



### INVITATION FOR BIDS/NIT

**Tender No: CAD/PUR/2K20/129**

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research (CSIR), 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.

The Director, CSIR-NAL invites online quotation for procurement of the following item(s) for day to day research work.

Sl.No.	Description of Items	Unit	Qty
1	Supply of Smoke Detector for SARAS MK II Aircraft (Details as per Annexure)	Nos	04

Tender Type	Global Tender
Single / Double Bid	Single
Bid Security (EMD) (in INR)	Bid Securing Declaration Form to be submitted.
Performance Security	3% of the Purchase Order Value

01.Tender Documents May be downloaded from Central Public Procurement Portal <https://www.etenders.gov.in>. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website <https://www.etenders.gov.in>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.

02.Tenderers can access tender documents on the website (For searching in the NIC site <https://www.etenders.gov.in>, kindly go to Tender Search option, select tender type and select ' Council of Scientific and Industrial Research' in organization tab and select NAL-Bengaluru-CSIR' in department type Thereafter, Click on "Search" button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://www/etenders.gov.in> as per the schedule given in the next page.

03.Either the Indian Agent on behalf of the Foreign principal or the Foreign principal can bid directly in a tender but not both. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent cannot represent two different foreign principals in one tender.

04.Unsolicited / conditional / unsigned tenders (Quotations) **shall not** be considered. Quotations received after the due date and time **shall be summarily rejected**.

05.The Bidder shall comply the terms and conditions of the tender, failing which; the offer shall be liable for rejection.

06. Bidders are requested to refer to the instruction regarding Procurement Policies for Make in India issued by Ministry of Commerce and Industry, Department of Industrial Policy and Promotion dated.28-May-2018 and 4-Jun-2020 and guidelines as and when issued.

पी बी सं. 1779, एचएएल एयरपोर्ट रोड , बेंगलूर- 560 017, भारत,

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07. The prospective bidders are requested to refer to the Standard Terms and Conditions available on NAL Website ([www.nal.res.in](http://www.nal.res.in)) under the icon Tender- Purchase before formulating and submitting their bids.

08.The Bidders proposing to supply finished products directly/indirectly from vendors of countries sharing the land border with India should submit copy of registration done with the Ministry of Home Affairs and Ministry of External Affairs.

09.If the products supplied are not from vendors of countries sharing land border with India, the Bidders have to enclose a declaration to that effect.

The bids of those Bidders failing to comply with the clauses under para 8 & 9 will be summarily rejected.

10.The Director, CSIR- National Aerospace Laboratories, Bengaluru reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reasons there for.



**Raman Kumar**  
**Stores & Purchase Officer**  
**For & Behalf of CSIR-NAL**

**ANNEXURE**

**Specifications of Smoke Detector for SARAS MK II Aircraft**

**1. Detailed Specifications**

**1.1 Specification of Smoke Detector:**

1.	Smoke Detector is part of Cabin Fire Protection System (CFPS) of Saras Mk II	
2.	Smoke Detector should meet FAR-23 amendment 23-64 performance-based regulations amendments Operation Based Regulations. The prescriptive provisions within previous latest amendments of FAR-23, where applicable, may be used at aircraft ambient air temperatures from -55°C to +70°C. Qualification tests of the system components/LRUs to conform to RTCA/DO-160G or higher	
3.	Brand new/Factory new off-the -shelf item shall be supplied with proper FAA-TSO'd Certificates with Valid Certificate of Origin and Certificated of Conformance and Compliance obtained from Civil Airworthiness authorities of the Country.	
4.	Number of passenger & crew	19 + 2
5.	Aircraft maximum altitude	9.1 km (29848 feet)
6.	Cabin maximum altitude	2.4 km (8000 feet)
7.	Aircraft normal operating altitude range	7.62 km (25000 ft) to 9.1 km (29848 feet)
8.	Max. speed at 7.62 km (25000 ft) altitude	500 kmph (TAS)
9.	Cruise speed at 7.62 km (25000 ft) altitude	400 to 500 kmph (TAS)
10.	All signal outputs from Smoke Detector (its components and sensors) should be compatible to ARINC 429 communication protocol.	
11.	At least Dual output of signals (one meant for FDR, second meant for communication to aircraft systems) should be provided.	
12.	<p><b>Smoke Detector</b>  <b>Characteristics:</b>                      Type: Ambient Air                      Protection/Finishing: Black Anodized                      Electrical Power Supply: 28 Vdc                      Consumption: 75 mA max.                      Smoke Threshold Operation: From 89 up to 93 % of Light Transmission (Factory Setting)                      Weight: 250g ± 3%</p> <p><b>Environmental Conditions:</b>                      Shall meet requirements of the norm: RTCA DO 160G TSOC1c or Equivalent                      Operating Temperature: -55 °C to +70 °C</p>	
13.	Mechanical interfaces/connections details of all component should be provided. Electrical receptacle of component details should be supplied. Electrical details like voltage and power consumption along with electrical wiring diagram should be provided.	

**1.2 Certification Requirements**

**ANNEXURE**

The component/LRU shall be supplied with proper TSO'd Certificates with Valid Certificate of Origin and Certificate of Conformance and Compliance obtained from Civil Airworthiness Authorities of the Country.

**1.3 Maintainability, Reliability and Product Support**

- a) LRU 'TBO' shall be 'On Condition'.
- b) LRU Total Calendar/Useful Life shall be 30 Years or 75,000 Flying Hours.
- c) LRU shall have high reliability not less than equivalent to LRU of other contemporary aircrafts.
- d) Bidder should ensure quoted component/LRU should be available for more than 30 years.

**1.4 List of Deliverables:**

Sl. No.	Item Description	Unit	Quantity
1	Supply of Smoke Detector for Saras Mk II Aircraft	nos	4
2	Documents mentioned in para 1.5	Set	1

**1.5 List of Documentation:**

Sl. No.	Item Description
1.	Supply of manuals Component/LRU level, Mechanical and Electrical interfaces/connections details of all components
2.	LRU level test schedules to carry out pre-installation checks of all mechanical, electrical and electronic components.
3.	Components/LRUs Life document: Shelf life, TBO, Service Life and Storage Condition etc.
4.	Component Reliability Analysis (RBA)
5.	Failure Mode Effects and Criticality Analysis (FMECA)
6.	Installation and interface drawings (Mechanical and Electrical)
7.	Component/LRU design specification
8.	Qualification test procedures (QTP)
9.	Qualification test report (QTR)
10.	Acceptance test procedure (ATP)
11.	Acceptance test reports (ATR)
12.	COC/ FAA Form /EASA Form One or Equivalent
13.	Declaration of Design and Performance (DDP)
14.	Operating instructions and first line maintenance instructions/ Component Maintenance Manual/Overhaul Manual
15.	Wiring diagrams
16.	Recommendations for ground support equipment
17.	Spares recommendation list
18.	Installation, Operation and Servicing Manual
19.	Test and Calibration Report

**1.6 Responsibilities:****CSIR-NAL Responsibilities:**

1. Component Level Specifications and Requirements.

**ANNEXURE**

2. Aircraft System level performance tests on ground and in flight.

**Bidders Responsibilities:**

1. Supply of 4 Nos shipment of Smoke Detector for Saras Mk II.
2. Provide list of documents mentioned in para 1.5

**1.7 Installation, Commissioning and Acceptance Test**

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. **There shall not be any additional charges for carrying out acceptance test.** No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

On the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

**The acceptance tests at the final destination include the following:**

a)	Visual Inspection
c)	Room Temperature Functional/Performance Tests
d)	Bonding & Insulation Tests

**1.8 Incidental Services**

- (i) **On site Comprehensive Warranty:**
- 1 Year from Installation & Commissioning and date of acceptance
  - In case the Equipment / System remains non-operational for more than **30 days** then warranty period will be extended for the equivalent period for which Equipment / System remained non-operational. Warranty extension in such case shall be done without prejudice to any other Term & condition of the contract

**1.9 Delivery Schedule**

- Delivery Schedule-6 months from date of Purchase Order



**Bid-Securing Declaration Form**

Date: \_\_\_\_\_

Bid No. \_\_\_\_\_

**To (insert complete name and address of the purchaser)**

I/We, The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

a)	have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
	Having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
b)	I. fail or reuse to execute the contract, if required, or II. fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of: (insert complete name of Bidder) Dated

on \_\_\_\_\_ day of \_\_\_\_\_ (insert date of signing)

Corporate Seal (where appropriate)

**Note:**

1. In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)
2. Bid Security declaration must be signed in by the Proprietor/CEO/MD or equivalent level of Officer of the company.

CAD/PUR/2K20/129

**SCHEDULE CUM CRITICAL DATE SHEET**

1	Name of Organization	CSIR-National Aerospace Laboratories, Bengaluru	
2	Tender Reference No	<b>CAD/PUR/2K20/129</b>	
3	Tender Type (Open/Limited/EOI/Auction/Single)	<b>Global Tender</b>	
4	Type/Form of Contract (Work / Supply / Auction / Service / Buy / Empanelment / Sell)	Supply	
5	No of Covers (One/Two/Three/Four)	One	
6	Tender Category (Services/Good/Works)	Good	
7	Allow Resubmission (Only in online mode within scheduled period)	Yes	
8	Allow Withdrawal (Only in online mode within scheduled period)	Yes	
9	Allow Offline Submission	No	
10	Work Item Title	<b>Supply of Smoke Detector for SARAS MK II Aircraft</b>	
11	Work Description	<b>Supply of Smoke Detector for SARAS MK II Aircraft (Details as per Annexure)</b>	
12	Delivery Schedule	180 days from the date of Purchase Order	
13	Product Category (Civil Works / Electrical Works / Fleet Management / Computer Systems)	R & D Equipment	
14	Is Multi Currency Allowed	No	
15	a) Tender Publishing Date -	01 Apr 2021	1700 Hrs
	b) Document download start Date:	01 Apr 2021	1700 Hrs
	c) Bid Submission Start Date	01 Apr 2021	1700 Hrs
	d) Bid Submission End Date-	03 May 2021	1000 Hrs
	e) Bid Opening Date-	04 May 2021	1100 Hrs
16	Bid Validity Days	90 days	
17	Address for communication	Stores and Purchase Officer CSIR-National Aerospace Laboratories, HAL Airport Road, Kodihalli, Bengaluru - 560017	
18	Inviting Officer	The Director, CSIR-NAL	
19	Contact No	080 2508 6097, 2508 6710	
20	E-mail Address	purchasecadd@nal.res.in	
21	Detailed specification of item	Invitation for bids / NIT	
22	<b>Tender Terms &amp; Conditions &amp; Instruction for online bid submission</b>	<b>The prospective bidders are requested to refer to the Standard Terms &amp; conditions available on NAL website (<a href="http://www.nal.res.in">www.nal.res.in</a>) under the icon Tender-Purchase before formulating and submitting their bids.</b>	