Draft Copy No : One

INVITATION FOR EXPRESSION OF INTEREST (EOI) FOR PROCUREMENT OF VEHICLE MOUNTED COUNTER SWARM DRONE SYSTEM (VMCSDS (VERSION I)) BASED ON MINIMUM ORDER QUANTITY (MOQ) 12 (TWELVE) SYSTEMS AND 864 ROCKETS (INCLUDING INDIAN ARMY (IA) AND INDIAN AIR FORCE (IAF)) UNDER 'MAKE-II' CATEGORY DAP 2020

References : **Defence Acquisition Procedure – 2020 and amendments there of upto the date of EOI submission (as applicable).**

Appendices :

Appendix A : Preliminary Service Qualitative Requirements for Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)).

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**. Development of emerging technologies coupled with rapid progress in miniaturization of components has resulted in exponential proliferation of low RCS Unmanned Aerial Systems (UAS) like Drones, UAVs, UCAVs and RPAs, especially along the Northern Borders and coastal areas. The Artificial Intelligence softwares/ algorithms have further enhanced the lethality of these minaturized aerial platforms by providing options of individual or SWARM of Drones attacks/incursions with multiple payloads for surveillance as well as destruction. These low cost aerial platforms provide cheaper and more flexible options than high maintenance aircrafts to target own assets. In particular, the **Smart Warfighting Array of Reconfigurable Modules** (**SWARM**) of Drones configuration poses a **credible asymmetric threat** to all assets deployed in the Tactical Battle Area and along coastal areas. However, SWARM of Drones threat has inherent structural vulnerabilities and can be countered with an integrated and cohesive response. Therefore, there is an urgent requirement of developing and procuring suitable weapon systems for countering and neutralising this emerging threat of SWARM of Drones.

2. **Objective**. The objective of this invitation of Expression of Interest (EoI) is to seek responses from eligible Indian Vendors for the development of prototype and further procurement of Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)).

3. **Layout** The EoI has been convened 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 EoI.

(e) Part V : Miscellaneous.

PART I : GENERAL INFORMATION

4. **Nomenclature**. Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)).

5. **Categorisation**. The project is categorised as under :-

(a) **Prototype Development Phase**. '**Make-II**' in accordance with Para 5 (b)(i) of **Chapter III of Defence Acquisition Procedure 2020 and amendments there of upto the date of EOI submission (as applicable)**.

(b) **Procurement Phase**. '**Buy (Indian-IDDM)**' with ≥50% indigenous content in accordance with **Para 6 (d) of Chapter III of Defence Acquisition Procedure 2020 and amendments there of upto the date of EOI submission (as applicable)**.

6. **Quantity**.

(a) **Prototype Development Phase**. The following equipment is required:-

S No	VMCSDS (Version I)	Qty
(i)	System	01 (One)
(ii)	Rockets	64 (Sixty Four)

(b) **Procurement Phase**. The following equipment is required:-

S No	VMCSDS (Version I)	Qty			Remarks
		IA	IAF	Total	
(i)	System (MoQ)	10	02	12	
(ii)	Rockets (MoQ)	720	144	864	

7. **Make II Procedure**. In accordance with Chapter III of DAP-2020 and amendments there of upto the date of EOI submission (as applicable).

PART II : SCOPE OF THE PROJECT

8. **Scope**. **Smart Warfighting Array of Reconfigurable Modules** (**SWARM**) of Drones configuration poses a **credible asymmetric threat** to all assets deployed in the Tactical Battle Area and coastal environment. Therefore, there is an urgent requirement of developing and procuring suitable weapon systems for countering and neutralising this emerging threat of SWARM of Drones. The proposed system should have a surveillance, detection and tracking capability, microprocessor for computing a targeting solution and a suitable hard kill weapon system.

9. **Preliminary Services Qualitative Requirements (PSQR) of the Proposed Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I))**. Extract of **PSQR No 128** of the Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)) is attached as **Appendix A**.

Timelines and Critical Activities

10. **Time Lines & Milestones**. Tentative time lines for the project are given at as under :-

S No	Activity	Remarks	Timelines
(a)	Issue of EoI	By Project Facilitation Team (PFT)	T_0
(b)	EoI Responses Submission	By EoI respondents (Indian Vendors	T_0 + 8 weeks
(c)	EoI Responses Evaluation	By Project Facilitation Team (PFT)	T_0 + 8 to T_0 + 14 weeks
(d)	Issue of Project Sanction Order for Development of Prototype	To selected DAs, those meeting evaluation criteria	T_0 + 14 to T_0 + 16 weeks
(e)	Design and Development of Prototype and Prototype Readiness Review	Selected DAs will develop the prototype and Prototype Readiness Review will be conducted for following. (i) To confirm completion of design & development of prototypes as per PSQR prior to commencement of Single Stage Composite trials. (ii) More than one review may be conducted, as required. Dates will be promulgated by the PFT as per progress of the project.	T_0 + 16 to T_0 + 94 weeks
(f)	Trials, Conversion of PSQRs to GSQRs, Solicitation of Commercial offer and Contract	As per Chapter II of DAP 2020 and amendments thereof(As applicable)	

Development of Prototype and Trials

11. All possible and reasonable assistance and any clarification related to functional or operational aspect of development as sought by DAs will be provided by Project Facilitation Team (PFT).

12. After the prototype has been developed as per PSQR given at **Appendix A**, the PFT would conduct Prototype Readiness Review as per Chapter III of DAP 2020 and amendments thereof (as applicable). Service HQ will formulate the 'Trial Directive' which will incorporate the parameters for validating the 'Essential Parameters' and 'Desirable Parameters'. Necessary technical literature pertaining to the design & material will be provided by the DAs for the conduct of Prototype Readiness Review to ensure matching of prototype specification with PSQR as per with Chapter III of DAP-2020 and amendments there of upto the date of EOI submission (as applicable).

Deliverables

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

(a) **Prototype Development Stage**. The following equipment is required :-

S No	VMCSDS (Version I)	Qty	Remarks
(i)	System	01 (One)	
(ii)	Rockets	64 (Sixty Four)	

(b) **Procurement Stage**. Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)) as per the following details:-

S No	VMCSDS (Version I)	Qty			Remarks
		IA	IAF	Total	
(I)	System	10	02	**12**	
(ii)	Rockets	720	144	**864**	

(c) **Warranty**. A warranty of Two (02) years will be required for the **VMCSDS (Version I)** System and all its deliverables.

(d) **Maintenance Aspects**. Post warranty of 2 years, a suitable Engineering Support Package (ESP) comprising of MRLS (Two Years), Technical Literature, Special Maintenance Tools (SMTs), Special Test Equipment (STE), Test Jigs (TJs) and Fixtures and adequate training and training aggregates will be provided by the Seller.

Details of Trials/ Assistance to be Provided

14. The following trials will be conducted/assistance will be provided :-

(a) **Trials**. As per relevant paras of Chapter III of DAP 2020 and amendments thereof (as applicable) a Single Stage Composite Trials will be carried out.

(b) **Assistance to be Provided**. Assistance to Vendor will be provided based on the merit of the request received by PFT. The vendor will be liable to bear the expenses of repair/replacement of the facility and all necessary insurance coverage in case of any damage occurring to equipment/property/personnel resulting from the testing of the job of vendor.

Solicitation of Commercial Offers

15. A commercial Request for Proposal (RFP) for 'Buy (Indian-IDDM)' phase would be issued to DA(s) as per DAP 2020 and amendments there of upto the date of EOI submission (as applicable) for soliciting their commercial offers.

Multiple Technological Solutions

16. Multiple technologies solutions are not acceptable.

PART III : EVALUATION CRITERIA

Commercial Evaluation Criteria

17. EoI respondents will furnish their response to the Commercial Evaluation Criteria as per format given at **Appendix B**.

18. **Technical Evaluation Criteria**. The respondents to this EoI are required to furnish information about their Technical Capability as per format given at **Appendix C**. Compliance/information' is also required to be submitted as per the proposed solution offered by the DA for Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)).

19. **Indigenous Content (IC) and Indigenous Design**. Indigenous Content (minimum of 50%) is to be achieved. Post successful development under Make-II would result in acquisition from successful DAs through 'Buy (Indian-IDDM)' category with indigenous design and development. The Indigenous Content $\geq$ 50% to be in accordance to Para 21 of Chapter I of DAP 2020 and amendments there of upto the date of EOI submission (as applicable).

20. **Additional Information**. Additional information required to be furnished as part of the EoI response is given at **Appendix G**.

21. **Foreign Collaboration**. If the EoI Respondent 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 16 of Appendix G)**.

22. **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 offer/meet/comply with Technical Evaluation Criteria given at **Appendix C**.

(c) Failure to submit certificates as mentioned at **Appendices D to F** of the EoI.

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

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

PART IV : PROCEDURE FOR SUBMISSION OF RESPONSE TO THE EoI

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

(a) The responses should be submitted strictly as per the formats given in respective Appendices. The vendors will submit their response on **Appendices B to F**. The response will be marked by pen or typed on a printout of **Appendices B to F**. Any additional info may be entered by pen or typed in remarks column. Additional information as per **Appendix G** will be submitted separately as per the given format.

(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.

24. 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'**. The response will be submitted on print out of **Appendices B to F** uploaded alongwith the EoI. 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.

25. **The Envelopes shall be Addressed as under**:-

Secretary, Project Facilitation Team
Army Air Defence Directorate/AAD-7
Integrated HQ of MoD (Army)
Room No 608, D1 Wing, Sena Bhawan
DHQ PO, New Delhi – 110011
Tele No : 34001 & 32779
E-mail ID : **skyplan-94@gov.in**

26. The responses to this EoI must be submitted on the day **15 February 2024, between 0900h and 1700h. A drop box will be placed at Sena Bhawan (Gate No 4) only on 15 February 2024 for all representatives of firms to physically deposit the EOI response document. The soft copy of response documents is required in MS Word and PDF format.**

27. **Confidentiality Agreement**. 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

28. **Pre EoI Responses Meeting** A pre-response meeting will be held on **22 Jan 2024** at **1100 hrs** at **Directorate General of Army AD, Room No 602 (Army AD Conference Hall), D1 Wing, Sena Bhawan, New Delhi-110011**. Vendors are required to submit their queries / clarifications / amplifications in writing to this office by **15 Jan 2024**.

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

30. The Pre-Contract Integrity Pact (PCIP), listed as detailed in Paragraph 119 of Chapter II of DAP-2020, shall apply mutatis mutandis to the 'Buy (Indian-IDDM)' phase of 'Make' project.

31. Respondent would be subject to disqualifications 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.

32. An EoI Compliance Certificate will be submitted as per **Appendix F**.

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

File No : 50041/VMCSDS/MAKE-II/219/GS/AAD-7

Dated : 15 Dec 2023

(Ajay Verma)
Colonel
Member Secretary,
Project Facilitation Team

Enclosures : **Appendices A to G**

Appendix A
(Refers to Para 9 of EoI)

PRELIMINARY STAFF QUALITATIVE REQUIREMENTS FOR VEHICLE MOUNTED COUNTER SWARM DRONE SYSTEM (VMCSDS (VERSION I))

INTRODUCTION AND OPERATIONAL EMPLOYMENT OF EQUIPMENT

1. **Introduction**.

(a) **Smart Warfighting Array of Reconfigurable Modules** (**SWARM**) of Drones configuration poses a **credible asymmetric threat** to all assets deployed in the Tactical Battle Area and coastal environment. Therefore, there is an urgent requirement of developing and procuring suitable weapon systems for countering and neutralising this emerging threat of SWARM of Drones.

(b) The proposed system should have a surveillance, detection and tracking capability, microprocessor for computing a targeting solution and a kinetic weapon system for hard kill.

2. **Aim**. To define Preliminary Staff Qualitative Requirements of Vehicle Mounted Counter Swarm Drone System (VMCSDS).

3. **System Visualisation**. In view of the available/displayed indigenous technological capability of system development, integration and miniaturization, it is proposed that the system be developed **in a multi stage spiral development** manner as under:-

(a) **Surveillance & Detection System**.

(i) **Radar System**. The radar should be able to detect low RCS targets not less than 50 simultaneously, identify and prioritize the threat and thereafter assist in designation of the hostile targets to the Weapon system through the Control Station for engagement.

(ii) **Passive RF Detection System**. The passive RF detection system should be able to detect low RCS drones in a SWARM configuration by means of inter and intra RF communication signal interception between individual drones within the SWARM and/or GCS and provide direction of detected emitter SWARMs or master GCS to the control station. It should detect frequency ranges from 400 MHz to 12 GHz (to include ISM bands, GNSS Band, Wifi bands).

(iii) **Electro Optical Tracking System (EOTS)**. The day and night capable system to be based on EO& Thermal Imaging sight with tracking facility.

(b) **Tracking System**. The tracking system of Counter SWARM Drone System should be based on combination of Radar &EOTS. Radar with EOTS should be able to cue the weapon system on to the SWARM target or at the centroid of the SWARM. Radar/EOTS should be able to acquire and track the target and able to provide required firing/targeting solution to weapon system based on the dynamically changing SWARM parameters.

(c) **Weapon System**. It should have a hard kill based engagement capability to destroy hostile drones within a SWARM expanse. As part of a spiral development model, initially for **Version I** the weapon system will be rockets/projectiles with proximity and/or timed fuze based on a single/multiple vehicle configuration and **Version II** to be guided missiles with proximity fuze (or variations thereof). The system should be capable of being rotated in azimuth and elevation to enable enhanced coverage of the airspace by the weapon platform.

(d) **Control Station**. A control station with following capability is envisaged:-

(i) It should have means to integrate inputs from Surveillance & Detection Sensors, with suitable alerting facility and display systems with user friendly Graphical User Interface (GUI) for displaying parameters of targets detected and tracked.

(ii) It should have controls to effect successful interdiction of target drones in a SWARM using Hard Kill Weapon Systems.

(iii) It should have ability to be integrated into existing and futuristic AD C&R architecture with other existing soft kill solutions.

(iv) It should have the capability of displaying inputs of surveillance and tracking systems including radar, passive RF and EOTS. The provision of target data display should be available to enable target selection and distribution for engagement kill systems as per priority. It should preferably have two Operator work stations.

(v) It should have facility to overlay maps as per DSM & open sources.

(vi) Based on GUI it should have record & play back facility for upto six hours of operation.

4. **Proposed Service Employment**.

(a) The VMCSDS should be able to be deployed independently or in conjunction with embedded in-service Air Defence weapon systems.

(b) The system will be deployed in all types of terrain as obtainable in India (Plains, Desert, HAA and coastal conditions/environment) in support of Field Formations/installations.

ESSENTIAL PARAMETERS – 'A'

Operational Parameters

5. The VMCSDS should have a surveillance, detection and tracking capability, microprocessor for computing a targeting solution and a kinetic weapon system for hard kill with following parameters:-

S No	Parameter	Requirement
General		
(a)	Terrain	The system should be capable of being operated in all types of terrain as obtained in the country. These are as follows :- (i) High Altitude & Mountainous Area-upto 5000m above Mean Sea Level (MSL). (ii) Plains, Desert & HAA. (iii) Coastal conditions/environment.
(b)	Physical Environment as obtained in India	VMCSDS should be able to operate under all weather conditions & areas including in coastal areas and snow bound locations:- (i) **Operating Temperatures**. (aa) Min Temp -Minus 20^0 C. (ab) Max Temp- Plus 45^0 C. (ii) **Humidity**. Upto 95%.
(c)	Weight	The combat weight of the system (less crew) should be capable of being mounted on different vehicles (not more than two in-service vehicles) so as to achieve power to weight ratio of 14:1 or more.
(d)	Dimensions	The Physical dimension including its weight should be such that the equipment can be transportable by service Rail on Broad Gauge with ODC, Road (on Tank Transporter), Ship and Air (C-17 Aircraft).
(e)	Power supply system	(i) The system including all its components should be able to operate from on-board power supply by suitable generator/power tap off from vehicle. The system should be able to function in HAA. (ii) The power backup for emergency operations for control station should be for min of 30 mins. (iii) It should be feasible to utilise commercial power supply for operation of systems.
(f)	Crew	Not more than 3 persons (excluding driver(s)).
(g)	Low RCS Radar System	The low RCS Radar should be based on 3-D Active Electronically Scanned Array with digital beam forming. It should have multifunction capability and work through jamming. It should be capable of 360 deg surveillance, target detection and tracking.
(h)	Passive RF Detection System	Not less than 06 km for Drones with Simultaneous multi detection capability on multi directional approach.

S No	Parameter	Requirement
(j)	EOTS	In addition to radar tracking, Electro Optical Tracking System should be incorporated for angular tracking during day and night. The EO device should consist of Thermal Imaging (TI) sight and optical sight for tracking during day and night.
(k)	Hard Kill System (**Version I**)	(i) Minimum Range - Not less than 50m. (ii) Maximum Range-Not less than 2.5 Km
(l)	Microprocessor	It should process the synthetic picture received from Radar and undertake gating of the target picture. It should be capable of undertaking selective launch at SWARM Expanse.
(m)	Communication	(i) **External Communication**. Provision for fitment of three (in service) radio sets. (ii) **Internal Communication**. Digital internal communication system for crew members.
(n)	Navigation	The navigation system (NavIC and IRNSS/GPS/ GLONASS) should be capable of operating both by day and night to facilitate cross country move of equipment with Mechanised Formations.
(o)	Drivers Night Sight	Drivers Night Sight capability should be there.
(p)	EMI/EMC compatibility	The system should be EMI/EMC compliant as per relevant provisions of MIL Standard 461 (as applicable).
(q)	BITE	The system should have Built in Test equipment to support diagnostics and repair through PCB/Module replacements in field conditions. Audio/visual alarms be provided to indicate fault indication/test failure/system malfunction upto PCB/Module sub assembly. All system functions should be continuously monitored and fault indicated. It should comprise of operator evel tests and plug in diagnostics of an integrated system.

Technical Parameters

6. The VMCSDS must fulfill the following technical parameters/capabilities:-

S No	Parameter	Requirement
(a)	**Surveillance & Detection System (Version I)**	
	(i) **Low RCS Radar System**	
	(aa) Type of Radar	Single Face 3 D AESA Radar with rotating antenna.
	(ab) Detection Range	Not less than 06 Km for 0.01 Sqm RCS Drones.
	(ac) Tracking Range	Not less than 06 Km for 0.01Sqm RCS Drones.

S No	Parameter	Requirement
	(ad) Altitude of Target	Upto 1500m.
	(ae) Azimuth Coverage	360 Degrees.
	(af) Elevation Coverage	(-)10 Degrees to (+) 70 Degrees.
	(ag) **Accuracy**	
	(aaa) Azimuth	≤ 0.1Degree.
	(aab) Range	≤ 30m.
	(aac) Elevation	≤ 0.5 Degrees.
	(ah) **Resolution/Discrimination**	
	(aaa) Azimuth	≤ 1 Degrees.
	(aab) Range	≤ 50m.
	(aac) Elevation	≤ 2 Degrees.
	(aj) Minimum Target Velocity	0 m/s (Capable of engaging Hovering Targets).
	(ak) Regeneration Mode	Capable of Regeneration mode with minimum time for data capture.
	(al) Hours of operations	Minimum 08 hours of continuous operation
	(am) Identification Friend or Foe (IFF)	It should have provision for integration with IFF system being used in three services.
	(ii) **Electronic Counter Counter Measures (ECCM)**	The radar should be able to operate effectively in Air Defence Electronic Counter Measures (ECM) environment caused by ground based and air borne active and deception jammers. The system should have following ECCM :- (i) Facilities to work through jamming. (ii) Facility to lock on jammer. (iii) Facilities to counter deception jamming in range, azimuth and velocity. (iv) Facilities to counter anti tracking measures. (v) Side lobe cancellation. (vi) Random PRF. (vii) Frequency Hopping Spread Spectrum (FHSS). (viii) Facility for sector blanking.

S No	Parameter	Requirement
		(ix) As an anti-Anti Radiation Missiles (ARM) measure, facility should be provided so that radar can be programmed to automatically switch off on detection of ARM launch on the radar in any operator chosen direction.
	(iii) **Passive RF Detection System**	
	(aa) Detection Range	Not less than 06 km for Drones with Simultaneous multi detection capability on multi directional approach.
	(ab) Azimuth Coverage	360 Degrees.
	(ac) Azimuth Accuracy	Upto 5 Degrees.
	(ad) Elevation Coverage	Minus 05 Degrees to Plus 45 Degrees.
	(ae) Frequency Detection Range	0.4MHz – 12 GHz.
	(af) Threat Library	The database of commonly used frequencies should be preloaded in the system as threat library. The system should be AI enabled and it should have provision for auto identification as per system threat library which should be updatable for new target types should exists. Updates should be provided for entire sys service life.
(b)	**Electro Optical Tracking System (EOTS) (Day and Night capable)**	
	(i) Azimuth Coverage	360 Degrees with ability to get cue from Radar.
	(ii) Detection Range	Not Less than 6 Km (target size 0.3 x 0.3 m) for Drones.
	(iii) Altitude of Target	Upto 1500m.
	(iv) Tracking Range	Not less than 06 Km.
	(v) Focus	Auto/Manual.
(c)	**Hard Kill System (Version I)**	
	(i) Engagement Range	Minimum Range - Not less than 50m. Maximum Range-Not less than 2.5 Km
	(ii) Engagement Height	30m-1500m AOL.
	(iii) Type of Guidance	Unguided Rockets.
	(iv) Speed	More than 150m/s.
	(v) Fuze	Proximity and/or Timed Fuze (Programmable Proximity Fuze).
	(vi) War Head	Fragmentation Type with blast radius of upto 10 m
	(vii) Launcher	(i) Capable of firing Bank of Rockets. (ii) Inclined Launcher should have capability to be moved in Azimuth upto 10 degrees.
	(viii) Azimuth coverage	360 Degrees or 180 Degrees.

S No	Parameters	Requirements
(d)	**Microprocessor Characteristics**	(i) Process the synthetic picture received from Radar. (ii) Undertake Gating of the target picture with facility to increase and decrease the Gate. (iii) Identification of Centroid of the SWARM. (iv) Capable of undertaking selective launch at SWARM Expanse.
(e)	**Control Station**	
	(i) Integrate detection inputs received from various sensors and identify threat to provide a composite air picture. (ii) It should be able to get input from surveillance & detection system (Radar & Passive RF detection system), AD C&R and execute engagement of SWARM of Drones through EOTS. (iii) It should facilitate autonomous (standalone mode of System) & facilitate integrated operation (connected to existing and futuristic AD C&R (Akashteer) and AD deployment) of the system.	
(f)	**Miscellaneous**	
	(i) Storage Temperature	(i) Minimum Temperature – Minus 30^0C. (ii) Maximum Temperature – Plus 55^0C.
	(ii) Spectrum Management	The system should be in compliance with the Spectrum Management Policy of Government of India.
	(iii) Vehicle Configuration	The combat weight of the system (less crew) should be capable of being mounted on different vehicles (not more than two in-service vehicles) so as to achieve power to weight ratio of 14:1 or more.
	(iv) Design and Construction	The design and construction of the system should cater for the following aspects:- (aa) Modular design with built-in-test facility for early fault identification and system checks. (ab) The system should be modular in construction to facilitate repairs by replacement of PCBs/Modules. (ac) The design should be upward compatible to cater for obsolescence of PCBs/Modules.

Maintainability & Ergonomic Parameters

7. The VMCSDS must fulfil the following maintainability and ergonomic parameters/capabilities: -

S No	Parameter	Requirement
(a)	Shelf Life	(i) **The service life of equipment should not be less than 10 years.** (ii) **The unguided rockets (Version I) should have a shelf life of more than 15 years and extendable upto 25 years** as per the normal storage condition of Indian climatic condition. (iii) However, **min 10 years of shelf life if under operational exposure/field condition** for prolonged periods (6 months continuous exposure).
(b)	Packing Material & Water Proofing	The storage and shipping container for rockets must be waterproof when exposed to tropical rain.
(c)	Environmental Control	An environmental control system for operation in extreme climate condition of both Hot and cold climate (AC & Heater) should be fitted in the crew compartment to maintain manual efficiency in harsh climate over sustained period.

8. **Maintenance & Repair**. Post warranty, engineering/ maintenance support for the equipment will be by in-house maintenance agency. For this the development agency should plan and develop suitable engineering Special Maintenance Tools, Special Test Equipment Test Jigs & Fixtures, Technical Literature (as per JSS-0251) and Training Aggregates upto Base Level repairs. The system should be easily repairable on account of design and construction and after suitable training of in-house repair agency technicians. PCB/ Modules should be appropriately marked for easy identification. Counter should be provided to display completive in-service usage for facilitating preventive and periodic maintenance. Use of Military grade components should be made as far as possible. Any component or technology banned by the Government should not be used. The software used (except the software used in COTS eqpt) should undergo software quality assurance as per relevant and latest International Military standards. The software should be restorable in field alongwith provision of upgradation. Adequate memory should be available to accept any upgradation in the future.

9. **Field Repairs**. These will be carried out in the field, insitu, as far forward as possible with minimum test equipment, tools and man hours. Emphasis will be laid on reduced diagnostic and repair time by replacement of defective modules/components.

10. **Environmental Test Standards**.

(a) Electrical and Electronic equipment testing as per applicable class of JSS55555:2020 (4th Rev).

(b) Optical and Opto Electronic equipment as per JSS5855:11:2019 (As per applicable table).

(c) Acceptance criteria for COTS items as per JSG 0825:2023 (As applicable).

11. Transport Instruction, handling instruction, storage instruction be laid out by OEM clearly.

ESSENTIAL PARAMETERS - 'B'

12. Nil.

DESIRABLE PARAMETERS

13. The desirable parameters are as under:-

(a) **Low RCS Radar System**.

(i) Detection Range - Not less than 08 Km for 0.01 Sqm RCS Drones.

(ii) Tracking Range - Not less than 08 Km for 0.01Sqm RCS Drones.

(b) **Passive RF Detection System**. Detection Range - Not less than 08 km for Drones with Simultaneous multi detection capability on multi directional approach.

(c) **Electro Optical Tracking System (EOTS) (Day and Night capable).**

(i) Detection Range - Not Less than 8 Km (target size 0.3 x 0.3 m) for Drones.

(ii) Tracking Range - Not less than 08 Km.

DETAILS OF DRAFTING TEAM

Prepared By	**: Col Ajay Verma**
Verified By	**: Brig OP Vaishnav, SM, VSM**
Address	**: Room No 608, D-1 Wing, Sena Bhawan**
Contact Details	**: 34001**

Appendix B
(Refers to Para 17 of EoI)

COMMERCIAL EVALUATION CRITERIA

Evaluation Criteria

1. Name of the Vendor.

2. Evaluation Criteria

S No	Criteria	Vendor Submission	Remarks (if Any)
(a)	Nature of the Company (refer Para 6(b) of Chapter III of DAP-2020)	Indian /Joint Venture	Supporting Documents to be attached.
(b)	Ownership status (refer Para 6(b) of Chapter III of DAP-2020)	Compliant / Non-compliant	
(c)	Category of Industry	Large / Medium / Small / Micro / Start Up	
(d)	Registration Details (MSMEs to provide UDYAM certificate, startups to provide DIPP License others to provide Registration certificate as applicable)	Registration No and Date	
(e)	Minimum average turnover for last three financial years from date of issue of EoI	_____ Cr	Supporting documents to be attached.
(f)	Net worth of previous financial year ending 31 Mar 2023.	Positive / Negative	
(g)	DIPP License details.	Yes/Applied for/Being applied for	

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.

Appendix C
(Refers to Para 18 of EoI)

TECHNICAL EVALUATION CRITERIA

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
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.	**Timelines**.		
	(a) Development of prototype incl Prototype Readiness Review - 78 weeks	Compliant/ Non Compliant	
	(b) Delivery of complete items as per delivery schedule 12 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/ Non Provided	
6.	**Nature of Business**. Manufacturing entity or System Integrator of defence equipment and not a trading company.	Compliant/ Non Compliant	
7.	**Experience**. Min 02 yrs, experience in broad areas of manufacturing of missiles, launchers, explosives and other related equipment (Details to be provided with the response). If not, than cumulative experience of at least 03 years in above areas, resulting in gaining of competence for manufacturing the proposed product (Details of Existing manufacture related infrastructure /R&D/Quality control facilities to be provided)	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
PSQR Requirements			
Introduction and Proposed Employment of the System			
8.	**Introduction**. (a) **Smart Warfighting Array of Reconfigurable Modules** (**SWARM**) of Drones configuration poses a **credible asymmetric threat** to all assets deployed in the Tactical Battle Area and coastal environment. Therefore, there is an urgent requirement of developing and procuring suitable weapon systems for countering and neutralising this emerging threat of SWARM of Drones. (b) The proposed system should have a surveillance, detection and tracking capability, microprocessor for computing a targeting solution and a kinetic weapon system for hard kill.	Compliant/ Non Compliant	
9.	**Aim**. To define Preliminary Staff Qualitative Requirements of Vehicle Mounted Counter Swarm Drone System (VMCSDS).	Compliant/ Non Compliant	
10.	**System Visualisation**. In view of the available/displayed indigenous technological capability of system development, integration and miniaturization, it is proposed that the system be developed **in a multi stage spiral development** manner as under:- (a) **Surveillance & Detection System**. (i) **Radar System**. The radar should be able to detect low RCS targets not less than 50 simultaneously, identify and prioritize the threat and thereafter assist in designation of the hostile targets to the Weapon system through the Control Station for engagement.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(ii) **Passive RF Detection System**. The passive RF detection system should be able to detect low RCS drones in a SWARM configuration by means of inter and intra RF communication signal interception between individual drones within the SWARM and/or GCS and provide direction of detected emitter SWARMs or master GCS to the control station. It should detect frequency ranges from 400 MHz to 12 GHz (to include ISM bands, GNSS Band, Wifi bands).	Compliant/ Non Compliant	
	(iii) **Electro Optical Tracking System (EOTS)**. The day and night capable system to be based on EO& Thermal Imaging sight with tracking facility.	Compliant/ Non Compliant	
	(b) **Tracking System**. The tracking system of Counter SWARM Drone System should be based on combination of Radar &EOTS. Radar with EOTS should be able to cue the weapon system on to the SWARM target or at the centroid of the SWARM. Radar/EOTS should be able to acquire and track the target and able to provide required firing/targeting solution to weapon system based on the dynamically changing SWARM parameters.	Compliant/ Non Compliant	
	(c) **Weapon System**. It should have a hard kill based engagement capability to destroy hostile drones within a SWARM expanse. As part of a spiral development model, initially for **Version I** the weapon system will be rockets/projectiles with proximity and/or timed fuze based on a single/multiple vehicle configuration and **Version II** to be guided missiles with proximity fuze (or variations thereof). The system should be capable of being rotated in azimuth and elevation to enable enhanced coverage of the airspace by the weapon platform.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(d) **Control Station**. A control station with following capability is envisaged:- (i) It should have means to integrate inputs from Surveillance & Detection Sensors, with suitable alerting facility and display systems with user friendly Graphical User Interface (GUI) for displaying parameters of targets detected and tracked. (ii) It should have controls to effect successful interdiction of target drones in a SWARM using Hard Kill Weapon Systems. (iii) It should have ability to be integrated into existing and futuristic AD C&R architecture with other existing soft kill solutions. (iv) It should have the capability of displaying inputs of surveillance and tracking systems including radar, passive RF and EOTS. The provision of target data display should be available to enable target selection and distribution for engagement kill systems as per priority. It should preferably have two Operator work stations. (v) It should have facility to overlay maps as per DSM & open sources. (vi) Based on GUI it should have record & play back facility for upto six hours of operation.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
11.	**Proposed Service Employment**. (a) The VMCSDS should be able to be deployed independently or in conjunction with embedded in-service Air Defence weapon systems. (b) The system will be deployed in all types of terrain as obtainable in India (Plains, Desert, HAA and coastal conditions/environment) in support of Field Formations/installations.	Compliant/ Non Compliant	
Operational Parameters			
12.	The VMCSDS should have a surveillance, detection and tracking capability, microprocessor for computing a targeting solution and a kinetic weapon system for hard kill with following parameters:-		
	(a) **Terrain**. The system should be capable of being operated in all types of terrain as obtained in the country. These are as follows :- (i) High Altitude & Mountainous Area-upto 5000m above Mean Sea Level (MSL). (ii) Plains, Desert & HAA. (iii) Coastal conditions/environment.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(b) **Physical Environment as obtained in India** VMCSDS should be able to operate under all weather conditions & areas including in coastal areas and snow bound locations:- (i) **Operating Temperatures**. (aa) Min Temp -Minus 20^0 C. (ab) Max Temp- Plus 45^0 C. (ii) **Humidity**. Upto 95%.	Compliant/ Non Compliant	
	(c) **Weight**. The combat weight of the system (less crew) should be capable of being mounted on different vehicles (not more than two in-service vehicles) so as to achieve power to weight ratio of 14:1 or more.	Compliant/ Non Compliant	
	(d) **Dimensions**. The Physical dimension including its weight should be such that the equipment can be transportable by service Rail on Broad Gauge with ODC, Road (on Tank Transporter), Ship and Air (C-17 Aircraft).	Compliant/ Non Compliant	
	(e) **Power supply system**. (i) The system including all its components should be able to operate from on-board power supply by suitable generator/power tap off from vehicle. The system should be able to function in HAA. (ii) The power backup for emergency operations for control station should be for min of 30 mins. (iii) It should be feasible to utilise commercial power supply for operation of systems.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(f) **Crew**. Not more than 3 persons (excluding driver(s)).	Compliant/ Non Compliant	
	(g) **Low RCS Radar System**. The low RCS Radar should be based on 3-D Active Electronically Scanned Array with digital beam forming. It should have multifunction capability and work through jamming. It should be capable of 360 deg surveillance, target detection and tracking.	Compliant/ Non Compliant	
	(h) **Passive RF Detection System**. Not less than 06 km for Drones with Simultaneous multi detection capability on multi directional approach.	Compliant/ Non Compliant	
	(j) **EOTS**. In addition to radar tracking, Electro Optical Tracking System should be incorporated for angular tracking during day and night. The EO device should consist of Thermal Imaging (TI) sight and optical sight for tracking during day and night.	Compliant/ Non Compliant	
	(k) **Hard Kill System (Version I)** (i) Minimum Range - Not less than 50m. (ii) Maximum Range-Not less than 2.5 Km.	Compliant/ Non Compliant	
	(l) **Microprocessor**. It should process the synthetic picture received from Radar and undertake gating of the target picture. It should be capable of undertaking selective launch at SWARM Expanse.	Compliant/ Non Compliant	
	(m) **Communication**. (i) **External Communication**. Provision for fitment of three (in service) radio sets. (ii) **Internal Communication**. Digital internal communication system for crew members.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(n) **Navigation**. The navigation system (NavIC and IRNSS/GPS/ GLONASS) should be capable of operating both by day and night to facilitate cross country move of equipment with Mechanised Formations.	Compliant/ Non Compliant	
	(o) **Drivers Night Sight**. Drivers Night Sight capability should be there.	Compliant/ Non Compliant	
	(p) **EMI/EMC compatibility**. The system should be EMI/EMC compliant as per relevant provisions of MIL Standard 461 (as applicable).	Compliant/ Non Compliant	
	(q) **BITE**. The system should have Built in Test equipment to support diagnostics and repair through PCB/Module replacements in field conditions. Audio/visual alarms be provided to indicate fault indication/test failure/system malfunction upto PCB/Module sub assembly. All system functions should be continuously monitored and fault indicated. It should comprise of operator level tests and plug in diagnostics of an integrated system.	Compliant/ Non Compliant	
Technical Parameters			
13.	The VMCSDS must fulfill the following technical parameters/capabilities:-		
	(a) **Surveillance & Detection System (Version I)**. (i) **Low RCS Radar System** (aa) **Type of Radar**. Single Face 3 D AESA Radar with rotating antenna.	Compliant/ Non Compliant	
	(ab) **Detection Range**. Not less than 06 Km for 0.01 Sqm RCS Drones.	Compliant/ Non Compliant	
	(ac) **Tracking Range**. Not less than 06 Km for 0.01Sqm RCS Drones.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(ad) **Altitude of Target**. Upto 1500m.	Compliant/ Non Compliant	
	(ae) **Azimuth Coverage**. 360 Degrees.	Compliant/ Non Compliant	
	(af) **Elevation Coverage**. (-)10 Degrees to (+) 70 Degrees.	Compliant/ Non Compliant	
	(ag) **Accuracy** (aaa) Azimuth - ≤ 0.1Degree. (aab) Range - ≤ 30m. (aac) Elevation - ≤ 0.5 Degrees.	Compliant/ Non Compliant	
	(ah) **Resolution/Discrimination** (aaa) Azimuth - ≤ 1 Degrees. (aab) Range - ≤ 50m. (aac) Elevation - ≤ 2 Degrees.	Compliant/ Non Compliant	
	(aj) **Minimum Target Velocity**. 0 m/s (Capable of engaging Hovering Targets).	Compliant/ Non Compliant	
	(ak) **Regeneration Mode**. Capable of Regeneration mode with minimum time for data capture.	Compliant/ Non Compliant	
	(al) **Hours of operations**. Minimum 08 hours of continuous operation	Compliant/ Non Compliant	
	(am) **Identification Friend or Foe (IFF)**. It should have provision for integration with IFF system being used in three services.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(ii) **Electronic Counter Counter Measures (ECCM)**. The radar should be able to operate effectively in Air Defence Electronic Counter Measures (ECM) environment caused by ground based and air borne active and deception jammers. The system should have following ECCM :-		
	(aa) Facilities to work through jamming. (ab) Facility to lock on jammer. (ac) Facilities to counter deception jamming in range, azimuth and velocity. (ad) Facilities to counter anti tracking measures. (ae) Side lobe cancellation. (af) Random PRF. (ag) Frequency Hopping Spread Spectrum (FHSS). (ah) Facility for sector blanking. (aj) As an anti-Anti Radiation Missiles (ARM) measure, facility should be provided so that radar can be programmed to automatically switch off on detection of ARM launch on the radar in any operator chosen direction.	Compliant/ Non Compliant	
	(iii) **Passive RF Detection System** (aa) **Detection Range**. Not less than 06 km for Drones with Simultaneous multi detection capability on multi directional approach.	Compliant/ Non Compliant	
	(ab) **Azimuth Coverage**. 360 Degrees.	Compliant/ Non Compliant	
	(ac) **Azimuth Accuracy**. Upto 5 Degrees.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(ad) **Elevation Coverage**. Minus 05 Degrees to Plus 45 Degrees.	Compliant/ Non Compliant	
	(ae) **Frequency Detection Range**. 0.4MHz – 12GHz.	Compliant/ Non Compliant	
	(af) **Threat Library**. The database of commonly used frequencies should be preloaded in the system as threat library. The system should be AI enabled and it should have provision for auto identification as per system threat library which should be updatable for new target types should exists. Updates should be provided for entire sys service life.	Compliant/ Non Compliant	
	(b) **Electro Optical Tracking System (EOTS) (Day and Night capable)** (i) **Azimuth Coverage**. 360 Degrees with ability to get cue from Radar.	Compliant/ Non Compliant	
	(ii) **Detection Range**. Not Less than 6 Km (target size 0.3 x 0.3 m) for Drones.	Compliant/ Non Compliant	
	(iii) **Altitude of Target**. Upto 1500m.	Compliant/ Non Compliant	
	(iv) **Tracking Range**. Not less than 06 Km.	Compliant/ Non Compliant	
	(v) **Focus**. Auto/Manual.	Compliant/ Non Compliant	
	(c) **Hard Kill System (Version I)** (i) **Engagement Range** Minimum Range - Not less than 50m. Maximum Range - Not less than 2.5 Km	Compliant/ Non Compliant	
	(ii) **Engagement Height**. 30m-1500m AOL.	Compliant/ Non Compliant	
	(iii) **Type of Guidance**. Unguided Rockets.	Compliant/ Non Compliant	
	(iv) **Speed**. More than 150m/s.	Compliant/ Non Compliant	
	(v) **Fuze**. Proximity and/or Timed Fuze (Programmable Proximity Fuze).	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(vi) **War Head**. Fragmentation Type with blast radius of upto 10 m	Compliant/ Non Compliant	
	(vii) **Launcher**. (aa) Capable of firing Bank of Rockets.	Compliant/ Non Compliant	
	(ab) Inclined Launcher should have capability to be moved in Azimuth upto 10 degrees.		
	(viii) **Azimuth coverage**. 360 Degrees or ± 180 Degrees.	Compliant/ Non Compliant	
	(d) **Microprocessor Characteristics**. (i) Process the synthetic picture received from Radar. (ii) Undertake Gating of the target picture with facility to increase and decrease the Gate. (iii) Identification of Centroid of the SWARM. (iv) Capable of undertaking selective launch at SWARM Expanse.	Compliant/ Non Compliant	
	(e) **Control Station**. (i) Integrate detection inputs received from various sensors and identify threat to provide a composite air picture. (ii) It should be able to get input from surveillance & detection system (Radar & Passive RF detection system), AD C&R and execute engagement of SWARM of Drones through EOTS. (iii) It should facilitate autonomous (standalone mode of System) & facilitate integrated operation (connected to existing and futuristic AD C&R (Akashteer) and AD deployment) of the system.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
	(f) **Miscellaneous** (i) Storage Temperature (aa) Minimum Temperature – Minus 30^0C. (ab) Maximum Temperature – Plus 55^0C.	Compliant/ Non Compliant	
	(ii) **Spectrum Management**. The system should be in compliance with the Spectrum Management Policy of Government of India.	Compliant/ Non Compliant	
	(iii) **Vehicle Configuration**. The combat weight of the system (less crew) should be capable of being mounted on different vehicles (not more than two in-service vehicles) so as to achieve power to weight ratio of 14:1 or more.	Compliant/ Non Compliant	
	(iv) **Design and Construction**. The design and construction of the system should cater for the following aspects:- (aa) Modular design with built- in-test facility for early fault identification and system checks. (ab) The system should be modular in construction to facilitate repairs by replacement of PCBs/Modules. (ac) The design should be upward compatible to cater for obsolescence of PCBs/Modules.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
Maintainability & Ergonomic Parameters			
14.	The VMCSDS must fulfil the following maintainability and ergonomic parameters/capabilities: -		
	(a) **Shelf Life**. (i) **The service life of equipment should not be less than 10 years**. (ii) **The unguided rockets (Version I) should have a shelf life of more than 15 years and extendable upto 25 years** as per the normal storage condition of Indian climatic condition. (iii) However, **min 10 years of shelf life if under operational exposure/field condition** for prolonged periods (6 months continuous exposure).	Compliant/ Non Compliant	
	(b) **Packing Material & Water Proofing**. The storage and shipping container for rockets must be waterproof when exposed to tropical rain.	Compliant/ Non Compliant	
	(c) **Environmental Control**. An environmental control system for operation in extreme climate condition of both Hot and cold climate (AC & Heater) should be fitted in the crew compartment to maintain manual efficiency in harsh climate over sustained period.	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
15.	**Maintenance**		
	Post warranty, engineering/ maintenance support for the equipment will be by in-house maintenance agency. For this the development agency should plan and develop suitable engineering Special Maintenance Tools, Special Test Equipment Test Jigs & Fixtures, Technical Literature (as per JSS-0251) and Training Aggregates upto Base Level repairs. The system should be easily repairable on account of design and construction and after suitable training of in-house repair agency technicians. PCB/ Modules should be appropriately marked for easy identification. Counter should be provided to display completive in-service usage for facilitating preventive and periodic maintenance. Use of Military grade components should be made as far as possible. Any component or technology banned by the Government should not be used. The software used (except the software used in COTS eqpt) should undergo software quality assurance as per relevant and latest International Military standards. The software should be restorable in field alongwith provision of upgradation. Adequate memory should be available to accept any upgradation in the future.	Compliant/ Non Compliant	
16.	**Field Repairs**. These will be carried out in the field, insitu, as far forward as possible with minimum test equipment, tools and man hours. Emphasis will be laid on reduced diagnostic and repair time by replacement of defective modules/components.	Compliant/ Non Compliant	
17.	**Environmental Test Standards**. (a) Electrical and Electronic equipment testing as per applicable class of JSS55555:2020 (4th Rev). (b) Optical and Opto Electronic equipment as per JSS5855:11:2019 (As per applicable table). (c) Acceptance criteria for COTS items as per JSG 0825:2023 (As applicable).	Compliant/ Non Compliant	

S No	Criteria and Sub Criteria	Vendor Response	Remarks (if Any)
18.	Transport Instruction, handling instruction, storage instruction be laid out by OEM clearly.	Compliant/ Non Compliant	
DESIRABLE PARAMETERS			
19.	The desirable parameters are as under:- (a) **Low RCS Radar System**. (i) Detection Range - Not less than 08 Km for 0.01 Sqm RCS Drones. (ii) Tracking Range - Not less than 08 Km for 0.01Sqm RCS Drones. (b) **Passive RF Detection System**. Detection Range - Not less than 08 km for Drones with Simultaneous multi detection capability on multi directional approach. (c) **Electro Optical Tracking System (EOTS) (Day and Night capable)**. (i) Detection Range - Not Less than 8 Km (target size 0.3 x 0.3 m) for Drones. (ii) Tracking Range - Not less than 08 Km.		

20. **Compliance Certificates**.

(a)	Correctness Certificate (As per Appendix D)	:	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 be assessed.

3. Conditional responses to PSQR parameters are not acceptable and are liable to be assessed as Non-Compliant.

CORRECTNESS CERTIFICATE

Appendix D
(Refers to Para 31 of EoI)

CORRECTNESS CERTIFICATE

It is certified that information submitted in the documents as part of the response to Expression of Interest for the project of Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)) 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.

Appendix E
(Refers to Para 27 of EoI)

CONFIDENTIALITY AGREEMENT

1. It is certified that Expression of Interest document for the project Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)) 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 EoI 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.

Appendix F
(Refers to Para 32 of EoI)

EoI COMPLIANCE CERTIFICATE

It is certified that all the aspects mentioned in the Expression of Interest for the procurement of Vehicle Mounted Counter Swarm Drone System (VMCSDS (Version I)) 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.

Appendix G
(Refers to Para 23 of EoI)

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. **General Information of Company**.
    (a) CIN
    (b) Shareholding pattern.
    (c) Details of ISO, Quality Assurance and other Certification.
11. **Financial Information**:-
    (a) Revenue and Net Profit during the last three Financial Years.
    (b) Present Net Worth of the Company.
    (c) Credit Rating/*s from RBI/SEBI approved agencies.
12. Nature of Business (Manufacture / Trader / Sole selling or Authorised Agent/ Dealer / Assembler / Processor / Re packer/ Service Provider). Please give broad product range as applicable

13. Details of Current Products :-

(a) Type / Description.

(b) Licensed / Installed Capacity.

(c) Annual Production for Preceding 3 Years.

14. Credit Rating.

15. Details of IPRs if any.

16. Details of Foreign Collaborations if any planned for execution of project.

17. Technology Received from abroad and assimilated / planned for execution of project.

18. Products Already Supplied :-

(a) To Indian Army / Air Force / Navy.

(b) PSUs.

(c) DRDO and its Laboratories.

(d) Ordinance Factories.

(e) Any other Defence Organisation.

(f) To other Principal Customers.

19. Details of Developmental Facilities :-

(a) R&D Facilities Available.

(b) Number of Technical Manpower.

(c) Percentage of Total Tum-Over Spent on R&D during the Last Three Years.

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

21. Any other relevant information (including Assistance required from SHQ during prototype development stage).

22. 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 :