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Air HQ/S 96135/151/ASR

28 Aug 24

DIRECTORATE OF AIR STAFF REQUIREMENTS (EW)

**INVITATION FOR EXPRESSION OF INTEREST (EOI) FOR DESIGN,
DEVELOPMENT AND PROCUREMENT OF DRONE/UNMANNED AIRCRAFT
SYSTEM (UAS) MOUNTED AIRCRAFT EMULATOR UNDER MAKE-II
PROCEDURE OF DAP-2020**

1. Enclosed please find an Expression of Interest (Eoi) for Design, Development and Procurement of Drone/Unmanned Aircraft System (UAS) Mounted Aircraft Emulator Under Make-II Procedure of DAP-2020 duly approved by DCAS.
2. You are requested to upload the subject Eoi on MoD website.



(SK Das)
Gp Capt
Gp Capt ASR EW1

Enclosure: As stated.

Gp Capt DAD

Dy No.	03
Date	29 Aug 24
Air Cmde DAD	
Gp Capt DAD 1	
Gp Capt DAD 2	
Wg Cdr DAD 1A	2
Wg Cdr DAD 2A	
Wg Cdr DAD 1B	
Wg Cdr DAD 2B	
WO IC DAD	

Gp Capt Capt Deep
30/8
Forward to DDP for uploading
29/09

**INVITATION FOR EXPRESSION OF INTEREST (EOI) FOR
DESIGN, DEVELOPMENT AND PROCUREMENT OF DRONE/UNMANNED
AIRCRAFT SYSTEM (UAS) MOUNTED AIRCRAFT EMULATOR AND ASSOCIATED
EQUIPMENT UNDER MAKE-II PROCEDURE OF DAP-2020**

Reference:-	Defence Acquisition Procedure 2020 (DAP - 2020)	
Appendices:-	A	Format for Eol Response
	B	Commercial and Technical Evaluation Criteria
	C	Confidentiality Agreement
	D	Correctness Certificate,

Layout

1. The Eol comprises the following parts:-
 - (a) **Part-I** : General Information
 - (b) **Part-II** : Scope of Project
 - (c) **Part-III** : Evaluation Criteria
 - (d) **Part-IV** : Procedure for submission of Response to the EOI
 - (e) **Part-V** : Miscellaneous
2. The nodal officer for this project for all queries/ clarifications/ coordination will be Chairman, Project Facilitation Team (PFT), "Design, Development and Procurement of Drone/UAS Mounted Aircraft Emulator (DMAE) and associated equipment". Address and contact details of the nodal officer are given at Para 25 of the Eol.

PART I: GENERAL INFORMATION

3. The brief on the equipment is as follows:
 - (a) . The DMAE is intended to be designed as an airborne emulator which can emulate Radio Frequency. (RF) Signature of multiple aircraft simultaneously. It should be possible to pre-program the profiles of these emulated aircraft on ground through pre-flight planning which shall be executed by the DMAE during flight.
 - (b) The degradation can be carried out through creation of false targets in the radar scope through airborne emulators. A low-cost solution for creation of false targets to degrade the air situation picture of the radar could be through a low power aircraft emulator carried on a drone/Unmanned Aircraft System (UAS). The aircraft emulator will fly in a group or a swarm to create multiple aircraft at different range, speed and height. The DMAE

shall also create false target/targets mimicking an actual fighter aircraft/helicopter.

(d) The "DMAE system" will comprise of five drones and one Ground Control Station (GCS). The system should be capable of flying drones in a swarm. Each drone shall individually or collectively be able to carry out surveillance as well as deception/jamming operations in order to degrade the performance of the Radar operations.

Objective

4. The objective of this EoI is to seek responses from eligible Indian Entities to indigenously Design & Develop Qty 01 prototype "DMAE system" under the 'Make II' sub-category of 'Make' and to procure Qty-10 Drone/UAS Mounted Aircraft Emulator systems (including 10 GCS) under the 'Buy (Indian-IDDMM)' category as per Chapter- III of DAP 2020, after successful development of prototype.

PART II: SCOPE OF THE PROJECT

5. **Phases.** The project involves following two phases:-

(a) **Design and Development Phase.** This phase involves indigenous Design and Development of prototype "DMAE system". This phase will end upon approval of the trial report by the appropriate authority within the Air HQs as per Para 5 (b) (i) of **Chapter-III of DAP 2020** under the 'Make-II (Industry Funded)' sub-category with minimum 60% IC content.

(b) **Procurement Phase.** This phase will commence with 'Buy (Indian-IDDMM)' with a minimum of 60% Indigenous Content(IC) from qualifying DAs.

6. **Categorisation.**

(a) **Design and Development Phase.** 'Make-II (Industry Funded)' Sub Category of Make Category of DAP-2020.

(b) **Procurement Phase.** 'Buy (Indian-IDDMM)' in accordance with Para 6(d) of Chapter III of DAP-2020 from qualifying Development Agency (DA) with minimum 60% IC.

7. **Quantities.**

(a) **Design and Development Phase.** Quantity 01 prototype DMAE system consisting of five DMAEs and one GCS (along with associated equipment).

(b) **Procurement Phase.** Qty-10 Drone/UAS Mounted Aircraft Emulator Systems (including 10 GCS) along with associated equipment.

8. **Make-II Procedure.** Detailed guidelines on Make II Procedure (Chapter III of DAP 2020) may be downloaded from MoD website for reference.

9. **Broad Technical Requirements.** The broad technical requirements will be shared with the companies who intend to participate in the MAKE-II Project. The broad technical requirements sharing from IAF will take place only if the participating company's proposal was found compliant to the Technical and Commercial Evaluation Criteria placed at Para 24 and after signing of Non-Disclosure Agreement. The Essential Requirements at Part III of the broad technical requirements must be met prior to conversion of broad technical requirements to ASQR after the conduct of Single Stage Composite Trials (SSCT).

Timelines & Milestones

10. **Single Stage Composite Trials.** SSCT will be conducted in accordance with Para 55 of Chapter III of DAP 2020. Trials will be undertaken within India at IAF units.

11. **Milestones.** The Drone/UAS Mounted Aircraft Emulator Systems are planned to be inducted as per timeline brought out below. The estimated timeline for induction/delivery is as follows (Appendix-L to Chap-III of DAP 2020):-

SI No	Activity	Remarks	Timeline	Cumulative Timelines
(a)	Issue of EoI	By PFT	--	T ₀
(b)	EoI Response Submission	By EoI Respondents	08 weeks	T ₀ + 8 weeks
(c)	EoI Response Evaluation	By PFT	06 weeks	T ₀ + 14 weeks
(d)	Issue of Project Sanction Order (PSO) for Prototype Development	To selected DAs	02 weeks	T ₀ + 16 weeks
(e)	Prototype development	By DAs	30-48 weeks	T ₀ + 46 weeks to T ₀ + 64 weeks
(f)	Single Stage Composite User Trials (SSCT) & Acceptance of Trial Report	--	07 weeks	T ₀ + 53 weeks to T ₀ + 71 weeks
(g)	Conversion of broad technical requirements to ASQRs	--	02 weeks	T ₀ + 55 weeks to T ₀ + 73 weeks
(h)	Issue of Commercial RFP	--	02 weeks	T ₀ + 57 weeks to T ₀ + 75 weeks
(i)	Solicitation of Commercial Offer	--	04 weeks	T ₀ + 61 weeks to T ₀ + 79 weeks
(k)	Finalisation of Cost Negotiation Committee (CNC)	--	04 weeks	T ₀ + 65 weeks to T ₀ + 83 weeks
(l)	Signing of Contract	--	02 weeks	T ₀ + 67 weeks to T ₀ + 85 weeks

Development of Prototype and Trials

12. Drone/UAS Mounted Aircraft Emulator System should be developed as per broad technical requirements. Any clarification related to functional or operational aspects of development as sought by the DAs will be provided by the PFT.

13. After the prototype DMAE System has been developed as per broad technical requirements, and confirmed by the PFT in a collegiate manner, the PFT with requisite empowered members, would carry out the SSCT of the prototype. If the prototype is assessed as meeting the desired standards, the broad technical requirements would be converted to ASQRs. Necessary technical literature pertaining to the design & material and verification of IC will be provided by the DAs prior to the conduct of SSCT of the prototype DMAE. All process for airborne certification as indicated in the relevant chapters of IMAP-2023 will be followed. Quarterly updates on the progress of the project need to be forwarded by the DA to the PFT. Towards the closure of the project (i.e last 3 months) fortnightly feedback need to be provided.

14. DAs will be required to produce the following documents for vetting and approval by IAF, DGAQA and Design Certification Agency as per broad technical requirements. The documents will be provided to the PFT during prototype development stage and documents will be finalized prior to conduct of SSCT.

- (a) Environmental Qualification Test Procedure (EQTP).
- (b) Detailed Specification Sheet.
- (c) Detailed drawings.
- (d) Manufacturing Process Document.
- (e) Quality Assurance Plan (QAP).
- (f) Acceptance Test Procedure (ATP).
- (g) **User manual/ Brochure containing the following:-**
 - (i) Detailed drawings, specifications, standards & capabilities of Drone/UAS Mounted Aircraft Emulator & its accessories.
 - (ii) Detailed guidelines/ procedure for installation & removal, data acquisition and downloading, operating instructions and storage facility.
 - (iii) Training documents.

15. Design & Development (including developmental testing/ trials) of the Drone/UAS Mounted Aircraft Emulator Systems is to be undertaken by the DAs. In case any IAF facility

is required during trials, the vendor may provide a list of such facilities in his response (Para 29 of **Appendix A** refers). Each participating vendor will be provided three trials to prove the system meets the desired standards as specified in the broad technical requirements.

Solicitation of Commercial Offers

16. A commercial Request for Proposal (RFP) for 'Buy (Indian-IDDMM)' phase would be issued to all DAs who have cleared the 'single stage composite trials' of prototype to solicit their commercial offers and additional technical information/ documentation, as may be necessary.

17. The project is envisaged to have the following deliverables and the details of procurement phase will be further amplified in the Commercial Request for Proposal (RFP):-

(a) **Prototype Development Phase**. Qty-01 Drone/UAS Mounted Aircraft Emulator System and one GCS (along with associated equipment).

(b) **Procurement Phase**.

(i) A total of Qty-10 Drone/UAS Mounted Aircraft Emulator Systems (Qty 50 DMAEs including 10 GCS) along with associated equipment.

(ii) Requisite training, Technical literature including user handbook, operations & technical documents and manuals.

Intellectual Property Rights (IPRs)

18. Policy on IPRs is mentioned at Para 59 of the Chapter III of DAP-2020 for Make-II Procedure.

PART III : EVALUATION CRITERIA

Commercial and Technical Evaluation Criteria

19. **Eligibility.** Indian Entity satisfying criteria given at Para 20 of Chap 1 to DAP 2020 is considered as an eligible "Indian Entity" for the project.

20. EoI respondents will be evaluated for compliance to commercial and technical criteria as per **Appendix B**.

Indigenous Content (IC)

21. Indigenous Content of minimum 60% is to be ensured at prototype stage and during procurement stage. After successful development of Drone/UAS Mounted Aircraft Emulator system, further procurement will be as per the 'Buy (Indian-IDDM)' procedure in accordance with DAP-2020. IC content will be assessed as per guidelines at Para 21 of Chapter I of DAP 2020. All relevant deliveries made under contract shall be accompanied by a certificate of IC issued by the Chief Financial Officer (CFO) of the prime/ main contractor. All final deliveries under contract shall be accompanied, in addition to the certificate-issued by the CFO of the prime (main) contractor as aforesaid, by its Company Auditor's certificate. Break down of IC in terms of components, materials and software "for the entire system" is to be provided.

22. **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 Paras 13,23,27&28 of **Appendix A**). Also, with such collaboration, EoI Respondent must justify compliance to IDDM requirement for the D&D and subsequent manufacturing of DMAE equipment.

PART IV: PROCEDURE FOR SUBMISSION OF RESPONSE TO THE EoI

23. Guidelines for Submitting EoI Responses.

(a) The responses should be submitted as per format placed at **Appendix A**. Should a vendor need to mention any other information, a separate column/ row/ additional pages may be added.

(b) All responses as per 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 assessment. Such document may be used only at discretion of review committee/ person.

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

(a) Failure to meet the Commercial and Technical Evaluation Criteria given at **Appendix B**.

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

(c) Failure to agree with the project timelines.

(d) Failure to offer desired indigenous content.

(e) Any other parameter of the response considered inadequate.

25. The envelopes shall be addressed as under:-

Chairman, Project Facilitation Team

Design, Development and Procurement of
Drone/UAS Mounted Aircraft Emulator System
Gp Capt Air Staff Requirements (EW) (Room No. 449)
Air HQ (Vayu Bhawan)
Rafi Marg, New Delhi-110011
Telephone/ Fax: 011- 23060219/ 011-23011753
E-Mail ID: panther.449@gov.in

26. The response to this EoI must be submitted by **3:00 PM** on **25 Oct 24** at the address mentioned above.

27. 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 C**.

PART V: MISCELLANEOUS

28. **Pre-Eol Response Meeting.** Companies may submit written queries/ clarifications/ amplifications on specific issues within 10 days of the issue of Eol. A pre-response meeting will be held in about three (3) weeks after the issue of Eol to clarify issues/ queries raised by the participating firms to facilitate submission of response. Date of pre-response meeting will be promulgated by the PFT.
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 Para 119 of Chapter II of DAP 2020, shall apply mutatis mutandis to 'Buy (Indian-IDDM) phase of the project.
31. Respondents would be subject to disqualification if they make false, incorrect, or misleading claims in their response to this Eol. A 'Correctness Certificate' as per the format at **Appendix D** will be furnished as part of the response.
32. Please acknowledge the receipt of this invitation for Eol.

File No: **AIR HQ/S 96135/151/ASR**

Date: **28 Aug 2024**



(Anand Mishra)
Group Captain
Chairman, PFT

FORMAT FOR EOI RESPONSE

PART I – VENDOR DETAILS

1. Name of Case:
 2. Name of EoI Respondent:
 3. Mailing Address/Contact/Phone/Email/Website (If factory site is located differently, indicate address of the same):
 4. Name/Particulars of CEO:
 5. Date of incorporation:
 6. Brief history of company:
 7. Nature of Company:
(Public/Private/Limited/Sole proprietorship etc)
 8. Category of Industry:
(Large/Medium/Small/Micro/Start Up)
- Note:** Attach the certificate, if the company is a MSME.
9. Attach a certificate, if company has a valid Defence Industrial Licence
 10. Nature of business (Manufacturer/ Trader/ Sole Selling or Authorised Agent/ Dealer/ Assembler/ Processor/ Re packer/ Service Provider):
 11. Average Turn Over of the last three financial years:
 12. Net worth of the company, as on 31 Mar of last FY (year 2024) (should be positive).
 13. Details of current products:-
(Type/ Description, Licensed/ Installed Capacity, Annual Production for Preceding 3 Years):
 14. Details of foreign collaboration(s), if any, related to execution of the project.
(Include details related to name(s) of the entity, work share planned during design, development, as well as manufacture):
Note: In case of foreign collaboration, compliance to Para-3 of Chapter-III of DAP 2020 to be clearly established.
 15. Have you supplied any product/services to MoD, Indian Army/Indian Air Force/ Indian Navy/ Indian Coast Guard/ DPSUs/ DRDO labs/Ordnance Factories, any other defence organisation etc.? (Provide indicative list, if applicable)
 16. Details of permanent manpower:-
 - (a) Technical:-
 - (b) Administrative:
 17. Total Area of Factory:
 - (a) Covered area (Sq M):
 - (b) Uncovered area (Sq M):

(c) Any other space available (Sq M):

18. Is the factory space adequate to undertake design, development and manufacture of the Drone/UAS Mounted Aircraft Emulator system?

19. Have you ever developed or produced any equipment/parts related to DMAE? If yes, then the product details to be provided.

20. Have you ever developed and supplied any Electronic Warfare Equipment (Electronic Surveillance equipment or Jammer) to IA/IN/IAF? If yes, the details of equipment & Contract to be furnished.

21. Have you ever developed and supplied any Drones to IA/IN/IAF? If yes, the details of equipment & Contract to be furnished.

22. Have you ever developed any ground control station for drones? If yes, the details to be furnished.

23. Does your company has any ISO/AS certification? If yes, submit the current certificates.

24. Any other information, relevant to the case.

PART II: PROJECT SPECIFIC INFORMATION

25. Outline proposal of the company to undertake prototype development.
26. Stages/phases of development, with indicative time schedules.
27. Critical and Niche technologies planned to be delivered along with Indigenization status and plan.
28. Identify Sub-systems, LRUs and Software that shall mandatorily be indigenously designed & developed.
29. Life cycle support and obsolescence management aspects on the product need to be provided.
30. Milestones that can be demonstrated to facilitate project monitoring.
31. Role, responsibility and expertise details of the firm, if any, and if applicable.
32. Role of foreign technology provider, if any. In case of foreign collaboration, along with scope, depth & range of ToT, details of formal acceptance by foreign partner's government (i.e. country of origin) that any license required to transfer the technology will be granted in case selected. If any inter-governmental agreement is required, same also needs to be stated.
33. Foreign dependency details for critical technologies, components/ JV (if any)/etc.
34. Requirement of specialised testing assistance, where such facilities are available only with Armed Forces/DRDO/DGAQA/DGQA/DGNAI or any other Govt facility. (Please provide a list of such facilities, with time period for which required).
35. Information to prove design/developmental capacity:-
 - (a) *Past examples of indigenous design and development*
 - (b) *R&D facilities available in house, if any;*
 - (c) *Technical/ R&D manpower/expertise available,*
 - (d) *institutional tie ups, MoU, laboratory and drawing office facility, CAD/CAM facility*
 - (e) *Percentage of total turnover spent on R&D during last three years etc*
36. Details of important facilities:
 - (a) *Production facilities,*
 - (b) *CAD/CAM/Robotics, other advanced technology tools, environmental testing facilities, tool room, metrology and test eqpt facilities, instrumentation etc.*
37. Please furnish an undertaking that design and development will be as per provisions and guidelines of Chap III of DAP 2020, especially as they relate to Indigenous Design, Indigenous Content and IPR.
38. Documents to be submitted along with this appendix, by the EoI respondent:-
 - (a) Copy of latest certificate of incorporation by the Registrar of Companies.
 - (b) Audited Financial Statements (Profit & Loss Account and Balance Sheet) with Auditors Report for last three financial years.
 - (c) Acceptance Certificate, clause wise of all terms and conditions given in the EoI.
 - (d) Confidentiality Agreement (As per format at **Appendix C**).

- (e) Correctness Certificate (As per format at **Appendix D**).
- (f) Undertaking as per **Para 33** of this appendix.
- (g) Self-certification for adequacy of engineering and technical ability for D&D of Drone/UAS Mounted Aircraft Emulator system.
- (j) Certificate for broad technical requirements compliance.

Note:-

1. All submissions must be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not be assessed.
3. No separate financial, commercial criteria will be applied for start-ups.
4. Attach additional pages, as necessary.

COMMERCIAL AND TECHNICAL EVALUATION CRITERIA

Commercial Evaluation Criteria

SI No	Information	Pass Criteria
(a)	Nature of the Company	As per Annexure I to Appendix F of Chapter III of DAP 2020
(b)	Ownership Status	
(c)	Category of Industry.	Large/Medium/ Small/ Micro/Startup
(d)	Annual Turnover	Average annual turnover of the applicant company for the last three financial years ending 31 st March of the previous financial year should not be less than 5% of the estimated cost of the project.
(e)	Net Worth	Net worth of the entities ending 31 st March of the previous financial year should be " Positive ".

Technical Evaluation Criteria

SL No	Criteria and Sub Criteria	Pass Criteria
(a)	Engineering and technical ability	Self-certification by EoI respondent
(b)	Proposed indigenous content in percentage of total cost at prototype stage and final stage	As per Chapter III of DAP 2020
(c)	Total Land area	Statement of firm for adequacy
(d)	Broad technical requirements Compliance	Self-certificate of compliance by EoI respondent (this step will be completed, post issue of broad technical requirements to the EoI respondent, once it is found complaint to other requirements as specified in the EoI.
(e)	Intellectual Property Rights (IPR)	Vendor to confirm IPR as per Para 18 of EoI

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CONFIDENTIALITY AGREEMENT

1. It is certified that Expression of Interest document for the project of Design, Development and Procurement of Drone/UAS Mounted Aircraft Emulator System (DMAE) will not be shared with any agency in part or in full. 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 operational system 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 without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

Signature with Company Seal:

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CORRECTNESS CERTIFICATE

It is certified that information submitted in the documents as part of the response to Expression of Interest (Eol) for the project of Design, Development and Procurement of Drone/UAS Mounted Aircraft Emulator System (DAME) 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