

**INVITATION FOR EXPRESSION OF INTEREST (EOI) FOR PROCUREMENT
OF QUANTITY 162 GROUND BASED AUTONOMOUS SYSTEM
UNDER 'MAKE II' CATEGORY OF DAP-2020**

References : Defence Acquisition Procedure - 2020.

Appendices :

- Appendix A** : Preliminary Service Qualitative Requirements for Ground Based Autonomous System
- Appendix B** : Commercial Evaluation Criteria.
- Appendix C** : Technical Evaluation Criteria.
- Appendix D** : Correctness Certificate.
- Appendix E** : Confidentiality Agreement.
- Appendix F** : Eoi Compliance Certificate.
- Appendix G** : Information Performa.

1. **Introduction.** The Mechanised Forces of Indian Army operates in varied terrain ranging from Plains, Deserts and High Altitude. Mechanised operations being fluid and dynamic in nature, require day and night real-time stand-off surveillance of enemy as well as seamless maintenance of logistics to support the fighting forces. Presently for continuous surveillance of dormant sectors / gaps vehicle based manned teams are deployed which in long duration causes fatigue. Also due to large silhouette, these vehicle-based manned teams are likely to be detected by enemy. For casualty evacuation and logistical support like replenishment of ammunition, fuel and spares to Armoured Fighting Vehicles along the front-line, manned teams on wheeled unprotected vehicles are utilised which are prone of enemy action and wastage of human and vehicle resources. Induction of Ground Based Autonomous System capable of mounting various types of payloads to undertake unmanned surveillance, logistic delivery and casualty evacuation will reduce manual handling and fatigue to soldiers, thereby improving combat efficiency and endurance at tactical level. Ministry of Defence (MoD), Department of Defence production has accorded an Approval-in-Principle on 02 Mar 2022 to progress the proposal under MAKE-II category issued vide MoD (DDP) ID No 18(2)/21/CMM/DP(Plg-MS) Vol-IV dt 08 Mar 2022. Feasibility Study for the project was ordered vide Additional Directorate General of Army Design Bureau (T&WS) letter No 00727/GS/ADB/Make-II (ACV) dated 09 Mar 2022. The Feasibility regarding capability of Indian Industry to indigenously design, develop and manufacture Ground Based Autonomous System within a desired time frame as per the provisions of Chapter III of DAP-2020 has been established vide Feasibility Study Report submitted by PFT vide ADG MECH INF letter No A/36019/ACV/GS/ Mech-8 dated 01 Jul 2022.

2. **Objective.** The objective of this invitation of Expression of Interest (Eoi) is to seek willingness of Indian Vendors to participate in development and procurement of Quantity 162 Ground Based Autonomous System under Make-II category of DAP-2020. Indian Vendors meeting the Technical, Commercial and Project Requirements laid out in the Eoi, will be issued a 'Project Sanction Order' to develop a prototype as per provisions of DAP-2020.



3. **Layout.** The Eol has been covered in following parts:-

- (a) **Part I** : General Information.
- (b) **Part II** : Scope of the Project.
- (c) **Part III** : Evaluation Criteria.
- (d) **Part IV** : Procedure for Submission of Response to the Eol.
- (e) **Part V** : Miscellaneous.

4. The nodal officer for this project for all queries/ clarifications/ coordination will be the **Member Secretary, Project Facilitation Team (PFT)**, Ground Based Autonomous System. Address and contact details of the nodal officer are given at **Paragraph 27 of the Eol**.

PART I : GENERAL INFORMATION

5. **Nomenclature.** Ground Based Autonomous System.

6. **Categorisation.** In accordance with **Para 5 (b) (i) of Chapter III of DAP-2020**. The design and development of the system must be indigenous. The project is further categorised as under:-

- (a) **Prototype Development Phase.** 'Make-II (Industry Funded)' in accordance with Para 5 (b) (i) of Chapter III of DAP-2020.
- (b) **Procurement Phase.** 'Buy (Indian-IDDMM)' with minimum 50% IC in accordance with Para 6 (d) of Chapter III of DAP-2020.

7. **Quantity.** The quantity of Ground Based Autonomous System is as under:-

- (a) **Prototype Quantity.** Quantity Two Ground Based Autonomous System with Surveillance, Logistic Carrier and Casualty Evacuation Payload as per PSQR No 120 to be developed within 46 weeks and cost of the same to be borne by the vendor as per the provisions of DAP 2020 and amendments thereto (as applicable).
- (b) **Procurement Quantity.** Quantity 162 Ground Based Autonomous System with Surveillance, Logistic Carrier and Casualty Evacuation Payload as per PSQR No 120, to be delivered within 24 months of award of contract (tentatively).
- (c) Required technical literature to include user handbook, complete equipment schedule, repair & technical manuals be provided with the equipment during procurement phase. Details will be further amplified in the commercial RFP.

8. **Make II Procedure.** Make-II Procedure duly available at Chapter III of DAP-2020 and amendments thereto (as applicable), will be referred to hereinafter in the case and a copy of the same is available on MoD website. The Project Facilitation Team (PFT) of Indian Army/ MoD constituted will act as interface between Indian Army and Industry during the Design and Development stage of the project.

9. **Appreciated Timelines.** Tentative timelines for the project are as given at **Serial Number 12**.



PART II : SCOPE OF THE PROJECT

Ground Based Autonomous System

10. **Scope.** Ground Based Autonomous System is conceived as a capability enhancement for Mechanised Infantry Units & Armoured Regiments and will be developed by the Indian Industry. The project is aimed at meeting this requirement indigenously.

11. **Preliminary Services Qualitative Requirements (PSQR) of the Proposed System.** PSQR (aligned to DAP-2020) of Ground Based Autonomous System is attached at **Appendix A.**

12. **Time Line and Milestones.**

<u>Ser No</u>	<u>Activity</u>	<u>Remarks</u>	<u>Timelines (from AoN)</u>
(a)	Issue of Eol	By Project Facilitation Team (PFT)	T ₀
(b)	Eol Responses Submission	By Eol respondents (Indian Vendors)	8 weeks T ₀ + 8 weeks
(c)	Eol Responses Evaluation	By Project Facilitation Team (PFT)	6 weeks T ₀ + 14 weeks
(d)	Short listing of DAs and Issue of Project Sanction Order for Development of Prototype	To selected DAs, those meeting evaluation criteria	2 weeks T ₀ + 16 weeks
(e)	Design and Development of Prototype and Prototype Readiness Review	(i) Design & Development of Prototype. (ii) Prototype Readiness Review by PFT to ensure matching of development of product as per PSQR. (iii) More than one review may be conducted, on required basis. Dates will be promulgated by the PFT, as per progress of the project	46 weeks T ₀ + 62 weeks
(f)	Single Stage Composite Trials, Conversion of PSQRs to GSQRs, Issue of commercial RFP till Contract.	As per DAP-2020 and amendment thereto as applicable. Sequence of activity after development of prototype upto signing of contract will be amplified in the PSO.	-



Development of Prototype

13. Prototype will be developed by the selected vendors after the issue of Project Sanction Order. All possible and reasonable assistance and any clarification related to functional or operational aspects of development as sought by DAs will be provided by Project Facilitation Team (PFT). Prototype Readiness Review by PFT to ensure matching development of product as per PSQR will be carried out. Necessary assistance for development of prototype shall be provided to vendors.

Solicitation of Commercial Offers

14. A commercial Request for Proposal (RFP) for 'Buy (Indian-IDDM)' phase would be issued to all DA(s) for soliciting their commercial offers. Sequence of activity after development of prototype upto signing of contract will be amplified in the PSO. **Additional technical information/ documentation, as may be necessary including those related to Indigenous Content and IPRs would also be required to be provided by the vendor prior to the issue of Commercial RFP** (as applicable).

Deliverables

15. The project is envisaged to have the following deliverables:-

- (a) **Prototype Quantity.** Quantity Two Ground Based Autonomous System with Surveillance, Logistic Carrier and Casualty Evacuation Payload as per PSQR No 120 to be developed within 46 weeks and cost of the same to be borne by the vendor as per the provisions of DAP 2020 and amendments thereto (as applicable).
- (b) **Procurement Quantity.** Quantity 162 Ground Based Autonomous System with Surveillance, Logistic Carrier and Casualty Evacuation Payload as per PSQR No 120, to be delivered within 24 months of award of contract (tentatively).
- (c) **Engineering Support Package (ESP).** An appropriate Engineering Support Package @ 10% of total cost will be required for repair & maintenance of the equipment to include Spares, Special Test Equipment / Special Maintenance Tool, Training and Technical literature to include User Hand Book, Preservation Instructions, Complete Equipment Schedule, Repair Manual and Technical Manuals. These will be provided with the equipment during the procurement phase. Details will be further amplified in the Request for Proposal (RFP).
- (d) **Warranty.** The goods supplied shall carry a standard warranty for 24 months from the date of acceptance by JRI. Details will be further amplified in the Commercial Request for Proposal (RFP).

Details of Trials / Assistance to be Provided

16. The following trial will be conducted: -

- (a) **Single Stage Composite Trials (SSCT).** The SSCT will be conducted by SHQ, post confirmation of development of prototype of Ground Based Autonomous System by the vendor to the PFT, to evaluate the performance of the Ground Based Autonomous System with respect to the requirements stated in the PSQR. Detailed Trial methodology will be formulated in consultation with the vendor and all stakeholders during the course of development of the prototype and the same will be issued before commencement of SSCT.



(b) **Assistance to be Provided.** Access to various types of equipment for collection of data for training of Artificial Intelligence software will be facilitated by the PFT. Additional assistance if any will be solely at the discretion of the PFT. In case of any damage occurring to equipment/ property/ facility/ personnel of the Indian Army while undertaking trials of the Ground Based Autonomous System, the private entity i.e the manufacturer/ vendor is liable to bear the expenses of repair/ replacement of the equipment/ property/ facility and cost of all necessary insurance coverage for the personnel undertaking trials on behalf of the private entity.

Multiple Technological Solutions

17. Multiple technology solutions are not acceptable as only limited quantity is being procured initially. The entire order will be given to the successful L1 vendor.

PART III : EVALUATION CRITERIA

Commercial Evaluation Criteria

18. Eol respondents will furnish their response to the Commercial Evaluation Criteria as per **Appendix 'B'**.

Technical Evaluation Compliance Matrix

19. The respondents to this Eol are required to furnish information and compliance/ information as per **Appendix 'C'** against PSQR of the equipment.

20. **Additional Information.** The following additional information are required to be furnished by the vendors as part of the Eol response :-

- (a) Correctness Certificate as per **Appendix D.**
- (b) Confidentiality Agreement as per **Appendix E.**
- (c) Eol Compliance Certificate as per **Appendix F.**
- (d) Information Performa as per **Appendix G.**

21. **Foreign Collaboration.** If the DA is collaborating/ plans to collaborate with a foreign technology provider, the nature of such collaboration and the technology areas being transferred must be stated in the response (please refer Para 14 of **Appendix 'G'**).



PART IV : PROCEDURE FOR SUBMISSION OF RESPONSE TO THE EoI

22. The response to the EoI shall be submitted as per formats given at **Appendix 'B'** to **Appendix 'G'**.

23. **Guidelines for Submitting EoI Responses.**

(a) The responses should be submitted strictly as per the formats given in respective Appendices. Should a vendor need to mention any other information, a separate column / row may be added. Vendors should provide compliance or non-compliance parameters and no conditional response/ compliance shall be submitted by the firm/ vendors.

(b) All responses and Appendices should be submitted in a single file / folder. Supporting documents / additional references should be submitted in a separate folder with proper reference mentioned against each parameter / sub parameter in respective appendices.

(c) Any supporting document / evidence without any reference to specific parameter of criteria will not form part of the assessment.

(d) Conditional responses to any of the parameters are not acceptable and will be considered non compliant.

24. **Rejection Criteria for Selection as DAs.** The following may lead to rejection of EoI response :-

(a) Failure to meet Commercial Evaluation Criteria given at **Appendix 'B'**.

(b) Failure to meet/ comply with the Technical Evaluation Criteria Specifications given at **Appendix 'C'**.

(c) Failure to offer compliance to any of the terms and conditions given in the EoI.

(d) Failure to submit certificates/details as mentioned at **Appendix 'D'** to **Appendix 'G'** of the EoI.

(e) Any other parameter of the response considered inadequate by the MoD, Government of India.

25. **Foreclosure Criteria.** As per provisions of Para 20, Chapter-III of DAP-2020 and amendments thereto (as applicable).

26. The EoI respondent shall submit three (03) copies of response to the EoI, clearly marking one copy as '**Original Copy**' and second & third as '**Duplicate Copy and Triplicate Copy**'. In the event of any discrepancy between them, the original copy shall govern/ prevail. Each page of the response will bear the signatures of the authorised signatory of the company. The DA shall also submit a soft copy of the response to this EoI in a CD/ DVD.



27. **The Envelops shall be Addressed as under :-**

Secretary, Project Facilitation Team
Ground Based Autonomous System
Additional Directorate General of Mechanised Infantry
Integrated HQ of MoD (Army)
Room No 525, 'A' Wing, Sena Bhawan
DHQ PO, New Delhi - 110011
email id - silverbullet@nic.in

28. The responses to this EoI must be submitted by **12 Jan 2024** at the above mentioned address.

29. The Company will be required to sign and honour the 'Confidentiality Agreement' with MoD Govt of India. The 'Confidentiality Agreement' will be furnished by each EoI respondent at the time of submission of EoI responses as per format given at **Appendix 'E'**.

PART V : MISCELLANEOUS

30. **Pre EoI Response Meeting** A pre EoI response meeting will be held through Video Conference on **01 Dec 2023 at 1100 Hours** at Additional Directorate General Mechanised Infantry, Sena Bhawan, New Delhi-11011. Vendors are required to submit their queries / clarifications / amplifications in writing to this office by **24 Nov 2023**.

31. Guidelines for penalties in business dealings with entities as promulgated by Government from time to time, will be applicable on procurement process & bidders.

32. The Pre-Contract Integrity Pact (PCIP), listed as detailed in Paragraph 92 of Chapter II of DAP-2020, shall apply mutatis mutandis to the 'Buy (Indian-IDDMM)' phase of 'Make' project.

33. Respondents would be subject to disqualification if they make false, incorrect or misleading claims in their response to this EoI. A 'Correctness Certificate' as per the format at **Appendix 'D'** will be furnished as part of the response.

34. Please acknowledge the receipt of this invitation for EoI.

File No : A/36019/GBAS/GS/MECH-7

Dated : 17 Nov 2023

Enclosures : Appendices A to G.

Chirag
(Chirag Barak)
Colonel
Secretary, Project Facilitation Team
Additional Directorate General of
Mechanised Infantry/ Mech-7



PRELIMINARY STAFF QUALITATIVE REQUIREMENT (PSQR) FOR
GROUND BASED AUTONOMOUS SYSTEM

PART-I: INTRODUCTION & OPERATIONAL PHILOSOPHY/
PROPOSED EMPLOYMENT OF EQUIPMENT

11. **Introduction.** Indian Army presently does not have any unmanned ground vehicle to undertake surveillance, casualty evacuation and delivery of loads. A custom made unmanned tracked / wheeled vehicle with desired capability is required to be developed. The nomenclature of the vehicle would be "Ground Based Autonomous System".
12. **Proposed Service Employment.** The Ground Based Autonomous System should provide a platform for unmanned and autonomous conduct of day and night surveillance, situational awareness, casualty evacuation, carriage and delivery of operational loads in Deserts, Plains and High Altitude / Mountainous terrain. An External Driver should be able to remotely operate the Ground Based Autonomous System, control all on-board equipment and get inputs from the Ground Based Autonomous System in real time.

PART-II: ESSENTIAL PARAMETERS

Operational Parameters

13. **Terrain.** Desert/ Plain terrain as obtained along India's Western Borders and High Altitude/ Mountainous terrain (up to 5000m above mean sea level) along Borders of India.
14. **Configuration.** Ground Based Autonomous System should be configured on a tracked / wheeled chassis.
15. **Service Life.** At least 15 years.
16. **Operating Temperature.** The Ground Based Autonomous System including all sub-systems should be operational in following ambient temperature conditions: -
- (a) **Plain and Desert Terrain.**
- (i) **Minimum Operating Temperature.** Between 0° to 05° Celsius.
- (ii) **Maximum Operating Temperature.** Between 40° to 45° Celsius.
- (b) **High Altitude & Mountain Terrain.**
- (i) **Minimum Operating Temperature.** Between (-)20° to (-)10° Celsius.
- (ii) **Maximum Operating Temperature.** 40° Celsius.



17. **Transportability.** Capable of being transported by:-

- (a) In-service load carrier vehicles.
- (b) In-service transport aircrafts.
- (c) In service Military Wagons.

Technical Parameters

18. **Dimensions.**

- (a) **Length.** Maximum 3500 mm.
- (b) **Overall Width.** Maximum 2000 mm.
- (c) **Height to Highest Point.** Maximum 2500mm (including all non-detachable external devices).

19. **Performance (in Plains, Deserts & Mountainous/ High Altitude Terrain).**

- (a) Max Speed: 35 Kmph minimum (On plain ground) & 15 - 20 Kmph (Cross Country).
- (b) Ground Clearance: Minimum 300 mm in fully loaded condition.
- (c) Gradient: Minimum 25° on hard ground and 20° on Soft/sandy ground.
- (d) Vertical Step Crossing: Minimum 200 mm.
- (e) Trench Crossing: Minimum 500 mm.
- (f) Side Gradient: Minimum 17°.
- (g) **Fording Capability.**
 - (i) Ford without preparation.
 - (ii) Depth of water - at least 500mm.
 - (iii) All systems / payload to be functional during fording.

(h) **Operating Range & Mode.**

- (i) **Autonomous Mode (at least 50 km).** Ground Based Autonomous System should have the facility to feed programmable mission parameters by an operator in field conditions through control station. Ground Based Autonomous System should be able to perform all mission requirements by Auto Navigation in the geo-fenced area defined in mission parameters using LIDAR/ SLAM/ equivalent system incorporated for AI based self orientation & function/ mobility. It should also carryout effective surveillance of designated area by AI based self orientation & sensor activation.



(ii) **Remote Controlled Mode (at least 15 km).** In this mode Ground Based Autonomous System should have the capability to be operationally controlled by an operator upto a range of 15 km with man in loop at all times. The operator should be able to receive navigation and surveillance data over radio link at all times on the control station. In case the radio link between the operator and the Ground Based Autonomous System breaks, the Ground Based Autonomous System should switch to autonomous Mode and try to establish communication with the control station or conduct pre fed operational tasks.

(j) **Endurance.**

(i) **Silent / Battery Mode:** Minimum 06 hours of continuous operation (with full payload) at an average speed of 20-30 Kmph.

(ii) **APU Assisted Mode:** Minimum 12 hours of continuous operation (with full payload) of Ground Based Autonomous System at an average speed of 20-30 Kmph.

20. **Payload.** Following payloads to be provided:-

(a) **Surveillance Payload.** Combined Day and TI surveillance sight with following specifications:-

(i) **Stabilisation / Mounting.**

(aa) Twin axes stabilised day and TI cameras, LRF and audio recorder.

(ab) Traverse sight 360° unlimited times in either direction.

(ac) **Elevation / Depression.** 60° - 70° / 10° - 15°.

(ii) **Day Camera.** At least 1920x1080 pixels (Full HD) coloured day camera.

(aa) **FOV Horizontal.** 70° - 90°.

(ab) **FOV Vertical.** 40° - 50°.

(ac) **Zoom.**

(aca) At least **10X** optical zoom.

(acb) At least **10X** digital zoom in addition to optical zoom.

(ad) **DRI Range:** Detection - 08 km, Recognition - 05 km & Identification - 2.5 Km for tank T-72 size targets in front profile.

(iii) **TI Camera.**

(aa) Thermal Imaging (TI) sight.

(ab) **DRI Range.** Detection - 08 km, Recognition - 05 km & Identification - 2.5 Km for tank T-72 size targets in front profile.



(iv) **Laser Range Finder (LRF).**

- (aa) LRF to be integrated with Surveillance Sight.
- (ab) Range - at least **08** Kms.
- (ac) Accuracy - \pm 05 meter.
- (ad) Provision for remote ranging from the Base Station.

(v) **Audio Recorder.**

- (aa) Two channel recording equipment on-board Ground Based Autonomous System with ability to transmit live sound to Control Station.
- (ab) Able to capture at least 30 decibels sound (at one feet distance) in range of 20 Hz to 20KHz.

(vi) **Telescopic Mast.**

- (aa) Surveillance Sight to be mounted on telescopic mount.
- (ab) Provision to operate mast electrically.
- (ac) Provision to remotely operate from Control Station.
- (ad) **Elevation.** At least two meters from home position.

(b) **Logistic Carrier Payload.**

- (i) **Max Load.** 700 kgs minimum (with provisions to secure the load).
- (ii) **Area.** At least 1250mm x 1000mm.

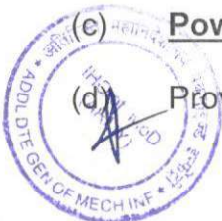
(c) **Casualty Evacuation Payload.** Carry two casualties (of minimum 100 kgs each) in lying position with facility to secure the casualties on in-service stretchers or suitably modified stretchers with securing arrangements for the casualty of 2000mm length and 500mm width.

21. **Control Station.** Each Ground Based Autonomous System to be provided with **one man-portable rugged Control Station** with following specifications / capabilities:-

- (a) Software for the remote operation of the Ground Based Autonomous System and all payloads.
- (b) Communication system for command and control of Ground Based Autonomous System and all payloads including between the casualty and control station.

(c) **Power Backup.** At least two hours without charging from external source.

(d) Provision for charging from external DC & AC power source.



(e) **Display Panel.** Suitable display panel for display of relevant data, images & live / recorded videos from Ground Based Autonomous System navigation system and payload (where applicable) with auto as well as adjustable feature for brightness, contrast & sharpness of the feed. At least 10-inch diagonal measurement display area with peak luminosity of not less than 400 nits.

(f) **Digital Recorder Device.** Solid State type for providing recording facility:-

(i) **Quantity** - one each installed with Control Station and Ground Based Autonomous System.

(ii) **Capacity** - minimum **one Terabyte.**

(iii) **Data to be recorded.**

(aa) Navigation data including coordinates, location & route travelled.

(ab) Audio and video captured by payloads (where applicable).

(ac) Ground Based Autonomous System diagnostic data.

22. **Navigation System.**

(a) Independent control, display and access of navigation data be provided to External Driver.

(b) Compatible with GPS, GLONASS, NavIC and Defence Series Maps (DSM).

(c) Should have the facility of Geo Fencing.

(d) Should have the capability of 'Return to Home'.

23. **Ground Based Autonomous System Power Source.**

(a) **Battery Based.**

(i) **Endurance.** Minimum **six** hours of continuous operation with payload .

(ii) **Type of Batteries.** Suitable for employment in given terrain and climatic conditions. The batteries should be indigenous and have necessary arrangement for fire safety.

(iii) **Capacity.** Should be able to operate all on board electronic equipment with provision for charging from Auxiliary Power Unit and external power source. The Ground Based Autonomous System should have Integrated Power Management System to monitor onboard power usage and facility to send the same data to control station.



(b) **Auxiliary Power Unit (APU) for Charging of Batteries.**

- (i) **Endurance.** Minimum **twelve** hours of continuous operation with payload.
 - (ii) Rugged APU mounted on Ground Based Autonomous System to provide power to all on-board systems and payloads (where applicable).
 - (iii) Capable of functioning while Ground Based Autonomous System is moving.
 - (iv) Remote starting / switch-off from Control Station.
 - (v) **Capacity.** Ground Based Autonomous System should have provision to carry necessary fuel for operation of the APU with arrangements for fire safety.
- (c) **Charging Ports.** Provision for charging Ground Based Autonomous System and payload batteries (where applicable) from external DC & AC power source. Provision for four ports (two ports providing 240V AC output and two ports providing variable DC output) for charging of electronic equipment.

Maintainability and Miscellaneous Parameters

24. **Repair and Maintenance.** Ground Based Autonomous System specific sub-systems to be modular in design for easy maintainability in field conditions. The following aspects should be addressed:-

- (a) **Built-in-Test Equipment (BITE).**
 - (i) BITE to support diagnostics and repairs through module replacement in field conditions.
 - (ii) Audio / Visual alarm be provided to indicate test failure.
- (b) **Tools.**
 - (i) Special Machine Tools / Special Test Equipment /Test Jigs (SMTs/STEs/TJs) be provided for the equipment to support diagnostics and repairs at various echelons.
 - (ii) Minimal or nil requirement of special/ common use tools for LRU replacements. As far as possible, common tool to be used across multiple applications.
- (c) **Spares.** Manufacturer Recommended List of Spares (MRLS) to be provided and availability of spares to be ensured up to at least two years beyond the stated service life.
- (d) Line Replaceable Units (LRUs) for easy and quick replacement of sub-systems in field conditions, rather than component level replacements, for easier maintenance.



(e) **Maintainability Evaluation Trials (MET)**. All aspects of engineering support like spares, special maintenance tools, special test equipment, test jigs, training aggregates, Technical literature and training will be validated during MET.

25. **Miscellaneous Parameters.**

(a) **Frequency Band and Secrecy**. Ground Based Autonomous System shall use the frequency band specified by SHQ. Vendors to provide industrial grade secrecy.

(b) **Software**. Software should be indigenous, propriety and restorable in field, along with a provision for future upgrades. The Ground Based Autonomous System must have the capability to self-destruct onboard data to prevent unauthorized access to data storage devices and software along with capability of remote wiping of data from the Ground Based Autonomous System by control station.

(c) **Hours Run Count**. Ground Based Autonomous System specific critical systems to display cumulative in-service usage in hours/ minutes for facilitating preventive/ periodic maintenance.

(d) **Reverse Polarity Protection**. Protection/provision be provided to prevent reverse polarity damage/malfunction for all PCBs/ Cards/ Cables / Batteries.

(e) **Manuals**. User Manual and Technical Literature to be provided for use and sustenance of the equipment as per JSS: 0251-01: 2015.

(f) Single component failure should not cascade into system/sub-system level failure.

(g) **EMI/EMC**. Ground Based Autonomous System systems to conform to following tests: -

(i) **System Level**. Mil Std 464C as applicable.

(ii) **Sub-System Level**. Mil Std 461E/F as applicable.

(h) **QA**. Ground Based Autonomous System should be compliant to durability & quality aspects as per JSS:55555 & JSS : 5855. Relevant tests to be mutually decided by QA & supplier.

PART-III: DESIRABLE PARAMETERS

26. **Performance (in Plains, Deserts & Mountainous / High Altitude Terrain).**

(a) **Gradient**. Minimum 30° on hard ground and 25° on soft / sandy ground.

(b) **Vertical Step Crossing**. Minimum 350mm.

(c) **Trench Crossing**. Minimum 750mm.

(d) **Side Gradient**. Minimum 20° .



27. **Endurance.**

(a) **Silent / Battery Mode.** Minimum 08 hours of continuous operation of Ground Based Autonomous System (with full payload) at an average speed of 20-30 kmph.

(b) **APU Assisted Mode.** Minimum 18 hours of continuous operation of Ground Based Autonomous System (with full payload) at an average speed of 20-30 kmph.

28. **Logistic Carrier Payload.** 1000 kg minimum (with provisions to secure the load).

29. **Protection.** The protection for critical components of Ground Based Autonomous System viz electronic control unit; power train including battery, APU & drivetrain; mobility sensors suite including camera & network switch; communication module; navigation hardware including control actuators; electric motors and surveillance camera be provided as mentioned below:-

(a) In Service 7.62mm ammunition at 30 metres.

(b) In Service 5.56mm ammunition at 30 metres.



COMMERCIAL EVALUATION CRITERIA

1. **Name of the Vendor** : _____
2. **Evaluation Criteria.**

<u>S No</u>	<u>Criteria</u>	<u>Vendor Submission</u>	<u>Reference</u> (Reference against vendor /
(a)	Nature of the Company (refer Para 6(b) of Chapter III of DAP-2020).	Indian / Joint Venture	Relevant documents to be enclosed
(b)	Ownership status (refer Para 20 (a) & (b) of Chapter I of DAP-2020).	Compliant / Non compliant	Relevant documents to be enclosed
(c)	Category of Industry.	Large / Medium / Small / Micro / DPSU / Start Up	Relevant documents to be enclosed
(d)	Registration (MSMEs to provide Udyam Certificate; Start Ups to provide DIPP license; Others to provide Registration Certificate as applicable).	Yes / No	Relevant documents to be enclosed
(e)	Minimum average turnover for last three financial years from date of issue of Eol.	Details to be provided	Relevant documents to be enclosed
(f)	Net worth of previous financial year.	Positive / Negative	Relevant documents to be enclosed
(g)	Defence Industrial License details.	Yes/ Applied for/ Will be applying	Relevant documents to be enclosed
(h)	Credit Rating	-	Relevant documents to be enclosed

Station :

Signature

Company Seal



All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.

Any input with incorrect or missing reference will not assessed.

TECHNICAL EVALUATION CRITERIA

<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
1.	Indigenous content will be minimum 50% as per DAP-2020.	Compliant/ Non Compliant	
2.	Indigenous design as per provision of DAP-2020.	Compliant/ Non Compliant	
3.	<u>Timelines.</u>		
	(a) Development of prototype 46 weeks.	Compliant/ Non Compliant	
	(b) Delivery of items as per delivery schedule - 24 Months.	Compliant/ Non Compliant	
4.	Confirmation of capability to develop and provide equipment to meet user requirements specified in Appendix A (PSQR).	Compliant/ Non Compliant	
5.	Proposed system configuration (broad design details).	Provided/ Not Provided	
6.	<u>Experience.</u> Should have experience of working in broad areas like electronics/ Artificial Intelligence as applicable in the instant case. (Details of existing manufacturing related infrastructure/R&D/Quality control facilities to be provided).	Compliant/ Non Compliant	
7.	Acceptance to all terms and conditions given in the Eol.	Compliant/ Non Compliant	
<u>PSQR Requirements</u>			
6.	<u>Operational Parameters</u>		
	(a) <u>Terrain.</u> Desert/ Plain terrain as obtained along India's Western Borders and High Altitude/ Mountainous terrain (up to 5000m above mean sea level) along Borders of India.	Compliant/ Non Compliant	
	(b) <u>Configuration.</u> Ground Based Autonomous System should be configured on a tracked / wheeled chassis.	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	(c) <u>Service Life</u> . At least 15 years.	Compliant/ Non Compliant	
	<p>(d) <u>Operating Temperature</u>. The Ground Based Autonomous System including all sub-systems should be operational in following ambient temperature conditions: -</p> <p>(i) <u>Plain and Desert Terrain</u>.</p> <p>(aa) <u>Minimum Operating Temperature</u>: Between 0° to 05° Celsius.</p> <p>(ab) <u>Maximum Operating Temperature</u>: Between 40° to 45° Celsius.</p> <p>(ii) <u>High Altitude & Mountain Terrain</u>.</p> <p>(aa) <u>Minimum Operating Temperature</u>: Between (-)20° to (-)10° Celsius.</p> <p>(ab) <u>Maximum Operating Temperature</u>: 40° Celsius.</p>	Compliant/ Non Compliant	
	<p>(e) <u>Transportability</u>. Capable of being transported by:-</p> <p>(i) In-service load carrier vehicles.</p> <p>(ii) In-service transport aircrafts.</p> <p>(iii) In service Military Wagons.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
7.	<u>Technical Parameters</u>		
	<p>(a) <u>Dimensions.</u></p> <p>(i) <u>Length.</u> Maximum 3500 mm.</p> <p>(ii) <u>Overall Width.</u> Maximum 2000 mm.</p> <p>(iii) <u>Height to Highest Point.</u> Maximum 2500mm (including all non-detachable external devices).</p>	Compliant/ Non Compliant	
	<p>(b) <u>Performance (in Plains, Deserts & Mountainous/ High Altitude Terrain).</u></p> <p>(i) <u>Max Speed:</u> 35 Kmph minimum (On plain ground) & 15 - 20 Kmph (Cross Country).</p> <p>(ii) <u>Ground Clearance:</u> Minimum 300 mm in fully loaded condition.</p> <p>(iii) <u>Gradient:</u> Minimum 25° on hard ground and 20° on Soft/sandy ground.</p> <p>(iv) <u>Vertical Step Crossing:</u> Minimum 200 mm.</p> <p>(v) <u>Trench Crossing:</u> Minimum 500 mm.</p> <p>(vi) <u>Side Gradient:</u> Minimum 17°.</p> <p>(vii) <u>Fording Capability.</u></p> <p>(aa) Ford without preparation.</p> <p>(ab) Depth of water - at least 500mm.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(viii) <u>Operating Range & Mode.</u></p> <p>(aa) Autonomous Mode (at least 50 km). Ground Based Autonomous System should have the facility to feed programmable mission parameters by an operator in field conditions through control station. Ground Based Autonomous System should be able to perform all mission requirements by Auto Navigation in the geo-fenced area defined in mission parameters using LIDAR/ SLAM/ equivalent system incorporated for AI based self orientation & function/ mobility. It should also carryout effective surveillance of designated area by AI based self orientation & sensor activation.</p> <p>(ii) <u>Remote Controlled Mode (at least 15 km).</u> In this mode Ground Based Autonomous System should have the capability to be operationally controlled by an operator upto a range of 15 km with man in loop at all times. The operator should be able to receive navigation and surveillance data over radio link at all times on the control station. In case the radio link between the operator and the Ground Based Autonomous System breaks, the Ground Based Autonomous System should switch to autonomous Mode and try to establish communication with the control station or conduct pre fed operational tasks.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(ix) Endurance.</p> <p>(aa) Silent / Battery Mode: Minimum 06 hours of continuous operation (with full payload) at an average speed of 20-30 Kmph.</p> <p>(ab) APU Assisted Mode: Minimum 12 hours of continuous operation (with full payload) of Ground Based Autonomous System at an average speed of 20-30 Kmph.</p>	Compliant/ Non Compliant	
8.	<p>Payload</p> <p>(a) Surveillance Payload. Combined Day and TI surveillance sight with following specifications:-</p> <p>(i) Stabilisation / Mounting.</p> <p>(aa) Twin axes stabilised day and TI cameras, LRF and audio recorder.</p> <p>(ab) Traverse sight 360° unlimited times in either direction.</p> <p>(ac) Elevation / Depression: 60° - 70° / 10° - 15°.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(ii) Day Camera. At least 1920x1080 pixels (Full HD) coloured day camera.</p> <p>(aa) <u>FOV Horizontal</u>: 70° - 90°.</p> <p>(ab) <u>FOV Vertical</u>: 40° - 50° .</p> <p>(ac) Zoom.</p> <p>(aca) At least 10X optical zoom.</p> <p>(acb) At least 10X digital zoom in addition to optical zoom.</p> <p>(ad) DRI Range: Detection - 08 km, Recognition - 05 km & Identification - 2.5 Km for tank T-72 size targets in front profile.</p> <p>(iii) TI Camera.</p> <p>(aa) Thermal Imaging (TI) sight.</p> <p>(ab) DRI Range. Detection - 08 km, Recognition - 05 km & Identification - 2.5 Km for tank T-72 size targets in front profile.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(iv) <u>Laser Range Finder (LRF).</u></p> <p>(aa) LRF to be integrated with Surveillance Sight.</p> <p>(ab) Range - at least 08 Kms.</p> <p>(ac) Accuracy - \pm 05 meter.</p> <p>(ad) Provision for remote ranging from the Base Station.</p> <p>(v) <u>Audio Recorder.</u></p> <p>(aa) Two channel recording equipment on-board Ground Based Autonomous System with ability to transmit live sound to Control Station.</p> <p>(ab) Able to capture at least 30 decibels sound (at one feet distance) in range of 20 Hz to 20KHz.</p> <p>(vi) <u>Telescopic Mast.</u></p> <p>(aa) Surveillance Sight to be mounted on telescopic mount.</p> <p>(ab) Provision to operate mast electrically.</p> <p>(ac) Provision to remotely operate from Control Station.</p> <p>(ad) <u>Elevation.</u> At least two meters from home position.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(b) <u>Logistic Carrier Payload.</u></p> <p>(i) <u>Max Load.</u> 700 kgs minimum (with provisions to secure the load).</p> <p>(ii) <u>Area.</u> At least 1250mm x 1000mm.</p> <p>(c) <u>Casualty Evacuation Payload.</u> Carry two casualties (of minimum 100 kgs each) in lying position with facility to secure the casualties on in-service stretchers or suitably modified stretchers with securing arrangements for the casualty of 2000mm length and 500mm width.</p>	Compliant/ Non Compliant	
9.	<p><u>Control Station.</u> Each Ground Based Autonomous System to be provided with one man-portable rugged Control Station with following specifications / capabilities:-</p> <p>(a) Software for the remote operation of the Ground Based Autonomous System and all payloads.</p> <p>(b) Communication system for command and control of Ground Based Autonomous System and all payloads including between the casualty and control station.</p> <p>(c) <u>Power Backup.</u> At least two hours without charging from external source.</p> <p>(d) Provision for charging from external DC & AC power source.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(e) <u>Display Panel.</u> Suitable display panel for display of relevant data, images & live / recorded videos from Ground Based Autonomous System navigation system and payload (where applicable) with auto as well as adjustable feature for brightness, contrast & sharpness of the feed. At least 10-inch diagonal measurement display area with peak luminosity of not less than 400 nits.</p> <p>(f) <u>Digital Recorder Device.</u> Solid State type for providing recording facility:-</p> <p>(i) <u>Quantity</u> - one each installed with Control Station and Ground Based Autonomous System.</p> <p>(ii) <u>Capacity</u> - minimum one Terabyte.</p> <p>(iii) <u>Data to be recorded.</u></p> <p>(aa) Navigation data including coordinates, location & route travelled.</p> <p>(ab) Audio and video captured by payloads (where applicable).</p> <p>(ac) Ground Based Autonomous System diagnostic data.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
10.	<p><u>Navigation System</u></p> <p>(a) Independent control, display and access of navigation data be provided to External Driver.</p> <p>(b) Compatible with GPS, GLONASS, NavIC and Defence Series Maps (DSM).</p> <p>(c) Should have the facility of Geo Fencing.</p> <p>(d) Should have the capability of 'Return to Home'.</p>	Compliant/ Non Compliant	
11.	<p><u>Ground Based Autonomous System Power Source</u></p> <p>(a) <u>Battery Based.</u></p> <p>(i) <u>Endurance.</u> Minimum six hours of continuous operation with payload .</p> <p>(ii) <u>Type of Batteries.</u> Suitable for employment in given terrain and climatic conditions. The batteries should be indigenous and have necessary arrangement for fire safety.</p> <p>(iii) <u>Capacity.</u> Should be able to operate all on board electronic equipment with provision for charging from Auxiliary Power Unit and external power source. The Ground Based Autonomous System should have Integrated Power Management System to monitor onboard power usage and facility to send the same data to control station.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(b) <u>Auxiliary Power Unit (APU) for Charging of Batteries.</u></p> <p>(i) <u>Endurance.</u> Minimum twelve hours of continuous operation with payload.</p> <p>(ii) Rugged APU mounted on Ground Based Autonomous System to provide power to all on-board systems and payloads (where applicable).</p> <p>(iii) Capable of functioning while Ground Based Autonomous System is moving.</p> <p>(iv) Remote starting / switch-off from Control Station.</p> <p>(v) <u>Capacity.</u> Ground Based Autonomous System should have provision to carry necessary fuel for operation of the APU with arrangements for fire safety.</p> <p>(c) <u>Charging Ports.</u> Provision for charging Ground Based Autonomous System and payload batteries (where applicable) from external DC & AC power source. Provision for four ports (two ports providing 240V AC output and two ports providing variable DC output) for charging of electronic equipment.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
12.	<p><u>Maintainability and Miscellaneous Parameters</u></p> <p>(a) <u>Repair and Maintenance.</u> Ground Based Autonomous System specific sub-systems to be modular in design for easy maintainability in field conditions. The following aspects should be addressed:-</p> <p>(i) <u>Built-in-Test Equipment (BITE).</u></p> <p>(aa) BITE to support diagnostics and repairs through module replacement in field conditions.</p> <p>(ab) Audio / Visual alarm be provided to indicate test failure.</p> <p>(ii) <u>Tools.</u></p> <p>(aa) Special Machine Tools / Special Test Equipment / Test Jigs (SMTs/ STEs/ TJs) be provided for the equipment to support diagnostics and repairs at various echelons.</p> <p>(ab) Minimal or nil requirement of special/ common use tools for LRU replacements. As far as possible, common tool to be used across multiple applications.</p> <p>(iii) <u>Spares.</u> Manufacturer Recommended List of Spares (MRLS) to be provided and availability of spares to be ensured up to at least two years beyond the stated service life.</p> <p>(iv) Line Replaceable Units (LRUs) for easy and quick replacement of sub-systems in field conditions, rather than component level replacements, for easier maintenance.</p> <p>(v) <u>Maintainability Evaluation Trials (MET).</u></p> <p>All aspects of engineering support like spares, special maintenance tools, special test equipment, test jigs, training aggregates, Technical literature and training will be validated during MET.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
13.	<p>Miscellaneous Parameters</p> <p>(a) Frequency Band and Secrecy. Ground Based Autonomous System shall use the frequency band specified by SHQ. Vendors to provide industrial grade secrecy.</p> <p>(b) Software. Software should be indigenous, propriety and restorable in field, along with a provision for future upgrades. The Ground Based Autonomous System must have the capability to self-destruct onboard data to prevent unauthorized access to data storage devices and software along with capability of remote wiping of data from the Ground Based Autonomous System by control station.</p> <p>(c) Hours Run Count. Ground Based Autonomous System specific critical systems to display cumulative in-service usage in hours/ minutes for facilitating preventive/ periodic maintenance.</p> <p>(d) Reverse Polarity Protection. Protection/ provision be provided to prevent reverse polarity damage/malfunction for all PCBs/ Cards/ Cables / Batteries.</p> <p>(e) Manuals. User Manual and Technical Literature to be provided for use and sustenance of the equipment as per JSS: 0251-01: 2015.</p> <p>(f) Single component failure should not cascade into system/sub-system level failure.</p> <p>(g) EMI/EMC. Ground Based Autonomous System systems to conform to following tests: -</p> <p>(i) System Level. Mil Std 464C as applicable.</p> <p>(ii) Sub-System Level. Mil Std 461E/F as applicable.</p> <p>(h) QA. Ground Based Autonomous System should be compliant to durability & quality aspects as per JSS:55555 & JSS : 5855. Relevant tests to be mutually decided by QA & supplier.</p>	Compliant/ Non Compliant	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
14.	<u>Desirable Parameters</u>		
	<p>(a) <u>Performance (in Plains, Deserts & Mountainous / High Altitude Terrain).</u></p> <p>(i) <u>Gradient.</u> Minimum 30^o on hard ground and 25^o on soft / sandy ground.</p> <p>(ii) <u>Vertical Step Crossing.</u> Minimum 350mm.</p> <p>(iii) <u>Trench Crossing.</u> Minimum 750mm.</p> <p>(iv) <u>Side Gradient.</u> Minimum 20^o.</p> <p>(b) <u>Endurance.</u></p> <p>(i) <u>Silent / Battery Mode.</u> Minimum 08 hours of continuous operation of Ground Based Autonomous System (with full payload) at an average speed of 20-30 kmph.</p> <p>(ii) <u>APU Assisted Mode.</u> Minimum 18 hours of continuous operation of Ground Based Autonomous System (with full payload) at an average speed of 20-30 kmph.</p> <p>(c) <u>Logistic Carrier Payload.</u> 1000 kg minimum (with provisions to secure the load).</p>	<ul style="list-style-type: none"> • For Information Only. Compliance is not mandatory. • Desirable parameters may be included in the final SQR based on development by Vendors. 	



<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Response</u>	<u>Remarks (if Any)</u>
	<p>(d) Protection. The protection for critical components of Ground Based Autonomous System viz electronic control unit; power train including battery, APU & drivetrain; mobility sensors suite including camera & network switch; communication module; navigation hardware including control actuators; electric motors and surveillance camera be provided as mentioned below:-</p> <p>(i) In Service 7.62mm ammunition at 30 metres.</p> <p>(ii) In Service 5.56mm ammunition at 30 metres.</p>		
15.	Compliance Certificates.		
	(a) Correctness Certificate (As per Appendix G)	Compliant/ Non Compliant	
	(b) Confidentiality Agreement (As per Appendix E)	Compliant/ Non Compliant	
	(c) EoI Compliance Certificate (As per Appendix F)	Compliant/ Non Compliant	

Station:

Signature

Company Seal

Date :

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.



CORRECTNESS CERTIFICATE

It is certified that information submitted in the documents as part of the response to Expression of Interest for the project of Ground Based Autonomous System is correct and complete in all respects. It is acknowledged that the company will be disqualified from further participation if any information provided is found to be incorrect.

Signature with Company Seal

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.



CONFIDENTIALITY AGREEMENT

1. It is certified that Expression of Interest document for the project of Ground Based Autonomous System will not be shared with any agency in part or full any other agency. Only relevant details, as applicable, will be shared with technology partners including foreign technology partners. However, the Eol document itself will not be shared with any technology partners.
2. The company understands the security sensitivity of such an operational systems and any information pertaining to deployment and usage of the system including system scaling will not be discussed with third party without a written permission from the Project Facilitation Team. The company understands that failure to observe this agreement will lead to disqualification from the project.

Signature with Company Seal

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.



EoI COMPLIANCE CERTIFICATE

It is certified that all the aspects mentioned in the Expression of Interest for the procurement of Ground Based Autonomous System are being complied to. It is acknowledged that the company will be disqualified from further participation if any aspect mentioned in Expression of Interest is not complied with.

Signature with Company Seal

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.



INFORMATION PERFORMA

1. Name of the Company.
2. Name of CEO with Designation.
3. Address of the Registered Office.
4. Address of the Factory / Factories.
5. Company Website(s).
6. Date of Incorporation.
7. Brief History of the Company.
8. Category of Industry (Large / Medium / Small / Micro).
9. Nature of Company (Public Limited/ Private Limited).
10. Nature of Business (Manufacture / Trader / Sole selling or Authorised Agent/ Dealer / Assembler / Processor / Re packer/ Service Provider). Please give broad product range as applicable
11. Details of Current Products :-
 - (a) Type / Description.
 - (b) Licensed / Installed Capacity.
 - (c) Annual Production for Preceding 3 Years.
12. Credit Rating.
13. Details of IPRs if any.
14. Details of Foreign Collaborations if any planned for execution of project.
15. Technology Received from abroad and assimilated / planned for execution of project.



16. Products Already Supplied :-

- (a) To Indian Army / Air Force / Navy.
- (b) PSUs.
- (c) DRDO and its Laboratories.
- (d) Ordnance Factories.
- (e) Any other Defence Organisation.
- (f) To other Principal Customers.

17. Details of Developmental Facilities :-

- (a) R&D Facilities Available.
- (b) Number of Technical Manpower.
- (c) Percentage of Total Turn-Over Spent on R&D during the Last Three Years.

18. Turn-Over during the last Three financial Years.

19. Any other relevant information/ Assistance required from SHQs/ User Directorate during design and development of prototype.

20. Contact Details of the Executive nominated to co-ordinate with the Assessment Team (Please provide telephone, mobile and e-mail address).

Station:

Signature

Company Seal

Date :

