

REQUEST FOR INFORMATION (RFI) :LOGISTIC DRONES

1. The Ministry of Defence, Government of India, intends to procure **quantity 570 Numbers** Logistic Drones for the Indian Army. Two versions of Logistic Drones are envisaged ie **Logistic Drones (Standard)(S) for deployment upto 12000 ft and Logistic Drones (High Altitude) (HA) for deployment above 12000 ft.**
2. With the view to identify probable vendors who can undertake the said project, OEMs/ Authorised Vendors are requested to forward information on the product which they can offer. The parameters/ broad specifications of the equipment are mentioned in the questionnaire attached as per **Appendix 'A'**. In addition the vendors are required to furnish details as per **Appendix 'B'**.
3. This Request for Information (RFI) consists of four parts as under:-
 - (a) **Part I.** **Operational characteristics and features** that should be met by the equipment.
 - (b) **Part II.** Maintainability aspects of the equipment.
 - (c) **Part III.** The **methodology of seeking response of vendors.** Submission of incomplete response will render the vendor liable for rejection.
 - (d) **Part IV.** Guidelines for Framing **Criteria for Vendor Selection/Pre-Qualification** in Buy (Indian-IDD), Buy (Indian) and Buy & Make (Indian) Cases.

PART I : OPERATIONAL REQUIREMENTS AND BROAD TECHNICAL PARAMETERS

4. **Intended Use Of Equipment (Operational Requirements).** Indian Army seeks Logistic Drones for carrying out logistic tasks towards **Last Mile Delivery** for forward troops deployed along the border areas with capability of operation in wind/gust condition, rain/Snow etc. The mandatory characteristics are as under:-
 - (a) **Components.** Each Logistic Drones should consist of one Aerial Vehicle (AV) per equipment, One Man Portable Ground Control Station (MPGCS), One Remote Video Terminal (RVT), One colour day video camera, Monochromatic Night Thermal Sensor and One set of spare battery, if applicable.

(b) **Payload /Weight Carrying Capability.** The range of **Weight Carrying Capability** for the Drones, excluding **colour day video camera, Monochromatic Night Thermal Sensor** is as under:-

(i) **Logistic Drones (HA).** Between 20-40 Kg.

(ii) **Logistic Drones (S).** Between 40-80 Kg.

(c) **Operational Altitude.**

(i) **Logistic Drones (HA).** 12000-18000 ft above Mean Sea Level with capability of achieving not less than 500m Above Ground Level (AGL).

(ii) **Logistic Drones (S).** Upto 12000 ft above Mean Sea Level with capability of achieving not less than 500m Above Ground Level (AGL).

(d) **Operational Temperature.**

(i) **Logistic Drones (HA)**

Max- Between 40⁰ C to 45⁰ C

Min - Minus 20⁰ C to Minus 10⁰ C.

(ii) **Logistic Drones (S).**

Max- Between 40⁰ C to 45⁰ C.

Min - Upto 0⁰ to 5⁰ C.

(e) **Mission Range.** The mission range with maximum All Up Weight (AUW) should not be less than 10-20 Km (one way).

(f) **Endurance.** With max AUW including the Optical Payload mentioned at Para 4 (a) at 500 m above take off altitude the endurance, should be minimum 45 minutes.

(g) **Map.** Both versions of Logistic Drones should be compatible with All Defence Series Map and GPS, GLONASS, NAVIC and IRNSS. All types of maps provided with the system should be upgradable.

(h) **Launch and Recovery.** Both versions of Logistic Drones must have launch and landing capability on an unprepared area of not more than 25 M x 25 M.

(j) **Crew.** Maximum two persons.

(k) **Shelf Life.** Logistic Drones must be capable to withstand not less than **5000** landings for **High Altitude Version** and not less than **10,000** landings for **standard version.**

5. **Important Technical Parameters**

- (a) **Flight Mode.** Both version of Logistic Drones must have Fully Autonomous mode, Manual mode and return home mode.
- (b) **Security / EW Interference.** Both versions of Logistic Drones should be hardened against EW interference and should have anti-jamming and anti-spoofing properties. They must be compliant to MIL STD 461 E.
- (c) **IFF Feature.** Both versions of Logistic Drones should have IFF feature to avoid friendly engagement with own Air Space users in tactical battle area.
- (d) **Geo-References.** All geo-references must be displayed in Latitude-Longitude/Indian Military Grid Reference (IMGR) (user selectable).
- (e) **Compliance to Metric System.** Both versions of Logistic Drones should be capable of using International System units or International System derived units.
- (f) **Compliance to Environmental Test Procedures.** Both version of Logistic Drones should be compliant with the environmental test procedures as per Table 31 of JSS 55555.
- (g) **Software.** The software in both version of Logistic Drones should be validated as per 1EEE 12207.

PART II :MAINTAINABILITY ASPECTS

6. Vendors should confirm that following conditions are acceptable:-

- (a) **Repair and Maintenance Aspects.** Post warranty, engineering/ maintenance support of the equipment will be by in-house maintenance agency i.e Electronics and Mechanical Engineers (EME) for complete life cycle of the product being procured. For this, developer of the equipment should plan and develop repair/engineering support package comprising readily available spare parts, assemblies or sub-assemblies test Jigs, maintenance tools and technical literature. The system should be easily repairable on account of design and construction mentioned above and after suitable training of in-house repair agency technicians.
- (b) **Design & Construction.** The logistic Drones and it's constituents should meet the following requirements as far as possible:-
- (i) Modular in construction.
 - (ii) Built in Test Equipment and Power On self-Test to identify defects upto Printed Circuit Boards/modules.
 - (iii) Use of military grade indigenous components.

(iv) Should have capability to absorb software upgrades and should have adequate memory for upgradation.

(v) Should have a tangible obsolescence management plan and upward compatibility for latest modules.

(vi) **Generators and Batteries.** The generators and batteries. If applicable, should be indigenous. The generators should be compliant to latest Central Pollution Control Board specification.

(c) **Special Maintenance Tools, Special Test Equipment and Test Jigs.** All special Maintenance Tools, Special Test equipment and Test Jigs will be developed for the equipment to support diagnostics and repairs at various echelons of repair as per repair philosophy of Indian Army.

(d) **Technical Literature.** All technical literature will be developed as per joint Service Specification 0251-01: 2015 (Revision No 2) and will be made available to the vendor in soft copy and hard copy will be made available by the vendor prior to Maintenance Evaluation Trials (MET). The following publications as per specified standards must be made available:-

(i) User Hand Book (UHB)/Operator's manual in English and Hindi.

(ii) Design Specification.

(iii) Technical Manual (Part I to IV):-

(aa) **Part I.** Technical description, specification, functions of various system.

(ab) **Part II.** Inspection/ maintenance tasks, repair procedures, materials used, fault diagnosis and use of Special Maintenance Tools and Special Test Equipment (SMT & STEs).

(ac) **Part III.** Procedure for assembly / disassembly repair up to component level, safety precautions.

(ad) **Part IV.**

(aaa) Part list with drawing reference.

(aab) List of Special Maintenance Tools/Special Equipment with Test Bench.

(iii) Manufactures Recommended List of Spares (MRLS)

(iv) Illustrated Spare Part List (ISPL).

- (v) Technical manual on STEs with drawing reference.
 - (vi) A class IV (or better) Interactive Electronic Technical Manual (IETM) will be developed using above technical literature.
- (e) **Training and Training Aggregates.**
- (i) The vendor would be required to organize training for maintenance personnel to undertake repair and maintenance of equipment.
 - (ii) Requirement of training aggregation for conduct of training via training aids, projection system, complete equipment with accessories, technical literature, charts, slides, blow up diagram, training work models, training brochures, IETM should also include symptom-fault correlation.
- (f) **Product Support and Upgradability.** The seller will guarantee product support for 15 years. The equipment should be upgradable in hardware/software by the manufacturer, if required, for the enhanced performance features or due to modifications required to obviate the recurring defects/ Fault/ obsolescence.
- (g) **Qualitative Requirements for Equipment having Software.** Software used. Except the software used in COTS equipment, should undergo, software quality assurance as per relevant and latest international military standards. The software life cycle concept will be followed /observed. The software should be restorable in field. Any upgrades or patches required in the software will be provided free of cost. Adequate memory should be available to accept any upgradation.
- (h) **Mean Time Between Failure (MTBF) and Mean Time to Repair (MTTR).** Mean Time Between Failure should be 15 days and Mean Time to Repair in field should be 30 days.
- (j) **Counter for Usage.** Software/Mechanical counter be provided to display cumulative in-service usage for facilitating preventive/ periodic maintenance.
- (k) **Maintenance Evaluation Trial (MET).** To check maintenance of logistic Drones by the maintenance agency that is Electronics and Mechanical Engineers (EME) the equipment will be subjected to a Maintainability Evaluation Trial. The details of Engineering Support Package and training to include Manufactures Recommended list of Spares, to including PCBs, LRUs and SRUs, special Maintenance Tools, special Test equipment and Test Jigs, training aggregates and technical literature will be decided during the Maintainability Evaluation Trial (MET). The vendor will be required to give an undertaking to provide the spares and Engineering Support throughout the life cycle of the equipment. The vendor should also provide details of firmware (embedded software) in the equipment.

7. Tentative date of issue of RFP will be intimated later. The approximate quantity of both versions of Logistic Drones that can be delivered by OEMs/vendors within **18-24 months** from the date of signing of contract should be clearly mentioned in the response.
8. The parameters/broad specifications of the equipment are mentioned in the questionnaire attached as per **Appendix 'A'**. The vendors are required to respond to the same.
9. Vendors should confirm that following conditions 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 submitting of offers.
- (b) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.
- (c) The equipment of all TEC cleared vendors 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.
- (d) Amongst the vendors cleared by GS evaluation, a **Contract Negotiation Committee** would decide the lowest cost bidder (L1) and conclude the appropriate contract.
- (e) Vendor would be bound to provide product support for time period specified in the RFP which includes spares and maintenance tools/jigs/fixtures for operator level and field level repairs.
- (f) The vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VI of DAP- 2020 (placed on www.mod.nic.in).
- (g) **Offset (if applicable)**. The vendor has to undertake offset contracts amounting to ____% of the value of commercial proposals (Refer Appendix D to Chapter II).
- (h) **Integrity Pact**. An integrity pact along with appropriate Earnest Money Deposit (**EMD**) is requested to be submitted post RTP stage.
- (j) **Performance-cum-Warranty Bank Guarantee**. Performance - cum - Warranty Bank Guarantee both equal to 3% value of the contract inclusive of taxes

and duties **or as amended from time to time** is required to be submitted after signing of contract.

(k) **Transfer of Technology (if applicable)**. The details of Transfer of Technology, if applicable are required to be submitted post RFP stage.

10. Vendors must fill the form of response as sought vide Appendix 'A' & '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.

11. The filled form should be dispatched at the under mentioned addressees: -

(a) **Directorate General of Supplies and Transport (ST-11)**

QMG Branch, Room No 323, 'A' Wing, Sena Bhawan
Integrated HQ of MoD (Army)
New Delhi-110011
Tele Number – 011-23018592
eMail ID: dirtpt-ihq@nic.in

(b) **Directorate General of Capability and Development (RFP Cell)**

General Service Branch
Integrated HQ of MoD (Army)
New Delhi-110011

(c) **Additional Director General
Acquisition Technical (Army)**

New Delhi-110011
Tele Number – 011-23012150
eMail ID tmls-mod@nic.in

12. Last date of acceptance of filled form is **Eight Weeks** from hosting of RFI on ADG PI Website. The vendors shortlisted for issue of RFP would be intimated.

13. Vendor interaction may be planned if considered necessary.

14. The Government of India invites responses to this request only from Original Equipment Manufacturers (OEM)/Authorised Vendors/Government Sponsored Export Agencies (applicable in the case of countries where domestic laws do not permit direct export by OEMs). The end user of the equipment is the Indian Armed Forces.

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

**PART-IV :GUIDELINES FOR FRAMING CRITERIA FOR VENDOR SELECTION/
PRE-QUALIFICATION IN 'BUY (INDIAN-IDDM)' 'BUY (INDIAN)' AND
'BUY & MAKE (INDIAN)' CASES**

16. The guidelines prescribed for short-listing/ pre-qualification of Indian vendors in Buy (Indian-IDDM), Buy (Indian) & Buy & Make (Indian) cases are enumerated in the succeeding paragraphs.

17. **Parameters.**

(a) **General Parameters.**

(i) Applicant Entity should be an Indian Vendor as defined at Paragraph 20 of Chapter I of DAP 2020.

(ii) Business dealing with applicant Entity or any of its allied entities should not have 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 willful defaulter.

(iii) “**Entities**” will include companies, with whom the Ministry of Defence has entered into, or intends to enter into, or could enter into contracts or agreements.

(iv) “Applicant entity” may be a company, subsidiary, an associate company (as defined in the Companies Act, 2013), a consortium or a Joint Venture (JV).

(b) **Technical Parameters.**

(i) Vendor shall be a manufacturing entity or a system integrator of defence equipment and not a trading company, except in cases where the OEM participates only through its authorised Vendors.

(ii) Minimum two year experience in broad areas like manufacturing/ electronics/ explosives etc. as applicable in the instant procurement case. If not, then cumulative experience of at least three years in above areas, resulting in gaining of competence for manufacturing the proposed product. (In case the SHQ feels that for a particular equipment a lesser experience could be accepted, then the same should be got approved by the competent authority before including the same in the RFP).

(iii) Where product involves integration, previous experience of not less than one year/ one project in integration of systems/ equipment shall be required.

(c) **Financial Parameters.**

(i) **Average Annual Turnover.** Minimum average annual turnover for last three financial years, ending 31st March of the previous financial year, should not be less than 30% of estimated cost of the Buy (Indian-IDDM) and Buy (Indian) project and for Buy & Make (Indian) should not be less than 30% of estimated cost of the Make portion.

(ii) **Net Worth.** Net worth of entities, ending 31st March of the previous financial year, should not be less than 5% of the estimated cost of the Buy (Indian-IDDM) and Buy (Indian) project and for Buy & Make (Indian) should not be less than 5% of estimated cost of the Make portion. For orders above ₹ 5000crores, the Net Worth of group companies can be considered on production of suitable documentary assurance.

(iii) **Insolvency.** The entity should not be under insolvency resolution as per Indian Bankruptcy Code at any stage of procurement process from the issuing of RFP to the signing of contract.

(iv) **Credit Rating(Desirable Financial Parameter).** Long term credit rating equivalent to CRISIL rating on Corporate Credit Scale as CCR-BBB or better, and SME-04 or better for SMEs issued by credit rating agencies recognized by SEBI. Credit rating should be as on 31st March of the previous financial year.

Note 1: All the above Financial Parameters, except Paragraph 17(c)(iii) above i.e Insolvency will not be applicable for Capital Acquisition cases where estimated cost is ₹150 crores and below. However, Net worth of entities should not be negative.

Note 2: The turnover and net worth of the vendor shall be rounded off to the nearest lower ten/ hundred crores so as to keep the estimated cost of procurement confidential).

(d) **Other Parameters.**

(i) **Industrial License (IL).** Vendors should be either holding a valid defence industrial license or should have applied for the same before responding to RFP. In any case the vendor must confirm holding of IL before commencement of FET. (Items requiring IL will be as per DIPP Press Note 3 of 2014 as amended from time to time).

(ii) **Registration.** Registered for a minimum of two years (one year for SMEs). Minimum number of years not applicable for JVs constituted specifically for a project.

18. **Stipulations for Applying Parameters.**

(a) Areas like manufacturing/ electronics/ explosives etc. referred to at Paragraph 17(b)(ii) should be defined in each case of procurement.

(b) In case the Applicant Entity is unable to meet the Financial Parameters by itself, it may rely on its Holding Company (as defined in the Companies Act, 2013 and amendments thereof) ("Companies Act") for fulfillment of the Financial Parameters, in which case reliance must be placed on the Holding Company towards fulfillment of ALL the Financial Parameters.

(c) In case the Applicant Entity is unable to meet one or more of the Technical Parameters by itself, it may rely on a Group Company(ies) for fulfillment of the Technical Parameters. A Group Company in relation to the Applicant Entity may be:-

(i) A company of which the Applicant Entity it is an Associate Company. Such company should have ownership, directly or indirectly, of at least 26% of the voting shares of the Applicant Entity.

(ii) A company which is an Associate Company of the Applicant Entity. The Applicant Entity should have ownership directly or indirectly, of at least 26% of the voting shares of such Associate Company.

(iii) A Company with whom the Applicant Entity is commonly owned, directly or indirectly, for at least 26% of the voting shares by another company. For example: An Applicant Company A is an Associate Company of Company B, in which B holds at least 26%. Further, C is also an Associate Company of B, in which B holds at least 26%. In this case the Applicant Company may use the credentials of C as well.

(iv) The Holding Company and Subsidiary Companies (as defined under the Companies Act) of the Applicant Entity.

(d) The Applicant entity may be a single entity or a group of entities (the "Consortium"), coming together to implement the project. In such case:-

(i) The credentials of only those members or their related entities may be counted, who have at least 26% equity stake in the Consortium.

(ii) Each Consortium should have a designated Lead Member.

(iii) For Technical Parameters, any of the Consortium members or their Group Companies may meet the criteria.

(iv) For Financial Parameters; the Turnover and Net Worth of the Consortium Member shall be reckoned proportionate to Consortium Member's equity stake in the Consortium, and each Consortium member should meet the other criteria pertaining to Insolvency and Credit Rating. In

case the Consortium Member relies on its Holding Company for any one of the above-mentioned Financial Parameters, then reliance must be placed on the Holding Company for meeting all the financial Parameters.

(e) Vendors should provide all necessary self-authenticated documentation in support of their achievement of criteria. Such documentation should inter-alia include:-

(i) Details of projects/ supply orders successfully executed in the last two years.

(ii) Annual reports for three years of applicant entity, parent and associate companies, consortium and JV partners.

(iii) Details of shareholders, promoters, associated, allied and JV companies.

(iv) Details of vigilance action, viz. ongoing investigation and suspension/ debarment/ blacklisting actions against the applicant entity or any of its allied entities, parent company or consortium and JV partners, if any by any Department/agency of Central Government.

(v) A certificate from CA/CS indicating the financial parameters for the last three years.

(Note: If a vendor is already a supplier to MoD and/ or has already provided the above documents in such cases, it should be necessary for the vendor to resubmit only such documentations as is necessary to update the above).

(f) Any vendor furnishing false information will be liable for action as per existing guidelines.

RFI QUESTIONNAIRE : LOGISTIC DRONES (STANDARD)(S) AND LOGISTIC DRONES (HIGH ALTITUDE) (HA)

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
1.	<u>Physical Parameters</u>	
(a)	<u>Components.</u>	
	(i) What are the various components of Logistic Drones (S) ?	
	(ii) What are the various components of Logistic Drones (HA) ?	
(b)	<u>Weight.</u>	
	(i) What is the breakdown of the weight of each component the Logistic Drones (S) incl backpack?	
	(ii) What is the breakdown of the weight of each component the Logistic Drones (HA) incl backpack?	
	(iii) What is the maximum take-off All Up Weight (AUW) of Logistic Drones (S) ?	
	(iv) What is the maximum take-off AUW of Logistic Drones (HA) ?	
(c)	<u>Pay load.</u>	
	<p>(i) <u>Logistic Drones (S)</u></p> <p>(aa) What is the payload for Logistic Drones (S)?</p> <p>(ab) What are the securing mechanisms of the payload?</p> <p>(ac) Whether it is compatible with colour day video camera, monochromatic and night thermal sensor ?</p> <p>(ad) What is the resolution of colour day video camera and monochromatic night thermal sensor?</p> <p>(ae) Are Optoelectronic equipment (Day & Night Camera) compliant to JSS-5855-11-2019?</p> <p>(af) Is auto tracking and detection feature available?</p> <p>(ag) Please specify whether the payload is All-in-one modular or separate payload for day and night.</p> <p>(ah) What is the payload carrying mechanism ? Is there any container required to carry the payload ?</p> <p>(aj) That is the payload release mechanism ?</p> <p>(ak) What is the Emergence Release mechanism ?</p>	
	<p>(ii) <u>Pay load Logistic Drones (HA)</u></p> <p>(aa) What is the payload for Logistic Drones (HA).</p> <p>(ab) What are the securing mechanisms of the payload?</p> <p>(ac) Whether it is compatible with colour day video camera, monochromatic and night thermal sensor ?</p> <p>(ad) What is the resolution of colour day video camera and monochromatic night thermal sensor?</p> <p>(ae) Are Optoelectronic equipment (Day & Night Camera) compliant to JSS-5855-11-2019?</p> <p>(af) Is auto tracking and detection feature available?</p>	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
	(ag) Please specify whether the payload is All-in-one modular or separate payload for day and night. (ah) What is the payload carrying mechanism ? Is there any container required to carry the payload ? (aj) That is the payload release mechanism ? (ak) What is the Emergence Release mechanism ?	
(d)	<u>Dimensions</u> (i) What are the dimensions of each major component of the Logistic Drones (S) ? (ii) What are the dimensions of each major component of the Logistic Drones (HA) ? (iii) What are the dimensions of the backpack provided with Logistic Drones (S) ? (iv) What are the dimensions of the backpack provided with Logistic Drones (HA) ?	
<u>Operational Parameters</u>		
(e)	<u>Range.</u> (i) What is the Maximum Mission Range of the Logistic Drones (S) with maximum AUW Up to 12000 ft ?. (ii) What is the Maximum Mission Range of the Logistic Drones (HA) with maximum AUW above 12000 ft ?	
(f)	<u>Altitude.</u> (i) What is the Highest Achievable Launch Altitude (Above Mean Sea Level) by the Logistic Drones (S) with maximum AUW (AMSL in meters)? (ii) What is the Highest Achievable Launch Altitude (Above Mean Sea Level) by the Logistic Drones (HA) with maximum AUW (AMSL in meters)? (iii) After launch from the highest launch altitude (as given above), what is the maximum altitude that the Logistic Drones (S) is capable of gaining (Above Ground Level in meters)? (iv) After launch from the highest launch altitude (as given above), what is the maximum altitude that the Logistic Drones (HA) is capable of gaining (Above Ground Level in meters)?	
(g)	<u>Geo-Reference.</u> (i) Are both the Logistic Drones compatible with Indian Military Grid Reference bases on Defence Service Map? (ii) Whether equipment display console simultaneously read out 8 figure DSM Grid Reference as well as geo coordination in degree minutes seconds format?	
(h)	<u>Endurance.</u> (i) When launched at maximum mission range, with maximum take-off All Up Weight (AUW) at the maximum altitude (AGL), what is the endurance of the Logistic Drones (S) at AMSL? (ii) When launched at maximum mission range, with maximum take-off All Up Weight (AUW) at the maximum altitude (AGL), what is the endurance of the Logistic Drones (HA) at AMSL?	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
(j)	<p><u>Launch & Recovery.</u></p> <p>(i) What is the Launch and Recovery mechanism offered in the Logistic?</p> <p>(ii) Can the Logistic Drone be launched and recovered within an unprepared area of not more than 25 Meter x 25 Meter? Give the exact area required for launch and recovery.</p>	
(k)	<p><u>Acquisition Landing Area.</u></p> <p>(i) What is the maximum look angle from the vertical at which the Logistic Drones (S) can identify landing area?</p> <p>(ii) What is the maximum look angle from the vertical at which the Logistic Drones (HA) can identify landing area?</p>	
(l)	<p><u>System Accuracy.</u> What is system accuracy during flights (in CEP)?</p>	
(m)	<p><u>GPS.</u></p> <p>(i) Whether the system is compatible with GPS, GLONASS & IRNSS (subject to its development and to be defined by the User during RFP).</p> <p>(ii) What is accuracy of Geo reference coordination.</p>	
(n)	<p><u>Deployment Time.</u> From transportation condition (man pack), how much time does it take to assemble the complete system and deploy the same for a mission by two persons?</p>	
(o)	<p><u>Environmental Conditions.</u></p> <p>(i) What are environmental limitations which affect the operation of Logistic Drones (S)?(Specify figures / ranges)</p> <p>(aa) Wind speed.</p> <p>(ab) Humidity.</p> <p>(ac) Visibility.</p> <p>(ad) Rain.</p> <p>(ae) Snow.</p> <p>(af) Fog</p> <p>(ii) What are environmental limitations which affect the operation of Logistic Drones (HA)?(Specify figures / ranges)</p> <p>(aa) Wind speed.</p> <p>(ab) Humidity.</p> <p>(ac) Visibility.</p> <p>(ad) Rain.</p> <p>(ae) Snow.</p> <p>(af) Fog</p> <p>(iii) What is the wind conditions for takeoff/Landing of the both versions of the Drones?</p>	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
	(iv) What is the flight condition of the both versions of the Drones? (v) Details of the up gradation/degradation of the performance should be elaborated. (vi) Details of laboratories where the internal environmental testing of the equipment has been carried out. (vii) Test reports of actual tests conducted.	
(p)	<u>Observation Ranges.</u> (i) What are observations ranges of Logistic Drones (S) in terms of detection, recognition and identification of persons, vehicle and field structures to avoid collision? (ii) What are observations ranges of Logistic Drones (HA) in terms of detection, recognition and identification of persons, vehicle and field structures to avoid collision?	
(q)	<u>Destruction Mode.</u> (i) Does the system has self-destruction mode in case of hostile takeover / capture by enemy. (ii) Does it have Traffic Collision Avoidance System (TCAS).	
(r)	Is the camouflage and waterproofing mechanism available in both the Logistic Drones?	
(s)	Whether Certification is Mandatory or Not mandatory for product offered as per Annexure 21.B2.A of Indian Military Technical Airworthiness Requirements (IMTAR)-2021?	
(t)	Does the equipment offered have Military Type Certification for operation ?	
(u)	What is the frequency band of operation and wattage of transmission ?	
(v)	Does the equipment offered have Type Clearance from Wireless Planning and Coordination wing (WPC), Department of Telecommunication (DoT)?	
2. Technical Aspects of the Logistic Drones.		
(a)	<u>Flight Modes.</u> (i) What are the different flight modes for both Logistic Drones? (ii) Whether it is compatible with fully autonomous mode, manual mode and return home mode?	
(b)	<u>Software.</u> (i) Does the system has Indigenous software? (ii) How is the software security being assured by vendor and what are the debugging procedures? (iii) What is the methodology for carrying out Quality Assurance of software? (iv) Is the software upgradable? If so, will the vendor provide free software upgrades as and when available? (v) Is adequate security (sandboxing) available in the software package or is it still vulnerable to viruses and/or hacking? (vi) Has the software been verified and validated as IEEE-12207 ? (vii) Has Logistic Drones been evaluated at NABL accredited lab for environmental parameters as per Table 3-1 of JSS 55555?	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
(c)	Man Portable Ground Control Station (MPGCS). (i) What are the technical specifications, features, control options, portability, weight and ruggedisation aspects of the MPGCS?	
(d)	(ii) Can it be customized as per user requirements at no extra cost? Can additional features / software be added for improved functionality later on? (iii) What is storage facility/capability on MPGCS ? (iv) What are the specification for display like OLED/ LED/ LCD ?	
(e)	<u>Remote Video Terminal (RVT).</u> (i) Will there be a RVT? (ii) What is the maximum distance up to which the RVT located away from the MPGCS be able to receive data from Logistic Drones (HA) and Logistic Drones (S) in real time without any degradation? (iii) Can it operate without being in Line of Sight with MPGCS or the Logistic Drones and Logistic Drones (S)? (iv) Does it function on secured radio frequency or optical cable or both? All technical details and features of RVT need to be elaborated. (v) Specify whether the RVT is ruggedized, if laptop based?	
(f)	<u>Data Link.</u> (i) What is the uplink and downlink speed for two way communication with Logistic Drones? (ii) Whether it is compatible with S/C Band (2 GHz to 6 GHz) with 128 bit AES encryption?	
(g)	<u>Snapshots/Video.</u> (i) Is there an on board recording & storage capability? (ii) What is the real time transmission capability of these recordings?	
(h)	<u>Security.</u> (i) What are the anti-jamming and anti-spoofing measures incorporated in the Logistic Drones (S)? (ii) What are the anti-jamming and anti-spoofing measures incorporated in the Logistic Drones (HA)?	
(j)	<u>Data Back-Up.</u> Does the equipment have capability of backing up data? What all redundancies are provided for the same?	
(k)	<u>EMI/EMC.</u> (i) What Mil Standards are being conformed to by the equipment produced by the OEM/Vendor? (ii) Which accredited laboratory (Indian/International) has certified your equipment? Please specify details with dates. (iii) Whether it is compatible with or better than Mil Standard 461 E ?	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
(l)	<p><u>Crew.</u></p> <p>(i) How many persons are required to operate Logistic Drones (S) as crew members?</p> <p>(ii) How many persons are required to operate Logistic Drones (HA) as crew members?</p> <p>(iii) Whether they are compatible with max two persons?</p>	
(m)	<p><u>Artificial Intelligence.</u> What kind of Artificial Intelligence, if any, has been incorporated in the system? Give details.</p>	
(n)	<p>Does the system comply to industry standards of both the Logistic Drones as under:-</p> <p>(i) ISO 9001 2008/2015.</p> <p>(ii) ISO 2000 for service mgt.</p> <p>(iii) ISO 27000 for Information Security.</p> <p>(iv) AS:9100 certification which is the latest international Quality Management System standard for the Aviation, space and Defense (AS & D) Industry, created by the IAG.</p>	
3.	<p><u>Maintenance and Ergonomics Aspects of the Logistic Drones.</u></p>	
(a)	<p><u>Test Procedure.</u></p> <p>(i) Does the Logistic Drones have an inbuilt self-test mode to indicate GO/NO GO conditions for AV, MPGCS and the payload? If so, then the details thereof may be provided.</p> <p>(ii) Does the equipment have a Built In Test Equipment facility for automatic detection and troubleshooting during each booting procedure?</p>	
(b)	<p><u>Avionics.</u></p> <p>(i) Are the avionics upgradable? If so, will the vendor provide future support in terms of up-gradation of these avionics as and when better technology is available?</p> <p>(ii) What would be the maintenance requirement and schedule for the airframe and avionics of the Logistic Drones particularly the High Altitude version?</p>	
(c)	<p><u>Performance.</u> Has the OEM/Vendor conducted tests of the equipment to verify its performance particularly of High Altitude version at 12000 ft AMSL and/or above? If yes, then what was the location of these tests (including altitude for tests, endurance and range achieved in most trying conditions)?</p>	
(d)	<p><u>Tests on System.</u> What are the details of the tests performed at various altitudes (which can indicate the suitability of the equipment to perform as per details given by the vendor)?</p>	
(e)	<p><u>Mode of Operation.</u> What are the various modes of operation (Fuel operated or Battery operated) of the Logistic Drones (specify separately for each component)?</p> <p>(i) If fuel operated, specify the following:-</p>	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
	(aa) Type of fuel. (ab) Environmental requirements. (ac) Commercial availability. (ad) Details of the motor used.	
	(ii) If battery operated, specify the following :- (aa) Type of battery. (ab) Environmental requirements. (ac) Commercial availability. (ad) Charging mechanism. (ae) Service and Shelf Life. (af) Endurance. (ag) Input voltage/Ampere Hours for operation. (ah) Detachable. (aj) Space battery.	
(f)	<u>Life.</u> What is the life of the equipment in terms of number of landings? Please specify separately for standard and High Altitude Version.	
(h)	<u>Repair & Maintenance.</u> (i) What is the provision for repair and maintenance of this system? (ii) If the system is required to be routed back to the vendor for repairs, then what would be the total down time for such systems (including transportation to earmarked collection points)? (iii) Does the vendor have major repair and overhaul facility for major assemblies and component level repair? (iv) What are the levels of repair? Does it have Operator Level, Field Level and Base Level Repairs? Also, specify the scope of repairs at each level. (v) Is any major infrastructure facility required at Field level to repair/replace the components? If yes, mention the facilities required for the same. (vi) Do the components of the aerial vehicle have a specific calendar life or are they 'ON Condition' components? (vii) Give inputs on aspect related to time between overhauls / repairs, life time maintenance & spares support,	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
	<p>Obsolescence Management support etc.</p> <p>(viii) What is the repair & maintenance philosophy of the OEM to include periodicity of midlife interventions, intent towards establishment of maintenance hubs etc.</p> <p>(ix) Specify transportability of logistic Drones (Manportable /Vehicle based).</p> <p>(x) Any virtual training module for the equipment are available and will be provided ?</p> <p>(xi) Whether the details of Itemised Spare Parts Price Lists (ISPPL), Repairable Itemised Price Lists (RIPL) of assemblies/ sub-assemblies & Man Day Rates of specialists for a pd of five years post warranty can be provided ?</p> <p>(xii) Is the vendor ready to carry out life Cycle Support Contract (LCSC) ?</p>	
(j)	<p><u>Product Support.</u></p> <p>(i) What kind of 'Product Support' will you ensure? What will be the 'Time Period'?</p> <p>(ii) What life time product support can be provided?</p>	
(k)	<p><u>Shelf Life.</u> What is the likely 'Shelf Life' of the equipment?</p>	
(l)	<p><u>Comprehensive Maintenance Contract.</u> What type of CMC will be provided by the OEM/Vendor and for what duration?</p>	
(m)	<p><u>Quality Assurance.</u></p> <p>(i) What are the Quality Assurance Procedures adopted by the OEM/Vendor for environmental and functional checks?</p> <p>(ii) Does the environment tests comply to relevant parameters of of Table 3-1 of JS 55555.</p> <p>(iii) Have the tests been accredited by NABL laboratory?</p>	
(n)	<p><u>Spares.</u></p> <p>(i) Give details of vendors, sub vendors especially those with establishments in India as also readiness/Lead time towards spares provisioning.</p> <p>(ii) What should be the philosophy for management of repairs and spares post contract.</p> <p>(iii) Does the OEM / vendor has base overhaul facilities and availability of Infrastructure for the same in India?</p>	
(o)	<p><u>Product Support for Codification.</u></p> <p>(i) Is the systems / equipment codified ? If yes, give details?</p> <p>(ii) Vendor / OEM has to give acceptance to either provide existing NATO Stock Number (NSNs) of the OEM or codify the items supplied under the contract as per part list (including MRLS) in consultation with the MoD/ Directorate of Standardization in a time bound manner.</p>	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
4.	<u>Training Aspects of the Logistic Drones.</u>	
(a)	What are the training facilities available at the OEM/Vendor premises to conduct training of the Crew, Maintenance, Ordnance and DGQA personnel?	
(b)	How will the vendor assist/facilitate conduct of training for User, DGQA and Maintenance personnel in India and for what duration?	
(c)	Is there any skill set desired for the trainee?	
(d)	Is there any need for a special infrastructure for the training? Confirm whether Simulators/Training Aids for the equipment are available and can be provided by the vendor.	
(e)	Will the vendors be able to provide sectionized/cut models, 3D models, Computer Based Training packages, soft copies of User Handbook and Training Manuals and IETMs for the training and what are the likely costs of each?	
(f)	What type of user and technical description manuals are likely to be provided and what are the likely costs of each?	
(g)	Is the prototype readily available or has to be designed / manufactured? If available, please provide complete operational and technical specification of the same.	
(h)	What will be the time penalty for the mandatory and other features sought by the Indian Army to be incorporated in your equipment?	
(j)	If the equipment is to be fielded within 03/04 months, what level of technology (or type of prototype) would be made available?	
(k)	What will be the time penalty and fall out, if additional features / higher technology are asked in the prototype?	
(l)	What is the likely time period required by the vendor to field the prototype for trials post intimation of clearance in TEC? This date should factor in time for clearance, transportation etc.	
(m)	Is the OEM/Vendor willing to participate in trials as per DAP-2020 in India on 'NCNC' basis?	
(n)	What maximum equipment quantity can be made available in India for trial on 'NCNC' basis?	
(o)	What is the suitability of equipment for deployment in various types of terrain in India? Specify separately for deserts, plains, mountainous, High Altitude Area.	
(p)	What is the likely time and clearances required for import of equipment for trials in India post receipt of EUC?	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>
5.	<u>Commercial Aspects of the Logistic Drones.</u>	
(a)	Is the vendor an OEM for the equipment? If no, then does a MoU for licensed production exist between the OEM and the Indian vendor?	
(b)	<u>Indigenous Content.</u> (i) Is the equipment to be provided produced indigenously by the vendor? (ii) If yes, does this product meet the requirement of minimum 50% indigenous content on cost basis? (iii) Is the equipment Indigenously Designed, Developed and Manufactured (IDDM) by the vendor? (iv) Does the vendor hold IPR/patent for the sub systems of the equipment?	
(c)	<u>Cost of Logistic Drones.</u> (i) What is the indicative price in INR of one complete Logistic Drones being offered separately for Logistic Drones (S). Also give breakdown of cost in parts including payloads and also include taxes and custom duties (if applicable). (ii) What is the indicative price in INR of one complete Logistic Drones being offered separately for Logistic Drones (HA). Also give breakdown of cost in parts including payloads and also include taxes and custom duties (if applicable).	
(d)	<u>Cost of ESP.</u> What would be the tentative cost both the Logistic Drones for the Engineering Support Package (ESP) being offered by the OEM/Vendor?	
(e)	<u>Cost of CMC.</u> What would be the tentative cost both the Logistic Drones of CMC being offered by the OEM/Vendor?	
(f)	<u>Cost of Training.</u> What would be tentative cost both the Logistic Drones of Training on the equipment?	
(g)	<u>Categorization.</u> (i) What is the preferred categorization for supply of this equipment to Indian Army? (ii) Refer guidelines for training criteria for vendor selection / prequalification in Buy (Indian-IDDM), Buy (Indian) and Buy & Make (Indian) cases given at Annexure IV to Appendix 'A' of DAP-2020. Also refer Appendix B to this RFI.	
(h)	<u>Quantity.</u> (i) How many Logistic Drones (S) can be delivered by OEMs/vendors within 18-24 months from the date of signing of contract? (ii) How many Logistic Drones (HA) can be delivered by OEMs/vendors within 18-24 months from the date of signing of contract?	

<u>SNo</u>	<u>Specification Required</u>	<u>Response</u>			
6.	<u>Trials Related Aspect to the Logistic Drones.</u>				
(a)	<p><u>For Trials.</u> What are the parameters which should be accepted on following :-</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 40%;"> <ul style="list-style-type: none"> (i) Vendor certification. (ii) Certification by accredited labs. (iii) Trials by simulation. </td> <td style="font-size: 3em; vertical-align: middle; padding: 0 10px;">}</td> <td style="vertical-align: middle;">Give out parameters under each subheads.</td> </tr> </table>	<ul style="list-style-type: none"> (i) Vendor certification. (ii) Certification by accredited labs. (iii) Trials by simulation. 	}	Give out parameters under each subheads.	
<ul style="list-style-type: none"> (i) Vendor certification. (ii) Certification by accredited labs. (iii) Trials by simulation. 	}	Give out parameters under each subheads.			
(b)	Can vendor / OEM provide two equipment each of both versions of Logistic Drones for trials in India ?				
(c)	Is it feasible for vendor / OEM to conduct Field Evaluation Trails (FET) in India ?				
7.	<u>Vendor Selection Criteria</u>				
(a)	Is the Applicant Entity an Indian Company as defined under Companies Act 2013 ?				
(b)	Has the Applicant Entity or any of its allied entities ever been banned or suspended by MoD/ SHQ of any Government Department of Organization? Details of vigilance action viz ongoing investigations by any Department/ agency of Central Government may be provided.				
(c)	Is the Applicant Entity a manufacturing Entity or System Integrator or a Trading Company?				
(d)	Does your Company have any previous experience/ expertise in this field ? Specify the field of expertise/ experience of your company and duration of experience in years.				
(e)	Specify the turnover and net worth of your Company in the last three (03) years.				
(f)	Is your Company under insolvency resolution as per Indian Bankruptcy Code ?				
(g)	What is the Credit Rating of your Company equivalent to CRISIL rating ?				
(h)	Does your Company qualify under Start Up or MSME Category ?				

VENDOR INFORMATION PROFORMA

1. **Name of the Vendor/Company/Firm**

(Company profile including Share Holding pattern, in brief, to be attached)

2. Type (Tick the relevant category).

(a) Original Equipment Manufacturer (OEM): Yes/No

(b) Authorised Vendor of foreign Firm : Yes/No (attach details, if yes)

(c) Others (give specific details)

3. **Contact Details.**

Postal Address : _____

City : _____ State : _____

Pin Code : _____ Tele : _____

Fax : _____ URL/Website: _____

4. **Local Branch/Liaison Office/Agent (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	Certificate	Applicable from (Date and 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.**(a) **Name of Organisation**(b) **Membership Number**9. **Equipment/Product Profile (to be submitted for each product separately)**

(a) Name of Product : _____

(IDDM Capability be indicated against the product)

(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature) : _____

(c) Whether OEM or Integrator : _____

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

(e) Industrial License Number : _____

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

(g) Status (in service/ design and 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 : _____

12. **Declaration**. It is certified that the above information is true and any changes will be intimated at the earliest.

(Note: Paragraph 44 and Appendix F to Chapter II of DAP may be referred)

(Authorised Signatory)

Name :

Appointment :

Tele No :

Mob No :

eMail :