

**INVITATION FOR EXPRESSION OF INTEREST (EOI) FOR
INDIGENOUS DEVELOPMENT OF LONG RANGE DUAL BAND INFRARED IMAGED
SEARCH AND TRACK SYSTEM (IRST) FOR SU-30 MKI AIRCRAFT
UNDER MAKE II PROCEDURE OF DPP 2016**

Reference: Defence Procurement Procedure 2016 (DPP - 2016)

Appendices:

- A** Commercial Evaluation Criteria
- B** Technical Evaluation Criteria
- C** Information Performa
- D** Confidentiality Agreement
- E** Correctness Certificate

Annexure: I to Appendix B Technical Evaluation Compliance Matrix

Introduction

1. Su-30 MKI aircraft currently relies upon old generation sensor called Optical Locator Sensor (OLS). There exists a need to replace this system with the latest generation system with better operational capability, maintainability and improved reliability. Indigenous development of such system will ensure achievement of self-reliance in the field of Electro optical (EO) and Infra-Red (IR) sensors. MoD has therefore decided to explore the capability of Indian Vendors to undertake such development under 'Make in India' initiative of Gol.

Objective

2. The objective of this EoI is to seek responses from eligible Indian vendors (criteria defined in Annexure 1 of Chapter III A of DPP 2016) for the development of prototypes of indigenous IRST for Su-30 MKI aircraft.

Layout

3. The EoI has been covered under 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

4. The nodal officer for this project for all queries/clarifications/coordination will be Secretary, Project Facilitation Team, Indigenous IRST. Address and contact details of the nodal officer are given at para 31 of the EoI.

PART I: GENERAL INFORMATION

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

- (a) **Prototype Development Phase.** 'Make-II (Industry Funded)' as per Make-II Procedure laid down in Chap III A of DPP-2016.
- (b) **Procurement Phase.** 'Buy (Indian-IDDM)' as per Chapter II of DPP 2016.

6. **Quantities.** The quantities sought for the project are:-

- (a) **Prototype Development.** The nominated Development Agency/ies (DAs) will have to develop 04 (01 lab model, and three fly worthy) units during this phase for proving the system.
- (b) **Procurement Phase.** Total 100 operational units will be procured by IAF during this phase along with associated Test Equipment and documentation.
7. **Amended MAKE-II Procedure.** Detailed guidelines on Make II Procedure (Chapter III A of DPP 2016) may be downloaded from MoD website for reference.

PART II: SCOPE OF THE PROJECT

8. **Scope.** The IRST system should be able to detect and identify the airborne and ground based targets and provide the information about detected and identified targets in data as well as video format for use by the aircraft Mission Computer (MC) for weapon aiming solutions in stand-alone or in master-slave mode. The system should be able to operate in day and night conditions and should be able to carry out the following main functions:-
- (a) Search & Track using Infrared & Optics and range finding through Laser Range Finder (LRF), which should be an integral part of the main IRST system.
- (b) EO & IR Imagery and Ranging should enable day / night passive visual recognition and identification of air and ground based targets and allow 3D localization (by using an eye-safe laser of LRF).
- (c) The equipment should interface with Su-30 MKI aircraft avionics architecture for data and video exchange. The equipment should provide the search data to Mission Computer (MC) in terms of angular coordinates and speed of the target for display on the aircraft Multi-Function Display (MFD). The track data should be transferred to the MC in terms of target coordinates and EO&IR video output for display on the MFD.
- (d) IRST should be able to function as a prime sensor and be able to slew other onboard sensors through MC and also be slewed by other onboard sensors. Other onboard sensors are Radar, Laser Designation Pod (LDP) and Helmet Mounted Display System (HMDS).
9. **Preliminary Service Qualitative Requirements (PSQR).** The PSQRs of the IRST for SU-30 MKI ac will be handed over to the interested Indian Vendor in person on signing of the Non-Disclosure Agreement with the IAF. Developed products are required to meet the specified technical characteristics for operational utilization.

Timelines & Milestones

10. **Timelines.** Stages of the development and procurement process are as given at para 9 of the Make-II Procedure of Chapter III A of DPP 2016.

11. **Milestones.** Major activities in the procurement process are as given below:-

SI No	Activity	Remarks	Timelines
a	Issue of Eol	By PFT	T_0
b	Pre Eol Response meeting	By PFT with Eol respondents	$T_0 + 3$ weeks
c	Eol Response Submission	By Eol Respondents (Indian Vendors)	$T_0 + 6$ weeks
d	Eol Response evaluation	By PFT	$T_0 + 11$ weeks
e	Issue of Project Sanction Order for Development of Prototype	To selected DAs those meeting evaluation criteria	$T_0 + 13$ weeks
f	Kick-off Meeting with ASTE, SDI, HAL, 11 BRD, CEMILAC, DGAQA reps	To discuss flight testing philosophy, discuss software integration, mechanical and electrical integration and route to certification and production	$T_0 + 15 - T_0 + 17$ weeks
g	Design & Development of prototype. (activities mentioned at para 28 (i) – (iv) of Chapter III A of DPP-2016 will be carried out by PFT along with each DA during this phase)	Selected DAs will develop the prototype	$T_0 + 182$ weeks
h	Conversion of PSQRs to SQRs/Solicitation of Commercial Offer (Refers to Para 28 (v)& (vi) of Chapter III A of DPP-2016)	A commercial Request for Proposal for 'Buy (Indian - IDDM)' phase will be issued to all DAs for submission of commercial offer prior to commencement of User Trials.	$T_0 + 186$ weeks
j	Conduct of User Trials and Staff Evaluation	User trials would be carried out to validate the performance of the system	$T_0 + 186$ weeks - $T_0 + 212$ weeks

	(Refers to Para 28 (vii) of Chapter III A of DPP-2016)	against the parameters and specifications as approved after the development of prototype	
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Development of Prototype and Trials

12. The design of IRST to meet the PSQRs will be decided by respective DAs. However, the mechanical, electrical and software interface of the unit with the aircraft will be the same as that of the existing OLS unit in the aircraft. DAs will have to ensure this aspect by studying the existing system. Any clarification related to functional or operational aspects of development as sought by the DAs will be provided by the Project Facilitation Team (PFT).

13. **Route to Certification.** Development and testing of the prototypes will be carried out as per the 'Route to Certification' including methodology of ground and flight evaluation. DDPMAS-2002 will be followed for certification. The same will be finalized between DAs, IAF, CEMILAC and DGAQA.

14. System integration with the aircraft will be carried out by HAL and IAF. Mechanical and electrical integration will be the responsibility of HAL /11 BRD and software integration will be carried out by IAF. Contracting HAL /11 BRD for the integration and flight testing will be the responsibility of IAF. Vendor can otherwise propose any other alternate approach for mechanical and electrical integration activities on aircraft. In such a case, the responsibility of integration will be with the vendor.

15. After the prototype has been developed as per PSQRs, the PFT would carry out User Trial Readiness Review of the prototype(s) and freeze the Technical Specifications before conduct of User Trials. Evaluation will be carried out as per para 32 and 33 of Chapter III A of DPP-2016. The User Trials would validate performance against the Final Technical Specifications. Necessary technical literature pertaining to the design & material will be provided by the DAs for the User Trial Readiness Review and conduct of User Trials.

16. DAs shall prepare the following documents for vetting and approval by IAF, QA agencies and Design Certification Agency.

- (a) Environmental Qualification Test Procedure (EQTP) with respect to PSQR.
- (b) SOP document containing Master Drawing Index (MDI), Bill of Material (BOM) and Part List (PL).
- (c) Manufacturing Process Document.
- (d) Quality Assurance Plans (QAP) and Acceptance Test Procedure (ATP) Documents.

17. Trials after successful development of prototype will comprise of Ground Acceptance Test (GAT) and Flight Trials. GAT is to be held at DAs premises in consultation with CEMILAC and DGAQA. After successful completion of GAT, necessary Task Directive will be issued by SHQ for conduct of Flight trials on Su-30 MKI aircraft. There would be a requirement of three IRST units at the trial venue (02 for fitment on aircraft and 01 as spare). In case of non-performance of IRST, additional 06 weeks would be provided for rectification and not more than three repeat trials would be carried out in addition to initial trials. The respective DA will provide necessary technical support to the trial team during flight trials.

18. It is necessary to obtain type certification for the product from CEMILAC after completion of successful trials. The quality control approach during production will be monitored by DGAQA.

Solicitation of Commercial Offers

19. A commercial Request for Proposal (RFP) for 'Buy (Indian-IDDM)' phase would be issued to DA(s) prior to commencement of User Trials to solicit their commercial offers and additional technical information/ documentation, as may be necessary.

Deliverables

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

- (a) 100 IRST Units.
- (b) At least eight sets of 'O' level and four sets of 'I' level test equipment.
- (c) Tools, Testers and Ground Equipment (TTGE), requisite training, Technical literature including user handbook, operations & technical documents and manuals.

Intellectual Property Rights (IPRs)

21. Policy on IPRs is mentioned at para 42 of the Chapter III A of DPP-2016 for Make-II Procedure.

PART III: EVALUATION CRITERIA

Commercial Evaluation Criteria

22. Indian entity satisfying criteria given at Annexure I of the Make-II Procedure will be considered as an eligible "Indian vendor" for the project. EoI respondents will furnish their response to the Commercial Evaluation Criteria as per **Appendix A**.

Technical Evaluation Criteria

23. The respondents to this EoI are required to furnish information about their technical capability as per **Appendix B**. Compliance/information as per **Annexure I to Appendix B** is also required to be submitted as per the proposed solution offered by the DA against the PSQRs of IRST.

24. **Indigenous Content.** Post successful development of prototype(s), further procurement will be as per the 'Buy (Indian-IDDMM)' procedure with a minimum of 40% IC as per DPP-2016.

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

26. **Foreign Collaboration.** If the DA is collaborating/plans to collaborate with a foreign technology provider, the nature of such collaboration and the technology areas being transferred must be stated in the response (please refer paras 12 & 13 of **Appendix C**). It is essential to have minimum 40% Indigenous Content on cost basis of the total contract value. 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.

PART IV: PROCEDURE FOR SUBMISSION OF RESPONSE TO THE EoI

27. The response to the EoI shall be submitted as per formats given at **Appendices A, B & C**.

28. **Guidelines for Submitting EoI Responses.**

(a) The responses should be submitted strictly as per the formats given in respective Appendices. Should a vendor need to mention any other information, a separate column/row may be added.

(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.

29. **Pass/Fail Criteria for Selection as DAs.** The response must be compliant to Tech Specs. Common inadequacies that may lead to rejection of EoI response are as listed:-

- (a) Failure to meet Commercial Evaluation Criteria given at **Appendix A**.
- (b) Failure to meet/comply with the Technical Evaluation Criteria specifications given at **Appendix B**.
- (c) Failure to offer compliance to any of the terms and conditions given in the Eol.
- (d) Failure to agree with the project timelines.
- (e) Failure to offer desired indigenous content.
- (f) Any other parameter of the response considered inadequate by the Project Facilitation Team (PFT) for the project.

30. The Eol respondent shall submit three (3) copies of response to the Eol, clearly marking one copy as '**Original Copy**' and second & third as '**Duplicate Copy**' and '**Triplicate Copy**'. In the event of any discrepancy between them, the original copy shall govern/ prevail. Each page of the response will bear the signatures of the authorized signatory of the company. The Eol respondent shall also submit a soft copy of the response to this Eol in a CD/DVD.

31. The envelopes shall be addressed as under:-

Secretary, Project Facilitation Team
 Indigenous IRST
 Dte of Projects (Room No. 405)
 Air HQ (Vayu Bhawan)
 Rafi Marg, New Delhi-110001
 Telephone/ Fax: 011-23010231/ 23014170

32. The response to this Eol must be submitted by **1500 hours on 09 October 2018** at the address mentioned above.

33. The Company will be required to sign and honor the 'Confidentiality Agreement' with MoD, Govt of India. The 'Confidentiality Agreement' will be furnished by each Eol respondent at the time of submission of Eol responses as per format given at **Appendix D**.

PART V: MISCELLANEOUS

34. **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.

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

36. The Pre-Contract Integrity Pact (PCIP), listed as detailed in para 92 of Chapter II of DPP 2016, shall apply mutatis mutandis, to 'Buy (Indian-IDD)' phase of 'Make' project.

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

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

File No: **Air HQ/S96253/1/Proj(SU-30)**

Date: **29 August 2018**

Appendix: As stated

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(R Muraleeswaran)
Wg Cdr
Secretary
Project Facilitation Team
Project IRST

Appendix A
(Refers to para 22 of EoI)

COMMERCIAL EVALUATION CRITERIA

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

S No	Criteria	Pass Criteria	Vendor Submission and Reference (Reference against vendor claim/ response must be flagged and mentioned in this column)	Remarks (if Any)
a	Nature of the Company	As mandated in Annexure 1 of Chapter III A of DPP-2016		
b	Ownership Status			
c	Category of Industry.		Large/Medium/ Small/ Micro	
d	(i) Average Annual Turnover of the applicant company for the last three financial years. (ii) Net worth of the Company.	<p><u>For cases where estimated cost of the prototype development does not exceed Rs 3 crores:</u> “For projects with estimated cost of prototype development not exceeding Rs 3 crores, no financial criteria will be applicable. This is to encourage participation of MSMEs & Startups.”</p> <p><u>For cases where estimated cost of the prototype development exceed Rs 3 crores:</u> “For projects with estimated cost of the prototype development exceeding Rs 3 crores, the average annual turnover of the applicant company for the last three financial years ending 31st March of the previous financial year should not be less than 10% of the estimated cost of the project and the Net worth of the entities ending 31st March of the previous financial year should not be less than 5% of the estimated cost of the project. The estimated cost of the project would include the combined estimated cost of prototype development and the value of subsequent procurement.”</p>		

Date:

Place:

Signature

Company Seal

Note:-

- All submissions must be supported by referenced documents duly authenticated.
- Any input with incorrect or missing reference will not be assessed.
- No separate financial, commercial criteria will be applied for start-ups.

Appendix B
(Refers to para 23 of EoI)

TECHNICAL EVALUATION CRITERIA

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

SL No	Criteria and Sub Criteria	Pass Criteria	Vendor Submission and Reference (Reference against vendor claim/ response must be flagged and mentioned in this column)	Remarks (if Any)
a	Engineering and technical ability to undertake similar/other projects for military or civil users in India or abroad.	At least one commercial product in electronics and software field		
b	Details regarding successful projects/ products/ technologies developed/ under development involving research & development in the field of electronics and software.	At least one commercial product in electronics and software field where R&D was in-house		
c	Proposed indigenous content in percentage of total cost.	Should be in line with guidelines of Chapter III A of DPP-2016		
d	Confirmation of capability to develop and provide equipment to meet user requirements specified in PSQRs	Should comply with the requirements in the format mentioned at Annexure I		
e	Timelines for development of prototype after issue of Project Sanction Order.	Timelines mentioned at para 11 of the EoI should be met		

Station:

Signature

Company Seal

Date:

Annexure I to Appendix B
(Refers to para 23 of EoI)

TECHNICAL EVALUATION COMPLIANCE MATRIX FOR INDIGENOUS IRST

SI No.	Specification	Requirement as per PSQR	Compliance/Partial Compliance/Non-compliance	Justifications ,if any

Appendix C
(Refers to para 25 of EoI)

INFORMATION PROFORMA

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

(c) To DRDO and its Laboratories.

(d) To any other Customers.

15. Details of developmental facilities:-

(a) R&D facilities available.

(b) Details of R&D activities of the company in their existing products.

(c) Number of Technical Manpower.

16. Any other relevant information.

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

Appendix D
(Refers to para 33 of Eol)

CONFIDENTIALITY AGREEMENT

1. It is certified that Expression of Interest document for the project of Indigenous IRST 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 Eol 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

Appendix E
(Refers to para 37 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 Indigenous IRST 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