



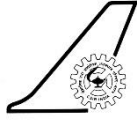
**EXPRESSION OF INTEREST**

**FOR**

**PROCUREMENT OF AVIONICS SYSTEM OF THE AIRCRAFT**



**COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH  
NATIONAL AEROSPACE LABORATORIES  
P.B. NO.1779, HAL AIRPORT ROAD, KODIHALLI,  
BENGALURU-560017**



**Council of Scientific and Industrial Research  
NATIONAL AEROSPACE LABORATORIES**

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**ISO:9001:2008**  
Certified

**EXPRESSION OF INTEREST**

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research, an autonomous body under Department of Scientific and Industrial Research (Government of India), New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

An Expression of Interest (EoI) is initiated at CSIR-National Aerospace Laboratories (CSIR-NAL) with the prospective manufacturers, their authorized channel partners or agents/suppliers and system integrators to discuss with the Technical Committees on the aspects of utility, technology, feature, literature, design, technical parameters, clientele and other related issues of the equipment and material for the following items to be procured for CSIR-NAL.

Sl. No.	File No.	Item Description
01.	NAL/PUR/ALD/092/18-Z	Procurement of Avionics Systems of the Aircraft

1. The address for submission of document and for obtaining further information:  
Stores & Purchase Officer  
Purchase Section  
CSIR- National Aerospace Laboratories  
PB No.1779, HAL Airport Road, Kodihalli, Bengaluru – 560017  
Karnataka-India  
Tel # : 080 25086040/6041/6044  
Fax # : 080 25269611  
Email : [purchasek@nal.res.in](mailto:purchasek@nal.res.in), [mkala@nal.res.in](mailto:mkala@nal.res.in), [spo@nal.res.in](mailto:spo@nal.res.in)
2. The Bidding document can be downloaded free of cost directly from Central Public Procurement Portal (CPPP) of Government of India website <http://eprocure.gov.in/epublish/app> and CSIR-NAL website [www.nal.res.in](http://www.nal.res.in).
3. The prospective bidders should adhere to due dates specified in Tender Details corresponding to this Tender.

4. The Schedule for Submission of Bids and Opening of Bids is as follows: -

Date & Time of Submission of Bid		Date and Time of Opening of Bid	
Date	Time (IST)	Date	Time (IST)
24-May-2019	10:00 Hrs	24-May-2019	11:00 Hrs

5. A brief description of the procurement is appended herewith. The Participants are requested to submit documentary evidence to prove technical capabilities, client list, experience and credentials as per Annexure enclosed.
6. The Technical Committee shall finalize specifications after knowing/obtaining details about relevant/available technology in the market suiting to the requirement and R&D needs of our Laboratory.
7. For evaluating the responses, CSIR-NAL may call the bidders for presentation of their case. Presentation can be considered via Skype/Video Conferencing also.
8. The Director, CSIR-National Aerospace Laboratories (NAL), Bengaluru, India reserves the right to accept or reject any or all EOI Notification/tenders/offers or withdraw the Notice at any stage of processing without assigning any reason whatsoever, such an event would not cause obligation of any kind to CSIR-NAL.

Sd/-  
Stores & Purchase Officer



1. **INTRODUCTION**

CSIR NAL is developing a Commuter Category Airplane with 19 passengers under FAR 23 category.

2. **OBJECTIVE**

The objective of this EOI is to select suitable Bidders for providing the complete avionics suite already installed and civil certified on any FAR 23 certified Aircraft. The Bidder shall also provide required support during initial integration, ground and flight testing and certification from DGCA on the offered avionics suite for CSIR-NAL Civil 19 seater Commuter Category Aircraft.

3. **SCOPE OF WORK**

Bidder is requested to submit technical proposal for the Scope of work which includes the following:

Sl.No	Item
3.1	Supply of 1 set of complete avionics suites as per systems mentioned
3.2	Customisation and design support
3.3	Training
3.4	Documentation
3.5	Site Support

3.1 **Specification of Avionics Suite**

The Table comprises the List of Deliverables for the set of complete avionics suite

REF. NO.	SYSTEM DESCRIPTION
<b>Communication Systems</b>	
1.1	VHF COMMUNICATION SYSTEM
1.2	HF COMMUNICATION SYSTEM
1.3	DIGITAL INTERPHONE SYSTEM
1.4	EMERGENCY LOCATOR TRANSMITTER (ELT) SYSTEM
1.5	SELCAL
1.6	RADIO TUNING UNIT
1.7	AUDIO MANAGEMENT SYSTEM
1.8	AURAL WARNING GENERATOR
1.9	CONTROLLER PILOT DATA LINK COMMUNICATION (CPDLC)
1.10	AIRCRAFT COMMUNICATIONS ADDRESSING AND REPORTING SYSTEM (ACARS)
<b>NAVIGATION, SURVEILLANCE SYSTEMS AND OTHERS</b>	
2.1	VHF NAVIGATION SYSTEM
2.1.1	VHF Omni range (VOR) system
2.1.2	LOCALIZER RECEIVER
2.1.3	GLIDESLOPE RECEIVER
2.1.4	MARKER RECEIVER
2.2	AUTOMATIC DIRECTION FINDER (ADF) SYSTEM
2.3	DISTANCE MEASURING EQUIPMENT (DME) SYSTEM
2.4	WEATHER RADAR

REF. NO.	SYSTEM DESCRIPTION
2.5	ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS) / TERRAIN AWARENESS AND WARNING SYSTEM (CLASS-A)
2.6	RADIO ALTIMETER SYSTEM
2.7	ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS)
2.8	AIR DATA COMPUTER (ADC)
2.9	AIRBORNE COLLISION AVOIDANCE SYSTEM (ACAS)-II
2.10	MODE S TRANSPONDER WITH 1090 ADS-B OUT
2.11	FLIGHT MANAGEMENT SYSTEM
2.12	ELECTRONIC FLIGHT BAG
2.13	ENHANCED /SYNTHETIC VISION SYSTEM
2.14	IN FLIGHT ENTERTAINMENT
2.15	GLOBAL POSITIONING SYSTEM
2.16	STALL WARNING SYSTEM
3	GLASS COCKPIT (FLIGHT DECK) COMPRISES CREW DISPLAYS, ISIS, CLOCK AND OTHERS
4	SOLID STATE FLIGHT DATA RECORDER (SSFDR)
5	SOLID STATE COCKPIT VOICE RECORDER (SSCVR)
6	COMPATIBLE AUTOMATIC FLIGHT CONTROL SYSTEM WITH THE
7	ANY OTHER SYSTEMS NECESSARY FOR FAR 23CERTIFICATION
8	ANY OTHER ADDITIONAL SYSTEMS AS REQUIRED FOR TODAY'S COMMERCIAL AIRCRAFT OPERATIONS.

The OEM/Bidders shall provide the technical proposal with all the systems they deem fit for certification of FAR 23 aircraft along with the system architecture. The proposal to contain details of datasheets and system architecture.

The OEM/Bidders shall provide the

- Technical proposal with all the systems they deem fit for certification of FAR 23/25 aircraft
- Detailed System integration & its architecture.
- Individual parts/model/make Data sheet of chosen LRUs

### 3.2 **Customization and Design support**

Bidder shall participate in Preliminary Design Review, Critical Design Review and all other stages of review from time to time. They shall carry out customization as per requirements of NAL Civil 19 seater Commuter Category Aircraft.

### 3.3 **Training**

Bidder shall provide training to NAL ground crew and flight test crew on the maintenance and operating procedures of the avionics suite.

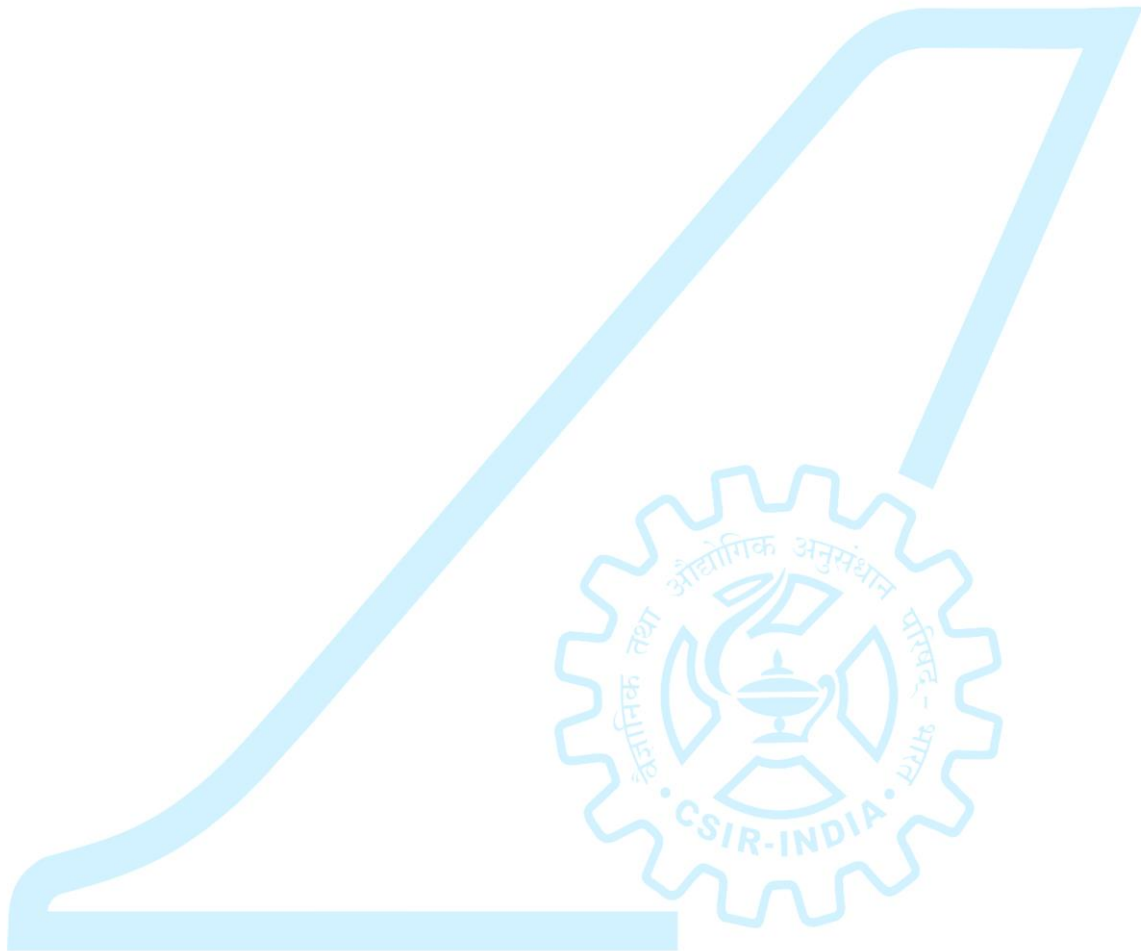
### 3.4 Documentation

Bidder shall provide documentation related to Avionics suite being supplied. The broad categories of documents are:

- a) Installation Manuals
- b) Electrical Wiring Diagrams with installation details
- c) Copy of FAA/EASA/DGCA approvals for systems installed on another aircraft
- d) Any other as deemed necessary

### 3.5 Site Support

Bidder shall provide on-site and off-site support for technical inputs to certification and ground test, flight test activities.



#### 4. Eligibility Criteria

##### 4.1 Technical

- 4.1.1 Original Equipment Manufacturers (OEMs) / Avionic System Integrators who have proven expertise in successful integration of the complete avionics suite on any FAR 23 certified aircraft followed by certification of the systems of the avionics suite from FAA/EASA/DGCA for such aircraft.
- 4.1.2 Bidder should ensure all quoted avionics suite parts should be available for more than 20 years.
- 4.1.3 The Bidder shall provide required support during initial integration, ground and flight testing and certification from DGCA on the offered avionics suite for NAL Civil Commuter Category 19 Passenger Capacity Aircraft.
- 4.1.4 Technical Capability Bidder should have successfully completed/executing a similar scope of work of supply and installation in Government organizations in India.
- (a) Relevant support certificates to be submitted.
  - (b) Copies of supply order & Project completion / Phase completion report.
  - (c) The bidder should have direct authorization from the Original Equipment
  - (d) Manufacturer (OEM) for supply, installation and maintenance of similar system.
  - (e) Valid MAF issued by OEM's for all components quoted by the Bidder to be submitted.
- 4.1.5 The Bidder shall indicate the timelines necessary for providing the items under Scope of Work.
- 4.1.6 The Bidder shall provide the complete technical information (without any IP related material) with specific OEM name, Model Number and ROM
- 4.1.7 The Bidder shall provide the complete LRUs/Systems for FAR23/25 compliant avionics architecture as required for International Certification.

##### 4.1.8 Similar Work Experience Details:

Sl. No.	Name of the work with location	Date & Ref. no of completion certificate (If available)	Date of start Cost of work	Reference document (Work Order/ Work Completion Certificate) to be attached, mention page no

## 4.2 Commercial

- 4.2.1 The Bidder should be a company having an average turnover of Rs.5 Crore for each of the last Three financial year ending on 31st March 2018.
- (a) Audited Balance sheets.
  - (b) CA Certificate with CA's Registration number/Seal. Indicating required turnover
- 4.2.2 Average Net Worth The Tangible Net Worth of the bidder should be positive CA Certificate with CA's Registration number/Seal.
- 4.2.3 The Bidder shall enclose the following documents:
- (a) Copy of Company registration certificate issued by statutory authority (duly attested by Notary Public).
  - (b) Copy of Memorandum and Article of Association (duly attested by Notary Public).
- 4.2.4 Legal Entity: The bidder must be a registered company in India, registered under the Companies Act 1956/2013.
- (a) Company Profile
  - (b) Memorandum & Articles of Association
  - (c) Copy of Certificate of Incorporation
- 4.2.5 Tax Registration & clearance The Bidder should have valid PAN and GSTIN. Copy of GSTIN & of PAN to enclosed
- 4.2.5 Blacklisting Declaration that the bidder has not been banned or delisted by any Govt. of India or Quasi Govt. Agencies or PSUs. If banned / delisted, the fact must be clearly stated. Self-Declaration on company letter head.
- 4.2.6 The Bidder may submit a Budgetary Estimate for all the items under the Scope of Work. The Budgetary Estimates shall be held confidential and will not be disclosed to other Bidders after the EOI responses are opened.
- 4.2.8 Bid Validity Period: The offered bid shall be valid for a period of 90 days from the date of submission of Bids as per Tender Document.



## 5. Other Terms

### 5.1 Expression of Interest

In order to fine-tune the technical specifications for carrying out Supply, Integration and Certification of Avionics Systems for Aircraft. Expression of Interest is being sought from internationally reputed and competent Bidders/consulting firms. Bidders are requested to submit all the required documents for Bidder evaluation as per Pre-qualification criteria.

### 5.2 Purchase of EOI Document

The Expression of Interest document shall be downloaded from Central Public Procurement Portal (CPPP) of Government of India website <http://eprocure.gov.in/epublish/app> and CSIR-NAL Website [www.nal.res.in](http://www.nal.res.in) at free of cost.

### 5.3 Clarifications on the EOI Document

Any clarification in the EOI document may be sent in writing to the following address or through email:

Stores & Purchase Officer  
Purchase Section  
CSIR- National Aerospace Laboratories  
PB No.1779, HAL Airport Road, Kodihalli,  
Bengaluru – 560017, Karnataka-India  
Tel # : 080 25086040/6041/6044  
Fax #: 080 25269611  
Email [purchasek@nal.res.in](mailto:purchasek@nal.res.in), [mkala@nal.res.in](mailto:mkala@nal.res.in), [spo@nal.res.in](mailto:spo@nal.res.in)

However, no extension of the time or date of EOI submitted will be provided on the ground that CSIR-NAL has not responded to any query/clarification raised by any Bidder.

### 5.4 Amendment of Terms and Conditions of EOI

5.4.1 CSIR-NAL may at its discretion or as a result of a query, suggestion or comment of an Bidder, may modify the EOI document by issuing an amendment or a corrigendum at any time before opening the EOI. Any such Addendum or Corrigendum will be uploaded on CPPP Portal <http://eprocure.gov.in/epublish/app> and CSIR-NAL's website [www.nal.res.in](http://www.nal.res.in) and the same will be binding on all the Bidders, as the case may be.

5.4.2 CSIR-NAL at its discretion may extend the due date of submission of EOI and the decision of CSIR-NAL in this respect would be final and binding on the respondents. In the event of changes in the time schedule, CSIR-NAL shall notify the same only through its CSIR-NAL website [www.nal.res.in](http://www.nal.res.in). Interested Bidders are advised to check the above website regularly for corrigendum / addendum, if any, which will be published only in the web site.

5.4.3 No oral modification or interpretation of any provisions of this EOI shall be valid. Written communication shall be issued by CSIR-NAL when changes, clarifications or amendments to the EOI document are deemed necessary by CSIR-NAL at its sole discretion.

- 5.5 EOI submission should be in English language. EOI response should be free from correction, over writing, erasures etc. Duly authorized representative of the Applicant shall sign on each page of the EOI documents. EOI documents should be prepared in such a way so as to provide a straight forward, concise description of Applicant and capabilities to satisfy the requirements of this EOI.
- 5.6 If at any time during the examination, evaluation and comparison of EOI, CSIR-NAL at its discretion can ask the Bidder for the clarification of its EOI. The request for clarification and the response shall be in writing. However, no post submission of EOI, clarification at the initiative of the Bidder shall be entertained.
- 5.7 Canvassing by respondents in any form, including unsolicited letters on EOI submitted or post corrections shall render their EOI response liable for summarily rejection.
- 5.8 The cost or charges incurred in preparation and submission of EOI response shall not be entitled by any respondent.
- 5.9 Conditional offers will be summarily rejected. EOI which is found to be incomplete in content and / or attachments and / or authentication etc. is liable to be rejected.
- 5.10 No Agent/Agents or third party/parties are engaged by CSIR-NAL in this process.
- 5.11 CSIR-NAL is not responsible for any firm/agency expression or representing to express himself/herself/themselves to be the agent or third party representing CSIR-NAL in this process.
- 5.12 It is advised to deal directly with CSIR-NAL representative who is the signatory to this document.
- 5.13 Disregard of any instruction may result in offer being ignored.
- 5.14 EOI that are incomplete in any respect or those that nor consistent with the requirements as specified in this document may be considered non-responsive and may be liable for rejection and no further correspondence will be entertained with such Bidders.
- 5.15 All cost and expenses associated with submission of EOI shall be borne by the Bidder while submitting the EOI. CSIR-NAL shall have no liability, in any manner in this regard, or if it decides to terminate the process of short listing for any reason whatsoever.
- 5.16 All the responses received on our subsequent CPPP enquires will be considered and not restricted to firms submitted EOI.

The following details should be submitted along with EOI.

Sr. No.	Documents	Compliance [Yes / No]
A	<b>Company Profile</b>	
1	Name of the Organization: Website	
2	Name of the Contact Person: a) Name: b) Address c) Telephone: d) Fax: e) E-Mail:	
3	Year of Incorporation	
4	Type of Organization  a) Public Sector/ Limited/Private Limited/ Partnership/ Proprietary/ Society/ Any other b) Whether 'Foreign Equity Participation (Please give name of foreign equity participant and percentage thereof) c) Names of Directors of the Board/ Proprietors d) Name and address of NRI(s), if any	
5	Category of the firm: Large/Medium/Small scale unit	
6	Address of the Registered Office:	
7	Number of Offices with addresses (Excluding Registered Office): a) India  b) Abroad	
8	Certificate of registration as a manufacturing unit	
9	Permanent Account Number	
10	GST Number	
11	Status of ISO Certification	

B.	ESSENTIAL REQUIREMENTS	
12	The turnover is to be supported by financial statement of accounts/ Annual reports duly certified by a Chartered accountant/ Balance sheets of last 3 years/ Income tax returns for the last 3 years period.	
13	Details of absorption of technology for a product/ knowhow that has been taken up on production scale in the past may also be given	
14	List of products/technologies worked with as regular activity in last three years. Give the list of products/technologies with general specifications and the customers.	

Place:  
Date:

Signature with Name & Seal:

