

# The UNIVERSITY Of FAISALABAD

TENDER DOCUMENT No. TUF/NRPU/1-16789

**Supply of Lab Equipment for Electrical Engineering Department under NRPU Funded Project No. TUF/NRPU/1-16789, entitled “BIO-INSPIRED UNMANNED AERIAL VEHICLE DESIGN (UAV) FOR DEEP LEARNING BASED MONITORING, ASSESSMENT AND INSPECTION OF CIVIL INFRASTRUCTURES”.**

**Tender Fee: Rs. 1000/-  
( Non Refundable)**

Sealed Tenders are invited from the well reputed firms / suppliers, who are registered with Tax Departments for supply of Lab Equipment for TUF/NRPU/1-16789, titled “Bio-inspired Unmanned Aerial Vehicle Design (UAV) for deep learning based monitoring, assessment and inspection of civil infrastructures”.

## **GENERAL TERMS & CONDITIONS**

### **1. Tender Opening Date & Procedure:**

- 1.1. The procurement shall be completed in accordance with Punjab Procurement Rule ACT 2014, on Single Stage - Two Envelope Bidding Procedure.
- 1.2. Bids in complete conformity with Tender Documents will be dropped in Tender Box placed at the office of undersigned, not later than on 12.10.2023 at 11:00 A.M which shall be opened on same day at 11:30 A.M in under signed Office.

#### **Note:**

- Tender Number must be mentioned on envelope.
- Both Technical and financial proposal shall be written on the letter head of the company/ firm along with other prescribed documents.

### **2. Tender Fee, Bid Security and Performance Security:**

- 2.1 The Bid must be accompanied by Tender Fee of Rs:1000/- (nonrefundable) in shape Bank draft in original and Bid Security of 2% of Estimated Price of Rs. **1,640,556/-** (refundable) Demand Draft must be in favor of “The University, of Faisalabad.
- 2.2 Rates / bids should be inclusive of all applicable Govt. Taxes.

### **3. Validity of Offers.**

- 3.1 Offers shall be valid for 30 days from the date of submission of bids.
- 3.2 Withdrawal / modification of the original offer within the validity period shall entitle the University to forfeit Bid Security.
- 3.3 Sales Tax Number and NTN Number must be mentioned on the letter head and bidding documents.

#### **4.Failures and Terminations:**

No offer of a supplier / firm will be considered if: -

- 4.1 Bid received without Bid Security / Call Deposit or less Demand Draft than the required.
- 4.2 Bids received not in accordance with specifications of Tender Documents.
- 4.3 Bid received later than the date and time fixed for tender.
- 4.4 Tender is incomplete in any respect or is unsigned.
- 4.5 Offer is ambiguous and the offer is conditional.
- 4.6 Offer from a firm which is blacklisted at any level.
- 4.7 Any erasing / cutting / overwriting etc.
- 4.8 If offer is not accompanied by Authorization letter from the manufacturer specific to this tender.
- 4.9 The supplier fails to deliver the consignment within specified delivery period strictly in accordance with the terms and conditions as laid down in the Purchase Order.
- 4.10 Situation warranted, then University is authorized to forfeit the bid Security and the firm may also be blacklisted.

#### **5. Other special conditions:**

- 5.1 The decision of the Rector The University, Faisalabad, would be final & binding on both the parties and not challengeable in any court of law.
- 5.2 10% performance security under the rules shall be deducted from the final bill of the successful bidder as per PPRAx Rules 2014 and shall be released upon successful completion of warranty period of a minimum 1 year.
- 5.3 All Government Taxes will be deducted according to applicable rules.
- 5.4 The University may reject all bids/proposals at any time prior to the acceptance of a bid or proposal as per PPRA Punjab rule 35, however upon bidder request the ground of rejection will be communicated to the concerned but no justification will be given as per PPRA rule 35 (2).

#### **Convener Purchase Committee**

Project No. TUF/NRPU/1-16789

The University of Faisalabad

Canal Road Camps

Phone no. 0330-1980654

**Appendix "A"**

**TENDER DOCUMENT No. PSF/CRP/Consrn-713**

Sr. No.	Item	Specification OR Equivalent	Quantity	Unit Price including	Total Price
1	FLIR E53 Infrared Thermal Imaging Camera	<p><b>Model:</b> FLIR E53 <b>IR Resoultion:</b> 240 x 180 (43,200 pixels) <b>Object Temperature Range:</b> -20° C to 120° C (-4° F to 248° F) 0° C to 650° C (32° F to 1200° F) <b>Focus:</b> Manual <b>Measurement Presets:</b> No measurement, center spot, hot spot, cold spot, 3 spots, hot spot-spot <b>Spotmeter:</b> 3 in live mode <b>Area:</b> 1 in live mode <b>Picture-in-Picture:</b> Centered infrared area on the visual image <b>Detector type and pitch:</b> Uncooled microbolometer, 17 um <b>Thermal Sensitivity/NETD:</b> &lt;0.03° C (86° F), 42° lens <b>Spectral Range:</b> 7.5 – 14.0 um <b>Image Frequency:</b> 30 Hz <b>Field of View (FOV):</b> 42° x 32° (10 mm lens), 24° x 18° (18 mm lens), 14° x 10° (29 mm lens) <b>F-number:</b> f/1.3 <b>Lens Identification:</b> Automatic</p> <p>Further specifications are attached Annexure A.</p>	<b>01</b>	<b>1.6 Mil</b>	<b>1.6 Mil</b>
<b>Total Amount</b>			<b>01</b>	<b>1.6 Mil</b>	<b>1.6 Mil</b>

**Details of Demand Dtaft**

**Signature** \_\_\_\_\_

No. \_\_\_\_\_ Amount \_\_\_\_\_ Name of Bidder \_\_\_\_\_

Bank \_\_\_\_\_ Branch \_\_\_\_\_ City \_\_\_\_\_ NIC No \_\_\_\_\_

Name of Frim & Address \_\_\_\_\_ Ph. No. \_\_\_\_\_

N.T.No. \_\_\_\_\_ Sales Tax No. \_\_\_\_\_

**Issued By:**

**Convener Purchase Committee**

Project No. TUF/NRPU/1-16789

The University of Faisalabad

Canal Road Camps

Phone no. 0330-1980654

## Appendix A: Handheld Infrared Camera FLIR E53

Features By Camera	E53
IR Resolution	240 × 180 (43,200 pixels)
UltraMax®	—
Object Temperature Range	-20°C to 120°C (-4°F to 248°F) 0°C to 650°C (32°F to 1200°F)
Focus	Manual
Time-lapse (Infrared)	—
Laser Area Measurement	—
Laser Distance Measurement	—
Measurement Presets	No measurement, center spot, hot spot, cold spot, 3 spots, hot spot-spot*
Spotmeter	3 in live mode
Area	1 in live mode
Picture-in-Picture	Centered infrared area on the visual image
Detector Type and Pitch	Uncooled microbolometer, 17 μm
Thermal Sensitivity/NETD	<0.03°C @ 30°C (86°F), 42° lens
Spectral Range	7.5 – 14.0 μm
Image Frequency	30 Hz
Field of View (FOV)	42° × 32° (10 mm lens), 24° × 18° (18 mm lens), 14° × 10° (29 mm lens)
F-Number	f/1.3
Lens Identification	Automatic

\*Hot spot to center spot Delta measurement

Digital Zoom	1-4x continuous
<b>Image Presentation and Modes</b>	
Display	4", 640 × 480 pixel touch screen LCD with auto-rotation
Digital Camera	5 MP, 53° × 41° FOV
Color Palettes	Iron, Gray, Rainbow, Arctic, Lava, Rainbow HC
Image Modes	Infrared, visual, MSX®, Picture-in-Picture
MSX®	Embosses visual details on full resolution thermal image
<b>Measurement and Analysis</b>	
Accuracy	±2°C (±3.6°F) or ±2% of reading for ambient temperature 15°C to 35°C (59°F to 95°F) and object temperature above 0°C (32°F)
Alarms	Moisture alarm, insulation alarm, measurement alarms
Color Alarm (Isotherm)	Above/below/interval/condensation/insulation
Compass, GPS	Yes; automatic GPS image tagging
METERLiNK®	Yes; several readings
Laser Pointer	Yes; dedicated button
<b>Image Storage</b>	
Storage Media	Removable SD card (8 GB)
Image File Format	Standard JPEG with measurement data included
<b>Video Recording and Streaming</b>	
Radiometric IR Video Recording	Real-time radiometric recording (.csq)
Non-Radiometric IR or Visual Video	H.264 to memory card
Radiometric IR Video Streaming	Yes, over UVC or Wi-Fi
Non-Radiometric IR Video Streaming	H.264 or MPEG-4 over Wi-Fi; MJPEG over UVC or Wi-Fi
Communication Interfaces	USB 2.0, Bluetooth, Wi-Fi, DisplayPort
Video Out	DisplayPort over USB Type-C
<b>Additional Data</b>	
Battery Type	Li-ion battery, charged in camera or on separate charger
Battery Operating Time	Approx. 2.5 hours at 25°C (77°F) ambient temperature and typical use
Operating Temperature Range	-15°C to 50°C (5°F to 122°F)
Storage Temperature Range	-40°C to 70°C (-40°F to 158°F)
Shock/Vibration/Encapsulation; Safety	25 g / IEC 60068-2-27, 2 g / IEC 60068-2-6, IP 54 / IEC 60529; EN/UL/CSA/PSE 60950-1
Weight/Dimensions	1 kg (2.2 lbs), 27.8 × 11.6 × 11.3 cm (11.0 × 4.6 × 4.4 in)
<b>Box Contents</b>	
Infrared camera with lens, battery (2 ea), battery charger, front protection, straps (hand, wrist), hard transport case, lanyards, lens caps, lens cleaning cloth, power supplies, 8 GB SD card, Torx wrench, cables (USB 2.0 A to USB Type-C, USB Type-C to USB Type-C, USB Type-C to HDMI)	