

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

Centre for System Design, NITK Surathkal

POST SRINIVASNAGAR, MANGALORE – 575 025 (D K)

A DEEMED UNIVERSITY

Phone: (0824) 2474000.

E- mail: info@nitk.edu.in

Fax: (0824) 2474033

Website: <http://www.nitk.edu.in>



TENDER DOCUMENT

Tender Notification No. NITK/CSD/TPEM/UVMTIK/2019/PU-04

Date: 24-09-2019

Name of Goods	: Uncooled VOx Microbolometer Thermal Imager Kit
Estimated amount put to Tender	: Rs. 32 Lakhs
E M D Amount	: Rs. 64,000/-
Time for Supply of item after release of Purchase order	: 30 Days.
Last Date for submission of tender	: 17-10-2019 before 3.00 PM
Address for Submission of Tender	: Dr. Pruthviraj U, Asst. Professor, Dept. of Applied Mechanics & Hydraulics, NITK Surathkal – 575025 Ph: 0824-2474000 Extn: 3313. (M): 9972797225, pruthviu@nitk.edu.in
Technical Queries: Dr. Pruthviraj U, (M): 9972797225,	pruthviu@nitk.edu.in
Date of opening of technical bid	: 18-10-2019 at 3.30 PM (if possible)



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Date: 24-09-2019

NOTICE INVITING TENDER (NIT)

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an autonomous body under Ministry of HRD Govt of India, a Deemed University, imparting Technical Education and engaged in Research Activities. It is proposed to procure the items for the departmental academic/research activities.

Sealed Tenders are invited for the following items in **two cover system** (i.e., Technical bid and financial bid) subject to the following terms and conditions, from the reputed manufacturers or its authorised dealers so as to reach this office on or before scheduled date and time. The tender (Technical bid) will be opened on the same day if possible, in the presence of bidders or their authorized agents who may choose to be present. The financial bid of only such bidders whose technical bid is accepted shall be opened on the same day or later pre-informed date.

1. Name of Goods : Uncooled VOx Microbolometer Thermal Imager Kit

2. Estimated Cost : Rs. 32 Lakhs (Rupees Thirty Two lakhs)

3. E M D : Rs. 64,000/- (Rupees Sixty four thousand)

4. Time for completion of Supply after Placing Purchase Order: 30 days

5. Last date at time for submission of Tender : 17-10-2019 before 03:00 PM

6. Tender to be submitted at the following address : Dr. Pruthviraj U,
Asst. Professor,
Dept. of Applied Mechanics & Hydraulics,
NITK Surathkal – 575025
Ph: 0824-2474000 Extn: 3313.
(M): 9972797225

7. Place, Date and Time of opening of technical bid:

Date: 18-10-2019

Time: 03:30 PM

VENUE: Board Room

Note: Institute shall not be responsible for any postal delay about non-receipt /non delivery of the bids or due to wrong addressee.

Sd/-

[Signature of Coordinator with Seal]

SECTION 1 : INSTRUCTION TO BIDDER (ITB)

1. The bid should be submitted in two cover system-Technical Bid and Financial Bid:

1.1 **Envelope No.1 – Technical Bid:** The agencies should give details of their technical soundness and provide list of customers of previous supply of similar items to Universities, Institutes or Government Departments/ Undertakings/ public sectors with contact details. The details of the agency/ profile should be furnished along with the copy of all related documents. This envelope should be sealed and duly superscribed as “**Envelope No. 1 – Technical Bid**”. Full name and address of the agency should also be mentioned on envelope and should be addressed to The Director, NITK, Surathkal.

1.2. Documents to be submitted in the technical bid:

- a) The agency should possess Licence certificate for manufacture /supply of the item.
- b) List of Owner/partners of the firm and their contact numbers
- c) The agency should possess Income tax PAN number.
- d) The agency should possess VAT registration and TIN number.
- e) Catalogue of the Product with detailed product specifications.
- f) List Service Centres
- g) List of customers with contact details.
- h) The average annual turnover should not be less than 30% of the estimated cost put to tender/quotation for the job work. The copy of the Balance sheet, Profit & Loss A/c., Trade or Manufacturing A/c for the last 3 years should be enclosed
- i) **Warranty Period Offered for the tendered item to be specified. If the Warranty period is not conforming with the schedule of requirements given in section 3 of the document, the bid is liable to be treated as non-responsive and rejected.**
- j) **EMD in original form valid for minimum six months, through Bank Guarantee only drawn on any scheduled bank in favour of “Director NITK, Surathkal”, payable at Surathkal should be submitted. EMD shall bear no interest. Any bid not accompanying with EMD is liable to be treated as non-responsive and rejected.**
- k) **Contract form given in section 5 need to be submitted.**

The above documents should be furnished in the technical bid envelope.

2. **Envelope No.2 – Financial bid:** The agencies should submit their financial bid as per the format given in Section 4 of the Notice Inviting Tender in this cover. The rate should be quoted both in words and figures. All the pages of the financial bid should be signed affixing the seal. All corrections and overwriting should be initialled. This envelope should be duly superscribed as “**Envelope No. 2 – Financial bid**”. Full name and address of the agency should also be mentioned on the envelope and should be addressed to The Director, NITK, Surathkal.

Both the Envelope No. 1 and 2 should be kept in another separate envelope duly superscribed with the following details.

(i) Tender Notification Number (ii) " Tender for the supply of....."., (iii) Not to Open before (Date and Time)

Mention “Kind Attention : Contact Person’s Name and Phone Number ” , and submit at the address given in the Notice Inviting Tender.

- 3 The tender will be acceptable only from the **manufacturers or its authorised supplier.**
4. The Institute **reserves the right to visit to the factory** before or after issue of supply order to satisfy itself regarding quality of production . In case of any remarks /default noted, the EMD will be forfeited even if pre-qualified.
5. **The Financial bid shall be in the format of Price Schedule given in Section 4. The Contract form as per format given in section 5 shall be submitted. Incomplete or conditional tender will be rejected.**
6. Details of item to be carried out, approximate quantity and the specifications are mentioned in “**Section 3**” appended to this Notice Inviting Tender.
7. **The item to be used is strictly according to the specification and subject to test by the institute/concerned authorities. It must be delivered and installed in good working condition.**
8. The Institute **reserves the right to cancel or reduce the quantity** included in the schedule of requirements at any time after acceptance of the tender with a notice. The Contractor/Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work/supply in full but he did not derive in consequence of the foreclosure of the whole or part of the works.
9. **Performance Security of 5 % of contract value in terms of Bank Guarantee by scheduled banks shall be given by the successful bidder for the total period of Warranty.**
9. **Release of EMD :** The EMD shall be released after receipt of performance security from successful bidder.
- 11 **Validity of bids:** The rate quoted should be valid for a minimum of 90 days.
No claim for escalation of rate will be considered after opening the Tender.
12. **Imports : In case, Goods are to be Imported, the Indian agent should furnish authorisation certificate by the principles abroad for submission of the bid in response to this Notice Inviting Tender.**
13. Clarification of Tender Document:
A prospective bidder requiring any clarification of the Tender Document may communicate to the contact person given in this notice inviting tender. The contact person will respond to any request for clarification for the Tender Document received not later than 5 working days prior to the last date for the receipt of bids
14. Amendment of Tender document: At any time prior to the last date for receipt of bids, Institute may for any reason, whether at its own initiative or in response to a clarification requested by prospective bidder, modify the Tender document by an amendment.
15. **Institute may at its own discretion extend the last date for the receipt of bids.**
16. The bids shall be written in English language and any information printed in other language

shall be accompanied by an English translation, in which case for the purpose of interpretation of the bid , the English translation shall govern.

17. The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids. The decision of the Institute Purchase Committee is final in all matters of tender and purchase.
18. The bidder should give the following declaration while submitting the Tender.

DECLARATION

I/we have not tampered/modified the tender forms in any manner. In case , if the same is found to be tampered/modified, I /we understand that my/our tender will be summarily rejected and full Earnest money deposit will be forfeited and I /we am/are liable to be banned from doing business with NITK, Surathkal and / or prosecuted.

Signature of the Bidder : _____

Name and Designation : _____

Business Address : _____

Place :

Seal of the Bidder's Firm

Date :

19. Any other details required may be obtained from the contact person given in the notice inviting tender during the office hours.

SECTION 2 : CONDITIONS OF CONTRACT.

1. The rates should be quoted for preferably FOR destination from supply within India.
2. In case of import both CIF and/ or FOB rate should be quoted. All components of expenditure to arrive at Bangalore need to be explicitly specified.
3. The bidder shall indicate the excise duty exemption for the goods if applicable.
4. The institute is eligible for customs duty exemption, excise duty exemption, issuance of form D.
5. The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any.
6. Rate quoted should be inclusive of Testing, commissioning and Installation of equipment and Training.
7. Payment: No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier.
In case of Imports, the payment will be made through LC / Sight Draft / After Installation, and performance security need to be submitted at the time of LC commitment / issue of sight draft.
8. Guarantee and Warrantee period should be specified for the complete period conforming to the section 3 of this tender document.
9. Period requirement for the supply and installation of item should be specified conforming to the section 3 of this tender document.
10. In case of dispute, the matter will be subject to Mangalore Jurisdiction only.

SECTION 3 : SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

[To be filled up by the Department / Center of NITK, Surathkal]

Item(s) Name to be Procured : Uncooled VOx Microbolometer Thermal Imager Kit

Type (Equipment / Software / Furniture / Others) : Equipment

Brief Specifications of the Item(s) : Attached
(Attach Additional Sheet if necessary)

Quantity : 1 Kit

Any other details / requirement : Nil

Warranty Period required : 3 Years

Delivery Schedule expected
after release of Purchase order
(in Weeks) : 30 days

EMD (in Rupees) : 2% of Estimated cost

Performance Security to be given
by Successful Bidder after release of
Purchase Order (in Rupees) : 5% of Cost

SECTION 4 : PRICE SCHEDULE

[To be used by the bidder for submission of the bid]

1. Item Name :
2. Specifications
(Conforming to Section 3 of
Tender document- Enclose additional
sheets if necessary) :
3. Currency and Unit Price :
4. Quantity :
5. Item Cost (Sl No. 3 * Sl. No. 4) :
6. Taxes and Other Charges :
(i) Specify the type of taxes and duties
in percentages and also in figures.
(ii) Specify Other Charges in figures.
7. **Warranty Period** :
**(Conforming to the Section 3 of
Tender document- This should be
mentioned in technical bid also in
order to get qualified for financial bid)**
8. Delivery Schedule :
(Conforming to the Section 3 of
Tender document
9. Name and address of the Firm for
placing purchase order :
10. Name and address of Indian authorized
agent (in case of imports only) :

Signature of the Bidder : _____

Name and Designation : _____

Business Address : _____

Place :

Date :

Seal of the Bidder's Firm

SECTION 5 : CONTRACT FORM

[To be provided by the bidder in the business letter head]

1. (Name of the Supplier's Firm) hereby abide to deliver the by the delivery schedule mentioned in the section 3 tender document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in the tender document without any defect and deviations.
3. Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

Signature of the Bidder : _____

Name and Designation : _____

Business Address : _____

Place :

Date :

Seal of the Bidder's Firm

Specifications of Uncooled VOx Microbolometer Thermal Imager Kit

<p>Thermal Imager: Uncooled VOx Microbolometer Dimensions With 25mm lens: 123.7 × 112.6 × 127.1 mm, With other lens: 118.02 × 111.6 × 125.5 mm Exportable Frame Rates : <9 Hz Pixel Pitch : 17 μm Scene Range [high gain] : 640×512: -25° to 135°C 336×256: -25° to 100°C Scene Range [low gain] : -40° to 550°C Spectral Band: 7.5 - 13.5 μm File Storage microSD card : The SD card, which is located near the lens, must be used to store TIFF Sequence and SEQ infrared RAW video. The other format footage should be stored in the other SD card. microSD card. Max capacity: 32 GB UHS-3 microSDHC (2 Nos) IMAGING & OPTICAL Angular Vibration Range : ± 0.01° CMOS : 1/1.7", Resolution: 12 M Color and Monochrome Palettes (LUTs) Digital Detail Enhancement Digital Zoom Thermal Camera: 640×512: 1x, 2x, 4x, 8x 336×256: 1x, 2x, 4x; Visual Camera: 1x, 2x, 4x, 8x FPA & Digital Video Display Formats 640 × 512; 336 × 256 Full Frame Rate : 30 Hz Image Optimization Lens Prime lens, Focus at 5 mm, FOV 90° × 65° Focus at 8 mm, FOV 57.12° × 42.44 Mount : Detachable Polarity Control : [black hot & white hot] Sensitivity [NEΔT] <50 mk @ f/1.0 Still Photography Modes Single Shot Burst Shooting (3/5 frames) Interval (2/3/4/7/10/15/20/30 sec) Video Format Thermal: 8 bit: MOV, MP4 14 bit: TIFF Sequence, SEQ; Visible: MOV, MP4 ** It is recommended to use ImageJ to play the TIFF Sequence video Photo Format Thermal Camera: JPEG, TIFF, R-JPEG; Visible Camera: JPEG PAN-TILT Controllable Range Tilt: +30° to -90°, Pan: ±320° Mechanical Range Tilt: +45° to -130°, Pan: ±330°, Roll: -90° to +60° PERFORMANCE : Max controllable speed Tilt: 90°/s, Pan: 90°/s VIDEO & RECORDING : Video Resolution 4K Ultra HD: 3840×2160 29.97p FHD: 1920×1080 29.97p</p>	<p>RTK kit (2 nos) GNSS RECEVIER GNSS Frequency Simultaneously receive: GPS: L1 C/A, L2, L5 BEIDOU: B1, B2, B3 GLONASS: F1, F2 Galileo: E1, E5A, E5B Positioning Accuracy Single Point Horizontal:1.5 m(RMS) Vertical:3.0 m(RMS) RTK Horizontal:1 cm+ 1 ppm(RMS) Vertical:2 cm+ 1 ppm(RMS) 1 ppm: For every 1 km increase in distance, the accuracy will be 1 mm less. For example, the horizontal accuracy is 1.1 cm when the receiving end is 1 km away from the base station. Positioning Update Rate 1 Hz, 2 Hz, 5 Hz, 10 Hz and 20 Hz Cold Start <45 s Hot Start <10 s Recapture Time <1 s Initialization Reliability >99.9% Differential Data Format RTCM 2.X/3.X COMMUNICATION AND DATA STORAGE Data Link OcuSync, Wi-Fi, LAN, 4G Operating Frequency 2.400 GHz to 2.483 GHz Communication Distance OcuSync: 2 km (unobstructed and free of interference, when the distance from the D-RTK 2 antenna to the bottom of the tripod is 1.8 m, when the difference in height between the remote controller and D-RTK 2 is less than 2 m, and when the remote controller is 1.2 m from ground level) Memory Capacity 16 GB ELECTRICAL CHARACTERISTICS Power Consumption 12 W Power Supply 16.5 to 58.8VDC Battery Type:Lithium-ion battery Capacity: 4920 mAh Energy: 37.3 WH Run Time WB37 battery:>2 h MG-12000P battery:>50 h INTELLIGENT BATTERY with charger: (4 Nos)</p>
<p>Extended Intelligent Battery: 4920mAh-7.6V) (6 nos) Capacity 7660 mAh Voltage 22.8 V Battery Type LiPo 6S Energy 174.6 Wh Net Weight (Single One) Approx. 885 g Operating Temperature -4° to 122° F (-20° to 50° C) Charging Temperature 41° to 104° F (5° to 40° C) Max Charging Power 180 W CHARGING HUB Input Voltage 26.1 V Input Current 6.9 A</p>	<p>REMOTE CONTROLLER (1 No.) Operating Frequency: 2.4000-2.4835 GHz; 5.725-5.850 GHz Max Transmitting Distance (unobstructed, free of interference) EIRP 2.4 GHz: = 26 dBm (NCC/FCC); = 20 dBm (CE/MIC); = 20 dBm (SRRC) 5.8 GHz: = 26 dBm (NCC/FCC); = 14 dBm (CE); = 26 dBm (SRRC) Output Power (max):13W (without supplying power to monitor) USB Power Supply: 1A 5.2 V (max) Monitor :7.85inch, Resolution: 2048×1536; Brightness: 2000 cd/m2; Operating System: Android 5.1; Storage: ROM 128GB Operating Temperature: -4° to 122° F (-20° to 50° C)</p>

<p>REMOTLY OPERATED UNIT</p> <p>Max Takeoff Weight: 6.14kG</p> <p>Max Payload Approx.2.34kg</p> <p>Hovering Accuracy (P-mode with GPS) Vertical: ±1.64 feet (0.5m) or ±0.33 feet (0.1m, Downward Vision System enabled)</p> <p>Horizontal: ±4.92 feet (1.5m) or ±0.98 feet (0.3m.Downward Vision System enabled)</p> <p>Max Angular Velocity Pitch: 300° /s;Yaw: 150° /s</p> <p>Max Pitch Angle P Mode: 30°(Forward Vision System enabled: 25°); A Mode: 35°;S Mode: 35°</p> <p>Max Ascent Speed 16.4 ft/s (5 m/s)</p> <p>Max Descent Speed Vertical: 9.8 ft/s (3 m/s)</p> <p>Max Speed S Mode: : 82kph</p> <p>Max Service Ceiling Above Sea Level 1.86 mi (3000 m)</p> <p>Max Wind Resistance : 12 m/s</p> <p>Max Flight Time : 24min</p> <p>compatible motor and speed controllers</p>	<p>DATA PROCESSING UNIT</p> <p>Graphics</p> <p>Vega 56</p> <p>Radeon Pro Vega 56 graphics processor with 8GB of HBM2 memory</p> <p>56 compute units</p> <p>3584 stream processors</p> <p>9 teraflops single precision</p> <p>18 teraflops half precision</p> <p>Display</p> <p>5K, Retina display - 27-inch (diagonal) Retina 5K display - 5120x2880 resolution with support for 1 billion colours, 500 nits brightness - Wide colour (P3)</p> <p>Processor</p> <p>8-Core, 3.2GHz Intel Xeon W,Turbo Boost up to 4.2GHz</p> <p>19MB cache</p> <p>Memory</p> <p>32GB of 2666MHz DDR4 ECC memory</p> <p>Quad-channel memory controller</p> <p>Storage</p> <p>1TB SSD</p> <p>Display support</p> <p>Two 5120x2880 (5K) external displays at 60Hz with support for 1 billion colours, or</p> <p>Four 3840x2160 (4K UHD) external displays at 60Hz with support for 1 billion colours, or</p> <p>Four 4096x2304 (4K) external displays at 60Hz with support for millions of colours</p> <p>Support for extended desktop and video mirroring modes</p> <p>Thunderbolt 3 digital video output</p> <p>Native DisplayPort output over USB-C</p> <p>Audio</p> <p>Stereo speakers, Four microphones, 3.5mm headphone jack</p> <p>Connectivity port</p> <p>10Gb Ethernet</p> <p>Nbase-T Ethernet with support for 1Gb, 2.5Gb, 5Gb and 10Gb Ethernet using RJ-45 connector</p> <p>SDXC card slot with support for UHS-II?</p> <p>Four USB 3 ports</p> <p>Four Thunderbolt 3 (USB-C) ports with supporting atleast DisplayPort 1.2, Thunderbolt (up to 40 Gbps)</p> <p>USB 3.1 Gen 2 (up to 10 Gbps)</p> <p>Input</p> <p>Space Grey Magic Keyboard with Numeric Keypad</p> <p>Space Grey Magic Mouse 2</p> <p>compatibility for Space Grey Magic Trackpad 2</p> <p>Wireless</p> <p>Wi-Fi, 802.11ac Wi-Fi wireless networking</p> <p>IEEE 802.11a/b/g/n compatible, Bluetooth 4.2 wireless technology</p>
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Warranty: 3 Years

Training Period: 10 Days

Installed at: Centre for System Design, NITK Surathkal