from Chapter IX of DAP 2020 and detailed reasons thereof.

27. **References of Applicable Statutory Law, Rule, Regulations, Including National/Federal Guidelines, as Applicable to the Asset and Conditions of Lease.** Lessors are required to provide references of applicable statutory law, rule, regulations, including national/federal guidelines (if any), as applicable to the asset and conditions of lease.

28. **Integration of Weapons and Sensors.** The Lessor is to indicate experience in integration of customer designated or nominated weapons and sensors while operating on the leased Helicopters. The weapons and sensors

integration shall include user provided 7.62 mm Medium Machine Gun (MMG) and/or V/UHF SDR, SATCOM and/or IFF. Any reservation regarding integration of weapons and sensors is to be highlighted in unambiguous terms.

29. **Service Life of Helicopters.** The Residual Minimum Service Life of the Helicopter is required to be 15 years on commencement of lease. The OEM/OEM authorised MRO agency is required to ensure the availability of spare parts and its maintainability throughout the service life of the Helicopters. In addition, vintage of the helicopter also needs to be indicated by the Lessor.

30. **Manpower Requirements.** The Lessor is to indicate the broad requirements of crew to man the Helicopter for each of the roles mentioned in Para 4, Indian Helicopter Training Team, Operational Maintenance teams, Logistics Establishment staff, etc. Need to keep manpower requirement to minimum commensurate with operational and functional efficiency is to be borne in mind.

31. **Training of Crew and Maintenance Personnel.** The Lessor is to provide broad plan of training of personnel as applicable (Helicopter crew including Instructors, Certification staff, Maintenance staff, etc). As far as possible the training is to be planned in India and requirements of training abroad are to be minimised. The concept of 'train the trainer' is to be adopted. Instructional clearance is to be provided for Qualified Flying Instructors, and maintenance crew. Availability of **simulators** for training, training aids such as CBT packages are to be indicated. Lessor is to indicate the minimum number of personnel recommended for training (Aircrew, Certification staff, Maintenance staff). Post initial training, the Indian crew should be in a position to train further personnel.

32. **Broad Methodology to be Adopted.** Post receipt of the response of the RFI, the methodology adopted to progress the case for leasing of helicopters will be in accordance with Chapter IX of DAP 2020.

33. The Lessors are to furnish details as per the Information Proforma at **Appendix B** including the following :-

(a) Maintenance and life cycle support to the helicopter during its service life, including Performance Based Logistics, warranty and insurance.

(b) Lessor to propose trial methodology to assess the suitability of the helicopter for **IA** usage.

(c) Willingness to provide product support for Life cycle of the platform (15 years), which includes spares and maintenance tools/ jigs/ fixtures for field and component level repairs.

(d) Willingness to accept all conditions of DAP-2020, if not, which Para or Clause of DAP-2020 is not acceptable is to be indicated.

(e) Indian leasing firms to submit capability and willingness of Foreign OEMs to lease the helicopters through Indian leasing firms.

(f) An undertaking that business dealing with applicant Entity or any of its allied entities have not been suspended or banned, by MoD/ SHQ or any Government Department or organization (as defined in Guidelines for Penalties in Business Dealings with Entities issued vide Ministry of Defence, D (Vigilance) MoD ID No 31013/I/2006-D(Vig) Vol II dated 21 Nov 2016). None of the Promoters and Directors of applicant entity should be a wilful defaulter.

(g) An undertaking that the entity is not likely to be under insolvency resolution at any stage of procurement.

34. Earliest date by which the Lessor is willing to give a presentation at IHQ MoD (Army)/Army Aviation Directorate, New Delhi is to be indicated. The presentation in person/ through video conference is to be provided by a team of specialists with the required knowledge and mandate for addressing various queries/clarifications made by the Indian Army.

35. The offers shall be evaluated in accordance with provisions of Chapter IX of DAP-2020. The OEM is liable to be disqualified for any materially false statement.

36. **Broad Methodology to be Adopted**. Post receipt of RFI response, procedure adopted would be in conformity to Chapter IX of DAP 2020.

PART – II

37. **Procedure for Response**.

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

(b) The filled form alongwith response to questionnaire as per **Appendix A** in hard and soft copy should be dispatched by registered post to under mentioned addressees :-

- (i) DIRECTORATE GENERAL ARMY AVIATION (Aviation 6)
GENERAL STAFF BRANCH
INTEGRATED HQ OF MoD (ARMY)
DHQ PO, NEW DELHI – 110011
Tele No: +91-11-25694693
Email: mayfair.06@gov.in
- (ii) DIRECTORATE GENERAL OF
CAPABILITY DEVELOPMENT (CD-10)
GENERAL STAFF BRANCH
ROOM NO-533, SENA BHAWAN
INTEGRATED HQ OF MoD (ARMY)
DHQ PO, NEW DELHI-110011
Tele No: +91-11-23333913
- (iii) ARMY DESIGN BUREAU (GSQR CELL)
GENERAL STAFF BRANCH
ROOM NO-16, C WING, SENA BHAWAN
INTEGRATED HQ OF MOD (ARMY)
DHQ PO, NEW DELHI-110011
- (iv) ADDITIONAL DIRECTOR GENERAL
ACQUISITION TECHNICAL (ARMY)/
ROOM NO-30, D-II WING, SENA BHAWAN
INTEGRATED HQ OF MOD (ARMY)
DHQ PO, NEW DELHI-110011
Tele No: +91-11-23792414

(c) Last date of acceptance of response is **12 Sep 2023 at 1400 hrs.**

38. The Government of India invites responses to this request only from **Indian vendors** (*including an Indian company forming joint venture/ establishing production arrangement with OEM*). The end user of the helicopter and equipment is Indian Army.

39. Reply to this RFI (and further communication on the case, including equipment description, training and documentation) are to be made in English Language only. Response to the RFI is to be provided in hard and soft copy. The compliance tables to all aspects are required to be provided in editable form (preferably Microsoft excel).

40. The response needs to be detailed with provision of specific or not less than or not exceeding parameters so as to facilitate formulation of Operational Requirements for Lease of helicopters.

41. The Leasing process would be carried out under the provisions of DAP 2020 or as an amended from time to time in future.

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

43. A vendor interaction is scheduled on **01 Aug 2023** (date) at **1400** hrs (time) hrs at **Vimanik Hall, DG Army Aviation** (venue).

Appendix 'A'

(Refer to Para 5 and
37 (a)&(b) of RFI)

QUESTIONNAIRE**BROAD PARAMETERS FOR WHICH INFORMATION IS REQUIRED**

1. Following parameters/ specifications of helicopter and equipment is requested in the response to our Request for Information.
2. For purpose of this requirement, standard configuration means a Light Helicopter with at least the following equipment :-
 - (a) Integrated Flight Display.
 - (b) Display to monitor all engine and helicopter parameters.
 - (c) Solid State Cockpit Voice Recorder, Flight Data Recorder and Emergency Locator Beacon.
 - (d) Cockpit with Night Vision (NVG) Compatible lighting.
 - (e) Transponder Mod S, ICS and Communication sets (VHF & UHF).
3. **Intended Use of Equipment.** The RSH Helicopters should be of Light Helicopter and be able to perform the following roles by day and night:-
 - (a) Reconnaissance and Surveillance, including armed reconnaissance.
 - (b) Direction of Artillery Fire.
 - (c) Carry small body of troops/Quick Reaction Teams for special missions.
 - (d) Aerial Photography.
 - (e) Scout role in conjunction with Attack Helicopter.
 - (f) Airborne Forward Air Controller (FAC), if required.
 - (g) Casualty Evacuation.
 - (h) NBC monitoring.

- (j) Platform for ESM, ECM and ECCM etc.
- (k) Provide dynamic response during aid to civil authorities.

4. **Stipulated Conditions for Use.**

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

- (i) Sea level Mean temperature : ISA + 20°C.
- (ii) Reference Temperature for Take off and landing : ISA + 20°C.
- (iii) Reference Temperature for performance less Ser 2(a)(ii) : ISA+ 15°C.
- (iv) Lapse rate from sea level to 16 km: 6.5°C/km.
- (v) Mean Sea Level pressure : 1005 hpa.

(b) **Tropicalisation.**

(i) Are the helicopter and its systems tropicalised? Vendor to provide the cleared operating temperature range, relative humidity and any other relevant parameters.

(ii) Are the associated Test Tools & Ground Equipment (TT & GE), Special Maintenance Tools (SMT), Special Test Equipment (STE), Bay Servicing Equipment (BSE), Ground Support Equipment (GSE), Ground Handling Equipment (GHE), tropicalised and ruggedised? Vendor to provide the cleared operating temperature range and relative humidity.

(c) **Surface Classification.**

(i) What is the capability of the helicopter for landing and takeoff from a sloping helipad? (*Up, down and lateral slope*)

(ii) Is the helicopter cleared to operate from surfaces covered with snow, sleet, sand, water and slush?

(iii) **Transportability by Air.** Is it possible to carry the helicopter in an IL-76 and/ or C-17 aircraft? Indicate the

modalities and time-frame required for dismantling and loading, unloading, re-assembly and operating the helicopter.

TECHNICAL CHARACTERISTICS

Physical and General Characteristics

5. Basic Design Features.

- (a) Is the helicopter powered by single/ twin engine(s)?
- (b) Is the Basic Empty Weight (BEW) of the helicopter less than 2000 kgs? BEW (*including configuration of BEW*) and maximum AUW of the helicopter with internal, external and jettisonable loads should be clearly indicated.
- (c) Do the main and tail rotor blades have suitable leading edge reinforcement? Indicate specific features for greater life and survivability of the helicopter.
- (d) Do the rotor blades cater for lightning strikes?
- (e) Provide details of main and tail rotor system.

6. Power Plant.

- (a) Is the helicopter powered by turbo shaft engine(s)?
- (b) Does it have electronic engine control mechanism?
- (c) Do the engine air inlet(s) have particle-separator? Is the system integral to the engine or 'add on' type and easy to remove and install?
- (d) Is the engine capable of unrestricted operation with Aviation Turbine Fuel (ATF)?
- (e) Restrictions with other aviation cleared turbine fuels to be listed.
- (f) Indicate the capability in terms of maximum pressure altitude and minimum temperature after an over-night halt for which the helicopter is cleared for (*start of engine/engines on internal battery*) cold-soak start and operation.
- (g) What is the time taken from engine starting to take-off (*including starting of engine/s and all essential systems*)?

7. **Contingency Power Ratings.**

- (a) Does there exist contingency or such like rating and what is the time for which this rating is cleared?
- (b) Is there any indication of any contingency rating being used?
- (c) Also indicate further details as regards the engine in terms of its life, ratings including any time limits, power output etc.
- (d) The vendor to also indicate if any examination or maintenance activity is required after use of any of the ratings.

8. **Maximum Rating.**

- (a) What is the maximum time for which a maximum rating is available?
- (b) Does the engine require any examination after use of this power rating?
- (c) Is the maximum continuous rating available for unlimited use?

9. Is the engine capable of air starts (*relight in air*) up to an altitude of 6 km?

10. What is the engine response time under no air bleed conditions from flight idling to 95% of maximum rating?

11. **Fuel System**

- (a) Are the fuel tanks self-sealing?
- (b) Is gravity de-fuelling of usable fuel from the fuel tank(s) possible?
- (c) Is hot refuelling possible?
- (d) Details of fuel tanks, capacity, interconnections, self-sealing, crash-resistance, gravity de-fuelling and hot refuelling should be provided.

12. **Main Rotor, Rotor Head and Tail Rotor**

- (a) Are the Main Rotor Blades interchangeable individually (*not as a set*)? Please indicate details of associated maintenance activity required.

(b) Is main rotor brake provided? Details of application of Main Rotor Brake to be indicated including normal and emergency operations.

(c) Are the Main Rotor Blades (MRB) foldable for storage and transportation? Details of Main Rotor Blades manual folding to be indicated including weight penalty, time and manpower required for the blade folding exercise.

(d) Upto what wind speeds is it possible to safely start and stop the rotors? Indicate wind speeds and direction limitations for above.

(e) Is the helicopter capable of operating even after being parked in the open (*without hangarage*) for long periods of time? Vendor to indicate limitations/precautions (*if any*). Details of securing the rotors in terms of lashing and mooring the helicopter for parking outside in gusty wind conditions to be indicated.

(f) Does the helicopter have adequate margin for directional control at hover up to hover ceiling and in zero speed autorotation at max AUW?

13. **Gear Box.** Is the gear box capable to run dry for at least 30 minutes? Vendor to indicate details and the ratings for this operation in dry condition.

14. **Flight Controls.**

(a) Is the flight control system power operated or power assisted with built in redundancy?

(b) In case of failure, is reversion to standby system / manual mode possible?

(c) Is the helicopter controllable if trim fails?

15. **Cockpit and Cabin.**

(a) Is cockpit designed to permit easy entry/exit including emergency exit for pilots & passengers and easy loading/unloading and lashing of payload?

(b) What is the normal complement of crew? Vendor to also indicate if the helicopter is capable of being piloted by a single pilot.

(c) Is the cockpit NVG compatible for Gen III or equivalent/ higher NVGs?

(d) Is the main instrument panel capable of accommodating necessary multifunction displays (MFDs), for surveillance systems/armament/ EW suite etc?

(e) Is the provision to display essential flight and navigation parameters in metric system available?

(f) Are the helicopters equipped with air conditioning system, heating and ventilation system? Please indicate whether these are integral parts of the helicopter or installation/ removal can be carried out as per requirement and with what effort?

(g) Does the helicopter have a minimum seating of four passengers in the cabin?

(h) Are the passenger seats removable?

(j) The vendor to indicate the means provided for crew protection from small arms fire in terms of 'Add on' type Armour plating for seats or any other means.

(k) Are the crew sets designed to take into account the wearing of armour protective jackets by aircrew?

(l) Vendor to indicate whether crew seats and passenger seats are crashworthy.

(m) Is cockpit and cabin fire extinguisher provided?

16. **Landing Gear**

(a) Is the helicopter fitted with a wheeled or a skid landing gear? Details of the helicopter landing gear should be provided. Vendor to specifically indicate means of operating from snow covered areas and Emergency Flotation Gear to operate over the sea and provide details of the same.

(b) For skid landing gear details of suitable ground handling equipment to be indicated.

17. **Time Before Overhaul (TBO).**

(a) What is the in-service life/Total Technical Life of the helicopter in terms of years and flying hours?

(b) What is the life in terms of years and flying hours of the helicopter before any major overhaul?

(c) List the major components along with their TBO in terms of years and flying hours.

18. **Avionics.**

(a) Vendor to provide details of avionics architecture of the helicopter.

(b) **Communication Equipment.** Are the helicopters equipped with the following communication equipment?

(i) Intercom between pilot, co-pilot and passengers. Indicate details to include number of passengers.

(ii) V/UHF (FM/AM) radio set capable of operating on aeronautical band.

(iii) Provision for VHF (FM) set.

(iv) Provision for HF (*Single Side Band (SSB)*) communication set.

(v) Provision for Software Defined Radio(SDR) (Indigenous).

(vi) Radio Management System to interface with the avionics systems on board.

(vii) Radio Altimeter.

(c) **Navigation System.**

(i) Is the helicopter equipped with GPS?

(ii) Is the helicopter equipped with Inertial Navigation System (INS) coupled with the GPS?

(iii) Is the helicopter equipped with Doppler Velocity System (DVS) coupled with the GPS? Indicate details.

(iv) Indicate type and details of main and standby navigation system and also state whether the system has the capability to upgrade to dual mode i.e. receiving GLONASS, GALELIO, GAGAN and IRNSS signals besides the present GPS?

- (v) Is the helicopter provided with VOR, ILS and TACAN?
- (d) **Auto Pilot.** Is the helicopter equipped with minimum three axes auto pilot? Vendor to provide details such as axes, provisions, navigation coupling, etc.
- (e) **Oxygen System.**
- (i) What is the provision for oxygen system for crew and passengers on board the helicopter? Vendor to provide the details of the oxygen system.
- (ii) What is the minimum duration for provisioning of oxygen for the crew and two passengers (separately) at 3 km altitude?
- (f) Is the helicopter provided with Gen III or equivalent / higher generation NVG with light weight integrated helmet and oxygen mask with in-built microphone for the crew?
19. **Fixed Sight.** Can a fixed sight be mounted on the helicopter for firing of armament?
20. **Helmet Mounted Display (HMD).** Is the helicopter equipped with helmet-mounted display (HMD) for day and night operation? If so, details of the HMD to be indicated.
21. **Emergency Location Transmitter (ELT).** Is the helicopter equipped with COSPAS-SARSAT approved ELT and is it interfaced with GPS/INS-GPS?

OPERATIONAL CHARACTERISTICS

22. **Performance.** Performance requirements must be stated in Indian Reference Atmosphere conditions and Hover out of Ground Effect (HOGE) is to be considered for hover performance and all take offs and landings.
- (a) **Payload.** With minimum two pilots on board at sea level in separate missions: -
- (i) What is the maximum number of passengers it can carry?
- (ii) What is the maximum internal load it can carry?
- (iii) What is the radius of action for 1000 kg underslung load with 20 minutes fuel reserve?

(iv) How many lying casualties can be carried? Specify details of stretcher being provided with the helicopter.

(v) How many lying casualties can be carried with one medical attendant?

(b) **High Altitude Mission Requirements.** What is the maximum payload carrying capability of the helicopter for the following mission?

(i) With two pilots on board, take off from a helipad at 3.5 km pressure altitude, cruise for 30 minutes, hover OGE, land and take off from a helipad at 6 km pressure altitude, cruise for 30 minutes and land at start point with at least 20 minutes fuel reserve.

(ii) The minimum equipment fit for performance of this mission to be specified.

(c) **Take Off and Landing.** Is the helicopter capable of unrestricted 'sit downs' and 'lift offs' from semi-prepared surface.

(d) **Service Ceiling.** Is the service ceiling of the helicopter 6500m or higher? All Up Weights corresponding to service ceiling at different altitudes upto 6500m or higher should be indicated by the vendor.

(e) **Climb.**

(i) What is the vertical rate of climb at maximum AUW at sea level and zero wind conditions using maximum rating at ISA + 20°C ?

(ii) What is the rate of climb at max AUW at sea level at ISA + 20°C using maximum rating at the recommended climb speed?

(f) **Speeds.** Vendor to indicate the following speeds at maximum AUW at ISA + 15°C at sea level:-

(i) Continuous cruise IAS.

(ii) VNE.

(g) **Range.** Indicate maximum range of the helicopter at sea level at ISA + 15 °C with two pilots (*specify range details with payload commencing from 300 kgs in steps of 100 kgs upto maximum internal load capability of the helicopter*).

(h) **Endurance.** Indicate following endurance parameters of the helicopter at sea level at ISA + 15 °C with two pilots:-

(i) Endurance speed for various altitudes.

(ii) Duration for various altitudes.

(j) **Manoeuvrability.** What is the instantaneous load factor that the helicopter is cleared for at sea level?

(k) **Sideways and Rearwards Flight.**

(i) What is the permissible sideways and rearwards speed for the helicopter at maximum AUW and 90 % maximum AUW at sea level?

(ii) What is the wind speed (*from any direction*) upto which full directional control is available at hover at 3 km pressure altitude at maximum AUW and 90% of maximum AUW?

(l) **Turn on the Spot.** What is the maximum rate of turn on the spot of the helicopter to either side at maximum AUW and 90% of maximum AUW up to 3 km pressure altitude?

(m) **Quick Stop and Hover.** Is it possible to execute a level flight quick stop and hover from cruise speed at maximum AUW and with CG at maximum permissible forward and rear positions?

(n) Is the helicopter able to achieve maximum forward speed in level flight with maximum permissible rearward CG throughout its operating envelope?

23. **Safety Features.**

(a) Is it possible to execute safe touch down with full directional control in autorotation at 3 km pressure altitude at maximum AUW for the altitude?

(b) Is the helicopter controllable in autorotation from zero speed to maximum permitted speed in autorotation?

(c) Does the helicopter produce unusual pitch, roll or yaw with loss of power of one engine with collective control fixed (*applicable for multi engine helicopters*)?

(d) Does the helicopter have fire protection system for engines (*applicable for multi engine helicopters*)?

(e) Is the helicopter capable of executing rapid zero speed power descent?

(f) In case the helicopter starts entering power settling (*vortex ring state*), is there sufficient visual/ audio warning and rapid recovery possible?

(g) Is the helicopter equipped with Health Usage Monitoring Systems (HUMS) or such like equipment and Cockpit Voice Recorder (CVR)? Details of the equipment and the features to be given.

24. **Night Capability.**

(a) Is the helicopter cleared for night operations? Indicate the type and details of instrument panel lighting, cabin lighting (*including wander light*), navigation lights, formation and landing lights?

(b) Are the landing light(s) compatible for NVG and non-NVG operations?

(c) Are the landing lights adjustable to allow for different types of approach and landing?

25. **Weapons / Armament and Mission Systems.**

(a) Can the helicopter be installed with weapon boom/truss/such like attachments having one weapon station on either side? Vendor should indicate weight carrying capability of weapon boom/truss/such like attachments.

(b) If so, what is the weight capability of each weapon station?

(c) Is the helicopter capable of being integrated with the weapon and mission systems mentioned below:-

(i) Surveillance/Sighting system comprising user defined Forward Looking Infra-Red (FLIR) Sensor, CCD, Laser range finder and Laser designator (*indicate the details of the same*).

(ii) User defined Rocket pods / podded guns / anti tank missiles on two weapon stations (one on each side).

(iii) User defined Flare and Chaff dispensers.

(iv) User provided 7.62 mm Medium Machine Gun.

26. Are these weapon stations controllable from pilot and co-pilot station?

27. **Rescue Hoist.**

(a) What is the type of rescue hoist equipment?

(b) What are the safety features incorporated in the rescue hoist equipment?

(c) What is the load capability of the rescue hoist?

(d) Is stretcher and/or basket for winching provided?

28. **Cargo Sling/ Swing.** Is the helicopter equipped with cargo sling/swing equipment? Indicate details of the load carrying capability of cargo sling/swing equipment? Indicate details of the load carrying capability of cargo nets.

29. **Casualty Evacuation.** Is the helicopter capable of performing casualty evacuation? Indicate equipment details for casualty evacuation to include:-

(a) Number of stretchers.

(b) Length of stretcher.

(c) Configuration.

(d) Equipment / Modification required for fitment of stretcher.

30. **Training.**

(a) Can the helicopter be used for training without any special fitment?

(b) Can the co-pilot's cyclic and collective controls be removed when not required? Vendor to indicate details of effort required for the same and limitations (if any)?

31. **Flying Qualities.**

(a) Is the helicopter easy to control and manoeuvre to permit nap of earth flying?

(b) Is the helicopter acceptably free from ground and air resonance during normal ground operations?

32. **Growth Potential.** Does the helicopter offer growth potential in terms of weight, electrical budgeting and volume for future upgrades modifications to include Obstacle Avoidance System, IFF, Data Linking, Missile Warning System, Radar Warning Receiver, Air to Air Missile, Engine Exhaust IR Suppressor and other futuristic systems?

MAINTAINABILITY AND RELIABILITY FEATURES

33. **Servicing Requirements.**

- (a) Wherever practicable, is BITE provided for avionics and other equipment, which follow 'On Condition' maintenance?
- (b) Are the reservoirs provided with transparent fluid level indicators which are easily visible from ground level?
- (c) Is it possible to carry out all O level servicing operation without the use of maintenance stands?
- (d) What type of fasteners do the panels / cut-outs requiring removal during O level servicing have?
- (e) Is it possible to carry out all but the major inspection under field conditions?
- (f) Is the dismantling and assembling procedures for maintenance and repair simple and does not upset the rigging of the helicopter?
- (g) Is it possible to service the helicopter by line replacement of units?
- (h) Are all pipelines and electric wires marked sequentially and coded system wise for ease of identification and fault tracing.
- (j) Is the helicopter fitted with HUMS or similar health monitoring systems?
- (k) What are the various servicing intervals/ intervention on the helicopter, based on hours and calendar period. Of these servicing intervals, which can be carried out by Indian Army maintenance personnel at unit/base and for which all servicing the helicopters will be forwarded to OEM/ Vendor servicing location?
- (l) For the inspections and servicing to be carried out at unit/base, what is the number of technical trade personnel requirement as per the various trades?

(m) What all tools, test equipment, GHE/GSE will be required and provided by OEM/Vendors for servicing at the IA bases? What would be calibration period for test equipment and turn around time for calibration?

(n) What will be the warranty period on helicopter components, initial and also on rotables and parts replaced in normal usage after completion of TBO life?

(o) In case of acquiring of helicopter by Army Aviation after 05/10/15 years of service, will be complete MToT be available?

(p) Indian Army operates with concept of five trades, will OEM/Vendor provide customised training for five trades or will the training be as per OEM standard curriculum?

34. **Interchangeability.** Are all major components, LRUs, parts and sub-assemblies fully interchangeable?

35. **Accessibility.**

(a) Are all components/parts requiring inspection and scheduled or unscheduled servicing accessible?

(b) Are handgrips, step-ways and walk-ways provided to facilitate inspection and ground handling?

36. **Servicing Timings.** What is the Turn Round Time of the helicopter for refuelling? Give the details for the following activities:-

(a) Time required for Pre-flight Checks/ Inspection.

(b) Time required for Post-flight Checks/ Inspection.

(c) The servicing man-hours for O level, I level and D level servicing operations required per flying hour for the basic helicopter.

(d) What is the time and manpower required to effect an engine change under field conditions?

37. **Reliability.** What is the helicopter availability with less than 5% mission abort probability due to malfunction? List out the MBTF of major LRUs.

38. **Servicing Periodicity.** What is the duration possible to operate away from base in terms of days and flying hours, without the use of any special ground or test equipment?

39. **Electro-Magnetic Interference/ Compatibility.** Do the systems meet the relevant EMI/EMC standards? Give details.
40. **Ground Support Equipment.** Is the Ground Support Equipment (Ground Equipment Test / servicing equipment and tools) hand tow-able or easily manoeuvrable by a maximum of two persons?
41. **Standardisation.** Is the helicopter certified from an internationally accredited (*civil/military*) certification agency? Provide details of the same.

Logistic Support

42. **Tools and Ground Support Equipment.** Would the vendor supply the Tools and Ground Support Equipment and maintenance spares in full range and depth to cover the complete in service life of the helicopter?
43. **Availability/ Creation of Infrastructure.** Vendor to provide the details of facility for carrying out 'D' level maintenance and infrastructure required at Army Aviation bases to carry out 'I' level maintenance activities.
44. **Trials.** Field Evaluation Trials shall be carried out as per timelines indicated in Annexure A of Dap 2020.
45. The vendor may indicate if the same helicopter and/ equipment is being used by other operators.

Appendix 'B'

(Refer to Para 13, 14, 24, 33 & 37(a) of RFI)

INFORMATION PROFORMA1. Name, Address and Unique ID (if any) of the Vendor/Company/Firm.

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

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

Original Equipment Manufacturer (OEM) Yes/No

Indian Leasing Agency Yes/No (Details of registration to be provided)

Authorised Vendor of OEM Yes/No (attach details, if yes)

Others (give specific details) _____ .

3. **Contact Details.**

Postal Address: _____

City: _____ Province/ State: _____

Country: _____ Pin/Zip Code: _____

Tele: _____ Fax: _____

URL/Website: _____ Email: _____

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

Name & Address: _____

Pin code: _____ Tele: _____ Fax: _____

Email: _____

5. **Financial Details.** Category of Industry (Large/Medium/Small Scale): _____

6. **Certification by Quality Assurance Organisation.**

<u>Name of Agency</u>	<u>Certification</u>	<u>Applicable from (date& year)</u>	<u>Valid till (date & year)</u>

7. **Details of Registration.**

<u>Agency</u>	Registration No	Validity (Date)	Equipment
GeM			
DGQA/DGAQA			
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: _____
(Indigenous leasing capability be indicated) (Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature): _____

(c) Whether OEM or Authorised Lessor: _____

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

(e) Industrial License 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) ROM price for leasing of 20 Light helicopters for 05 years with Buy option at the end of the lease period in the following format (not restricted):-

<u>Ser No</u>	<u>Item</u>	<u>Unit Cost (in INR)</u>	<u>Remarks</u>
(i)	Helicopter		
(ii)	GSE / GHE including helicopter towing equipment for moving helicopter		
(iii)	Packing & Transportation		
(iv)	Training including training aids, CBT packages & Deputation		
(v)	PBH Cost (aa) Minimum number of annual hours for which IA would need to pay irrespective of usage (ab) Cost of PBH over and above, the minimum hrs flown in compliance with the provisions of para 11 and 14 of RFI		
(vi)	Maintenance Tools and Equipment for 'O' level maintenance		
(vii)	Operator's Manual and Technical Literature/ Documentation		
(viii)	Additional Support Eqpt		
(ix)	Cost of Insurance (Amount insured to be indicated)		
(x)	Residual cost of helicopters for Buy at end of 2nd, 3rd, 4th and 5th year of lease.		
(xi)	Annual maintenance cost post lease period as per breakdown at SI (v) above (for 10 years)		

<u>Ser No</u>	<u>Item</u>	<u>Unit Cost</u>	<u>Remarks</u>
(xii)	Cost of integration (aa) 7.62 mm Medium Machine Gun (ab) V/UHF SDR (ac) SATCOM (ad) IFF		
(xiii)	Misc Cost (if any)		

(l) ROM price for leasing of 20 helicopters (RSH) for 05 years with option to extend the lease period to another 05 years in the following format (not restricted):-

<u>Ser No</u>	<u>Item</u>	<u>Unit Cost</u>	<u>Remarks</u>
(i)	Helicopter		
(ii)	GSE / GHE including helicopter towing equipment for moving helicopter		
(iii)	Packing & Transportation		
(iv)	Training including training aids, CBT packages & Deputation		
(v)	PBH Cost (aa) Minimum number of annual hours for which IA would need to pay irrespective of usage (ab) Cost of PBH over and above, the minimum hrs flown in compliance with the provisions of para 11 and 14 of RFI		
(vi)	Maintenance Tools and Equipment for 'O' level maintenance		
(vii)	Operator's Manual and Technical Literature/ Documentation		
(viii)	Additional Support Equipment		
(ix)	Cost of Insurance (Amount insured to be indicated)		
(x)	Residual cost of helicopters for Buy at end of 2nd, 3rd, 4th and 5th year of lease.		

<u>Ser No</u>	<u>Item</u>	<u>Unit Cost</u>	<u>Remarks</u>
(xi)	Annual maintenance cost post lease period as per breakdown at SI(v) above (for 10 years)		
(xii)	Cost of integration (aa) 7.62 mm Medium Machine Gun (ab) V/UHF SDR (ac) SATCOM (ad) IFF		
(xiii)	Misc Cost (if any)		
<u>Total Cost of Project</u>			

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

11. Experience of equipment handling in Aviation sector including details.

12. Any other relevant information. _____

13. **Declaration.** It is certified that:-

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

(b) The _____ (name of firm) has never been banned/de-barred for doing business with MoD/Gol/any other government organisation and that there is no inquiry going on by CBI/ED/ any other government agency against the firm.

Note:- Para 122 and Appendix K of Chapter II of DAP 20 may be referred.

(Authorised Signatory)