

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
Council of Scientific & Industrial Research
राष्ट्रीय वांतरिक्ष प्रयोगशालाएं
National Aerospace Laboratories



CSIR - NAL Estd. 1959
ISO 9001 : 2015
Certified Organization

INVITATION FOR BIDS/NIT

Tender No. NAL/PUR/ALD/449/19-Y

Dated: 23-Dec-19

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	Quantity
01	Dual Spectrum Realtime AI camera. Please refer Annexure for detailed specification.	Set	01

Single / Double Bid	Two Bid
Bid Security (EMD) (in INR)	Rs. 40000/-
Performance Security	10% 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. 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
(Section Officer S&P)

पी बी सं. 1779, एचएएल एयरपोर्ट रोड , कोडिहल्ली, बेंगलुरु - 560 017, भारत,
P B No 1779, HAL Airport Road, Kodihalli, Bengaluru - 560 017, INDIA
फोन / Phone : (का./ Off) : +91 - 80 - 2508 6040 - 45, फैक्स / FAX : +91-80-2526 9611



<http://www.nal.res.in>



purchasek@nal.res.in

SCHEDULE CUM CRITICAL DATE SHEET

1	Name of Organization	CSIR-National Aerospace Laboratories, Bengaluru	
2	Tender Reference No	NAL/PUR/ALD/449/19-Y dated: 23-Dec-19	
3	Tender Type (Open/Limited/EOI/Auction/Single)	Open Tender	
4	Type/Form of Contract (Work / Supply / Auction / Service / Buy / Empanelment / Sell)	Supply	
5	No of Covers (One/Two/Three/Four)	Two	
6	Tender Category (Services/Good/Works)	Goods	
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	Dual Spectrum Realtime AI camera.	
11	Work Description	Dual Spectrum Realtime AI camera.	
12	Delivery Schedule	90 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	Yes	
15	a) Tender Publishing Date -	28-Dec-19	1800 Hrs
	b) Document Download Start Date-	28-Dec-19	1800 Hrs
	c) Bid Submission Start Date-	28-Dec-19	1800Hrs
	d) Bid Submission End Date-	20-Jan-20	1000 Hrs
	e) Bid Opening Date-	21-Jan-20	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	Director, CSIR-NAL	
19	Contact No	25086040, 25086041	
20	E-mail Address	purchaserek@nal.res.in	
21	Detailed specification of item	Refer Invitation for bids / NIT	
22	Tender Terms & Conditions & Instruction for online bid submission	The prospective bidders are requested to refer to the Standard Tender Document available on NAL Internet (www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids	

Sl.No	Item name	Quantity
1	Dual Spectrum Realtime AI camera(as per specification attached)	1 set

Dual Spectrum Realtime AI camera

Double spectrum SENSOR RGB Built-in Sony 30x Full HD Optical Zoom Camera - 1920x1080 Resolution / 30fps and Boson FLIR integrated thermal camera with GPU card (or equivalent) *el.*

Video output digital
HDMI

Data storage
64G Micro SD card*

Connectivity
WiFi/Bluetooth/Micro USB

Voltage
24V

DAYLIGHT CAMERA

Resolution
1920x1080/30fps
Optical zoom
30x
Image device
1/2.8-type CMOS
Horizontal viewing angle
63.7°(wide) to 2.3°(tele)
Focus system
Auto/Manual
Min. object distance**
10 mm to 1200 mm
Electronic shutter
1/1s to 1/10,000s
Focal length (35mm converted)
33.0 mm to 659 mm

THERMAL CAMERA

Resolution
320x256
Pixel pitch
12 µm
Sensor technology
Uncooled VOx
Thermal sensitivity
< 40 mK to < 60 mK
Spectral range
7.5 - 13.5 µm
Focal length
13.8 mm

Dimensions: < 112.5 x 98.5 x 67.5 mm

Weight < 672 gr

NVIDIA® Jetson TX1 GPU Processor

Overlapping infrared FLIR fluxes and HD camera

64 GB MICRO SD card (+16GB of internal storage)

Compatible Gimbal on Hexacopter to be provided

Software Development Kit

The SDK to be provided for porting AI code on Camera.

- Application and GUI development based on Python on top of C++ hardware accelerated libraries.
- Use the available pre-trained neural networks or import neural network in most common deep learning frameworks caffe, darknet

Deliverables:

Sl.No	Item Name	Qty
1	AI Camera	1
2	Compatible Gimbal	1
3	Software Development Kit	1 Node with 1 year License
4	Accessories and Cables	1 set

Acceptance Test Procedure:

The system will be tested for operational correctness at NAL. The system needs to be integrated on Hexacopter platform and tested for performance against specification.

