

वैमानिकीय विकास संस्थापन
भारत सरकार, रक्षा मंत्रालय
न्यू तिप्पसंद्राबेंगलूर , - 560 075
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Date: 22/03/2024

INVITATION FOR EXPRESSION OF INTEREST (EOI)

The Director, ADE, Bangalore on behalf of the President of India, invites "Expression of Interest" from reputed industry partners for the following:-

EOI Ref No.	Description	Due Date
ADE/MMD/EOI-02/EOS/23-24	"Dual band (EO/IIR) Seeker as per Broad Specifications".	07/05/2024 @ 10:30Hrs

This EOI consists of Part-I (Technical Details) and Part-II (Terms and Conditions).

Yours sincerely,

(Amstrong Enose A, TO A)
For & on behalf of President of India

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Part-I: Technical Details

1.0 Brief Introduction:

Aeronautical Development Establishment (ADE) is a premier aeronautical laboratory under Defence R&D Organisation (DRDO) and is presently in the process of developing an experimental unmanned aerial vehicle (UAV). In this regard, Director-ADE, on behalf of President of India, seeks an expression of interest (Eol) for the same from interested and competent Indian Industry partner. Reputed Indian Partners who have the expertise and adequate experience in the field of engineering (especially optics, servo, sensors, imaging, purging, mechanical design etc.), structures should only participate in this Eol. It is mandatory for any Industry partner interested in responding to the EOI to participate in the Pre-EOI submission meeting at ADE through Video Conference/in person. All participants will be required to sign Non-Disclosure Agreement (NDA) with ADE before this meeting (authorized signatories with company seals must be present in the meeting). The response from the Partners will be evaluated by a technical committee. Detailed specifications may be shared with potential industry partners after due deliberations (e.g. NDA). The proceedings and findings of this committee will be used to shortlist capable Partner(s) for the Request for Proposal (RFP).

2.0 Broad Specifications:

Broad specifications of dual band (EO/IIR) seeker:

- a. Typical Acquisition range: 10-15km
- b. Acquisition altitude: <500m
- c. Acquisition methodology: Automatic scene recognition (Satellite Vs DTV Image matching)
- d. Locking Methodology: LoAL (Lock ON after Launch)
- e. Typical Field of Regard (FoR): Az: $\pm 30^\circ$ & EL: $+10^\circ$ to -55°
- f. CEP: $\leq 9m$
- g. Target Search region (foot print): 2km x 2km to 6km x 6km
- h. Target Search/Acquisition time: Within 15 Seconds
- i. Typical Size: $\leq 300mm$ (Length)
- j. Terminal profile: Pop-up maneuvers
- k. Terminal homing time: <50 Seconds
- l. Weight: <15 Kg
- m. Storage/maintenance free: up to 10 years
- n. Power: < 50Watts

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3.0 Tentative Quantity:

In the subsequent RFP, Partner will have to undertake the activities for all the following phases.

Phase 1: Design and development of dual band EO/IIR seeker as per detailed specifications.

Phase 2: Realization of Two flights worthy prototype units. It shall be integrated with aircraft structures. Dual band (EO/IIR) Seeker as per Broad Specifications in Annexure A. This exercise will be on billable basis, with exit options on either side.

Phase 3: Supply of 6 flights worthy units.

Phase 4: Integration and closed-loop test of EO/IIR seeker with other LRUs (e.g., NFCC).

It may be noted that although the above numbers shall be for quantities required during the developmental phase of the project, the winner of the bid is likely to be considered as prospective DcPP / PA / LSI subject to success of technical trials. For the production phase, additional quantities may be expected. However, all these numbers / quantities should be treated as indicative only, with no assurance / commitment from ADE at present. It may also be noted that ADE may facilitate the utilization of certain test / integration facilities within DRDO (including ATR, Chitradurga) and its established work centers based on mutual agreement with the Partner.

4.0 Industry partner Qualification Criteria:

4.1. Mandatory Pre-requisites: Following are the mandatory pre-requisites for participation in the Eol proceedings.

4.1.1 Technical:

4.1.1.1 Partner must have demonstrated relevant complex engineering capabilities in past through successfully completed supply orders

4.1.1.2 Partner should have successfully executed past similar orders for aerospace / defense systems to Indian / foreign aeronautics / defense / space customers for EO payloads development.

4.1.2 Management: Partner must be certified for the following standards and must submit proof of the same along with the Eol response.

4.1.2.1 AS 9100D / equivalent or better (Certificate to be submitted)

4.1.2.2 Relevant NADCAP certifications including testing, NDT, composites, chemical processing etc. (details to be submitted)

4.2. Detail Industry partner Qualification Criteria: Table 1 gives a top level description of the requirement and the Industry partner qualification criteria (more details will be discussed during pre-Eol submission meeting and shared in RFP). Relative

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weightages (as %) of each of the requirements have also been enlisted alongside. All interested partners are requested to do a thorough self assessment on each of the requirements and assign the self assessed scores against each line item, along with comprehensive justification, case studies etc. in support of the same. However, it may be noted that these scores are only to understand the partners’ internal evaluation; but the final selection process will be depending on the evaluation and scoring of the technical evaluation committee constituted by competent authority, as brought out earlier.

Table 1. Requirements, Scope of Work & Industry partner Qualification Criteria

Sl. No.	Section	Description	Weight age (%)	Self Assessment by interested Partner (%) with justification / case studies etc.
1.0	Brief Introduction	As per Section 1.0 above	N.A.	For info & compliance
2.0	Broad Scope of Work	As per Section 2.0 above	N.A.	For info & compliance
3.0	Tentative Quantity	As per Section 3.0 above	N.A.	For info & compliance
4.0	Industry partner Qualification Criteria	As per Section 4.0 above and details below	N.A.	For info & compliance
4.1	Technical Capabilities	The following major capabilities must be available with the Partner. The primary respondent will be the Tier-1 supplier to ADE and will be responsible for all engineering / manufacturing / assembly / integration activities. Tier-1 supplier must essentially demonstrate all the engineering and manufacturing capabilities listed below. However, for certain very specific limited activities not exceeding 20% of billable value as reflected in Section 4.1.1 and 4.1.2 below, Tier-1 Partner can enlist the support of Tier-2 / Tier-3 suppliers with ADE’s prior approval (any such supplier must be reflected by name in the EoI response itself). The approved Tier-2 / Tier-3 suppliers must meet the necessary aerospace standards and it will be the responsibility of the Tier-1 Partner to ensure the same. It may also be noted that in all stages of development, the items used for realization/integration must be as specified by ADE during development phase or have ADE’s prior approval. The Tier-1 Partner will be responsible for sourcing raw materials, Bols, LRUs from the sources as identified / approved by ADE.		
4.1.1	Optics	The Partner must have in-house engineering team with or optics design exposure The Partner must have existing optics design tools. The Partner must have past experience in camera based systems development.	10%	To be filled by Partner
4.1.2	Servo	The Partner must have in-house expertise to develop servo based actuator design	15%	

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		capability.		
		The partner shall have developed motor and resolver based designs.		
		The partner shall have developed IMU and Gyro based designs.		
		The partner shall have exposure to develop stabilized system for aerial platforms.		
		The partner shall have team size of 2-4 engineers.		
4.1.3	Electronics	The Partner must have PCB design tools and capabilities.	10%	
		Miniaturized PCB soldering (for repair).		
		The partner shall have PCB testing infrastructures (e.g., CRO, Logic analyzer, multimeter)		
		The partner shall have team size of 2-4 engineers and technicians.		
4.1.4	Imaging	The Partner must have executed any design based on image processing or video tracking on stand-alone hardware	10%	
		The Partner must have image processing algorithm development expertise.		
		A team size of minimum 2-4 engineers required.		
4.1.5	Functional (Mandatory requirement)	The Partner must demonstrate open loop and close loop tracking on HD resolution input video	10%	
		Glass to glass video latency (Acquisition, tracking, annotation and display) should not be more than 200 mSec under dynamic scnerios.		
4.1.6	Mechanical	The Partner must have designed 2/4 gimbal assembly and should demonstrate prototype/CAD model.	15%	
		The Partner must have in-house mechanical design tools and expertise.		
		A team size of minimum 2-4 engineers required.		
4.1.7	Fabrication	The Partner must have provision to fabricate high accuracy components.	5%	
	Infrastructures	The Partner must have three axis position simulation and Bore sighting facilities with better than 500 μ Rad accuracy.	5%	
4.1.8	Quality Inspection / Testing	The Partner organization structure must cater for separate and independent division / group for Reliability and Quality Assurance.	5%	
		Partners shall follow appropriate internationally approved quality procedures, including but not restricted to		

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		those mentioned in Section 4.0 A.		
4.1.9	Financial capabilities	Partner must have a consistent profitable financial record showing profits in at least last three years and no accumulated losses. To this effect, Partner must provide financial standing through latest A.I.C.C. Annual report (balance sheet and profit & loss account) of last 3 years.	5%	
4.1.10	Others	Past case studies to prove Partners' capabilities to maintain strict secrecy and confidentiality during design / manufacturing / assembly / testing; Partner must have past experience of executing classified projects within restricted access area.	10%	
Total			100%	To be filled by Partner
5.0	Qualification / Acceptance Criteria	<ol style="list-style-type: none"> The partner(s) must comply with all the mandatory pre-requisites listed in Section 4.1.1. Industry partner shall demonstrate tracking of low contrast (<5%) targets with dynamic zooming during TCEC. The partner(s) selection will be based upon the evaluation and scoring (as per criteria listed in Section 4.0 B and Table 1). The minimum cut-off / qualification threshold will be 80% marks which will be awarded by TEC. 		
6.0	Inputs Required from Partner by ADE	<ol style="list-style-type: none"> Comments / compliance statement from Partners in terms of the scope of work. Comments & self assessment from Partners (along with detail justification and documentary evidences) in terms of compliance with Partner Qualification Criteria. List of capabilities & infrastructure with Partners. List of Certifications available with Partners, such as AS9100D, ISO 9001:2015, CMMi etc. Details regarding past associations with the certification agencies such as CEMILAC, DGAQA, MSQA etc. Copy of the audited balance sheet of preceding three years. Details of shareholding / ownership pattern. Number of technically / professionally qualified executives / experts presently in the permanent payroll of the company. Brief description of each of the relevant aerospace / defence related projects undertaken so far, components / assemblies manufactured, and quality process followed. This should include the volume of contract, time period of completion, cost, customer feedback etc. List of proposed Tier-2/3 Industry partner with respective work shares. Any other information that the Partner may find relevant to the present Eol / subsequent RFP. 		

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7.0	Other Points	<ol style="list-style-type: none"> 1. This EOI is issued on “no cost and no commitment” basis. 2. Reputed Indian Partners who have the expertise and adequate experience in the field of engineering, manufacturing, assembly & integration of EO payloads / sensors, should only participate in this Eol. All the industries meeting this criterion and willing to respond to this EOI will be called for initial discussion / partner meet before the EOI submission, and it is mandatory for interested Partners to attend the same meeting for detail understanding of the scope of work. 3. The Partner must note that ADE will be the sole authority and owner for the entire IPR of design and development of the EO seeker. The design, document, process planning sheets, engineering documents, drawings, solid model etc. (all documents related to this project) shall be handed over to Director ADE. All the tools, drawings, jigs, fixtures, process planning sheets, assembly procedures records, inspection record, documents etc. will also be the sole property of ADE and should be returned to ADE in both the soft and hard copy. 4. Director, ADE has the right to use the information provided by the Partners for future issuance of the tender. Mere participation in EOI does not assure eligibility for participating in the tender. Based on the details provided in the proposal, Director, ADE has the right to select the Partner for participating in the tender. 5. Final RFP / contract will have defined exit options. Director ADE reserves the right to exercise the exit option at any stage / phase of the development without assigning any reason for the same. 6. A technical screening committee will be evaluating the Eol responses, and may visit prospective work centers for physical inspection of capabilities, expertise and infrastructure. 7. Though the activity is confidential; any existing tie-ups with Indian / foreign companies shall not be a hindrance for participation in this programme. Industry partners, already having foreign collaboration and interested, shall explicitly bring out the details in their response and furnish necessary NDA and detail plan to ensure that the data / information from this program will be kept isolated from any such collaborator. 8. In production phase and thereafter, the Industry partner shall be the single point of contact (SPOC) and shall be responsible for supply, maintenance and support during entire life cycle of the system. 9. ADE will have the right to visit Tier-2/3 Industry partner (as identified by Tier-1 and approved by ADE) to inspect, review the work progress, conduct sample audits etc. with or without prior notice and with and without Tier-1 representative.
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Part-II: Terms and Conditions

1. The Director, ADE reserves the right to accept/reject any or all the EOI without assigning any reason and also will not be responsible for postal delays. Final RFP / contract will also have defined exit options.
2. Industry partners are required to submit their bid along with the eligibility conditions specified. **The interested Firms have to attend the Pre-Eol submission Meeting at ADE Bangalore.**

Pre-Eol Submission Meeting Details

Pre-Eol Submission Meeting Date: **17/04/2024 @ 14:30 Hrs.**

Note: This meeting will mostly happen over video conference, all interested parties must communicate their interest to the contact persons listed by 16/04/2024 for more details about the meeting.

For participation contact following:

1. **Shri.SM Manjunath, Scientist ‘G’** (Ph: 080-2505 7401).
 2. **Dr. Md. Shahid, Sc. ‘F’** (Ph: 080-2505 7961)
3. **Last Date and Time for Depositing (submission of) the EOI:** On **07/05/2024 (dd/mm/yyyy) at 10:30Hrs.** The sealed Bid should be deposited / reach by the Due Date and Time. Responsibility to ensure this lies with the Bidders.
 4. **Location of the Tender Box: Security Office, Raman Gate, ADE, Bangalore.**
 5. **Manner of Depositing the EOI:** Sealed EOI should be either dropped in the Tender Box or sent by post at the address given, in the “ Invitation of EOI”, so as to reach by the due date and time. Late EOI will not be considered. No responsibility will be taken for postal delay or non-delivery/non-receipt of documents. EOI sent by FAX or e-mail will not be considered unless they have been specifically called for by these modes.
 6. **Time and Date for Opening of EOI: On 08/05/2024 (dd/mm/yyyy) at 10:30Hrs.**
If due to exigency, the due date for opening is declared a closed holiday, the EOI will be opened on the next working day at the same time or on any other day/time, as intimated by the Buyer.
 7. **Place of Opening: Security Office, Raman gate, ADE, Bangalore.**
The Bidders may depute their representative, duly authorized in writing, to attend the opening of EOI on the due date and time.
 8. The cover containing the proposals, duly completed in all respects must be addressed to “The Director, ADE” indicating the EOI No **.ADE/MMD/EOI-02/EOS/23-24** and Description: **Expression of Interest’** and the **Due Date and Time**. The Proposal should reach not later than the Due Date.

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9. Eligibility Conditions: Refer Section – 4 of Part – I of EOI document.

- (a) Please note that response to EOI is accepted only from the “**reputed Indian Industry partner**”.
- (b) Industry partner shall provide financial standing through latest Annual report (balance sheet and profit & loss account) of last 3 years.
- (c) Company with consistent profitable financial record showing profits in at least three years and with no accumulated losses. Submit detail Report.
- (d) It is compulsory for the firm to attend the Pre-Eol Submission Meeting in order to submit their proposal which will be further shortlisted by ADE committee.
- (e) The respective representative from the Industry partner must possess the authorization letter from the firm to sign the Non-Disclosure Agreement (NDA) as per ADE terms & conditions. The authorized person has to ink sign the NDA and put the company seal on it before entering the Pre-Eol Submission Meeting Room.
- (f) Mere participation in EOI does not assure eligibility for participating in the tender. Based on the details provided in the proposal, Director, ADE has the right to select the Industry partner for participating in the tender.
- (g) Director, ADE has the right to use the information provided by the Industry partner for future issuance of the tender.

10. Request for quotations will be issued to the short listed Industry partner and also others who are already well known in the field.

- | | | | |
|------|---|---|--|
| 10.1 | Queries & to be addressed to | : | The Director ADE. |
| 10.2 | Postal address for sending the Proposal | : | ADE, DRDO, New Thippasandra
Bangalore-560075, Karnataka , India |
| 10.3 | Fax Number | : | 080-2505 7843 |
| 10.4 | Email | : | Headmmd.ade@gov.in
mmdtec.ade@gov.in |

11. The Director, ADE reserves the right to accept/reject any or all the EOI without assigning any reason and also will not be responsible for postal delays

(.....)

For Director
For & on behalf of President of India

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Check Sheet				
Sl. No.	Technical Terms		Confirmation of Industry partner to ADE Terms	
1.	Company Profile	Details of Registration, License, etc. enclosed	Yes/No	<input type="checkbox"/>
2.	Infra-structure details	Provided the details of infrastructure	Yes/No	<input type="checkbox"/>
3.	Technical Experience details	Provided the details of Technical Experience details	Yes/No	<input type="checkbox"/>
4.	Company financial Capacity	Provided the details of Company financial Capacity	Yes/No	<input type="checkbox"/>
5.	P/O Contracts taken up/ finished details	Provided the details of P/O Contracts taken up/ finished details	Yes/No	<input type="checkbox"/>
6.	Details of ISO/AS certification & other certifications	a) ISO 9001 / 14001 b) AS 9100 c) NADCAD d) Any other	Yes/No	<input type="checkbox"/>
7.	Compliance statement on SoW	As per Section 2 of Part – I	Yes/No	<input type="checkbox"/>
8.	Compliance Statement and all additional supporting documents on Industry partner Qualification Criteria	As per Section 4 of Part – I	Yes/No	<input type="checkbox"/>
<p>Note: Industry partner are requested to submit this format duly completed with their seal and signature along with their quotation. Non submission of this format may lead to rejection of your offer.</p>				