COMSATS University Islamabad (CUI), Lahore Campus
Defence Road, Off Raiwind Road, Lahore

Tender No. CUI-LHR-TN-20-1435
Case # 3191

Single Stage One Envelop Procedure

Title of Tender: **Lab Items for Embedded System Workshop for Department of Electrical & Computer Engineering**

TERMS AND CONDITIONS

1. *All pages of bidding documents are mandatory to be signed / stamped, meaning thereby bidder agrees to our terms & conditions mentioned herein, failing which the bid may be rejected.*

2. *Any addition, deletion or modification of any clause of the procurement terms &conditions/BoQs of CUI, Lahore Campus by any vendor will not be acceptable and may lead to rejection of the bid.*

3. *Only registered Suppliers, who are on Active Taxpayers List (ATL) of FBR, are eligible to participate in tender.*

4. The contract will be executed and handed over in satisfactory conditions up to the entire satisfaction of COMSATS University Islamabad, Lahore Campus.

5. Documents along with Pay Order / Demand Draft amounting to **Rs. 500/-** as a tender document fee (Non-Refundable) shall be submitted in favor of COMSATS University Islamabad, Lahore Campus to the address given below. No bid will be accepted without tender documents' fee.

6. Part / Advance payments is not allowed.

7. **The exact completion/delivery time from the date of the purchase / work order will be 20 days. The handing over / completion time for this contract is of critical importance.**

8. Your bid proposal should be inclusive of freight and all other taxes and to be delivered at CUI, Lahore Campus's premises.

9. After opening of bids, CUI, Lahore Campus will examine the bids for completeness as per tender document.

10. In case more than one bidder have quoted same rates for an item; the bidder securing more items (in terms of cost) will be awarded the specific item.

11. Purchase order (s) will be awarded to the lowest or technically recommended bidder (s) on the basis of item wise / subtotal wise / grand total wise according to the nature of BoQs.

12. The bid should be submitted in a sealed envelope up to **December 02, 2020** on or before **1400hrs** and will be opened on the same date **at 1430hrs** in the presence of available bidders. In case of any holiday is announced by the Govt. OR any unforeseeable circumstances that prevent the tender from being opened on the date announced (Force Majure Situation), the tenders will be opened on the very next working day. Timing will remain as mentioned in the tender notice.

13. The envelope should be marked as under;
    Secretary, Purchase Committee
    COMSATS University Islamabad, Lahore Campus
    Defence Road, Off Raiwind Road, Lahore.
    Tel: 042-111-001-007, Ext: 875

The envelope shall also bear the word **"CONFIDENTIAL"** and following identification quotation of **"Lab Items for Embedded System Workshop for Department of Electrical & Computer Engineering".**

14. The bid form (BoQs) must be duly filled in, stamped and signed by the authorized representative of the bidder.

15. **If the vendor fails to deliver the goods / services to COMSATS University Islamabad (CUI), Lahore Campus within the given deadline, any of the following can be opted by CUI Lahore campus on the recommendation of the end user and approval of the authority;**

    a. An extension in the delivery period may be granted in case a valid reason/justification with necessary documentary evidence is provided by the vendor supporting the reason for delay.
    b. A penalty upto 10% of the invoice value may be charged.
    c. Purchase order may be cancelled along with confiscation of earnest money if the vendor fails to deliver the goods / services after the initial or extended delivery time, as the case may be.

16. If the delivered goods / services are not according to the required quality standards / specifications, the same shall be liable to be rejected after inspection. The vendor would be required to supply as per requirements mentioned in our BoQs, otherwise the purchase / work order will be cancelled after due date with confiscation of earnest money.

17. Deduction of Income Tax and any other tax will be deducted at source according to Government prevailing rules.

18. Payment will be made on submission of Invoice in the name of "COMSATS University Islamabad, Lahore Campus" with a copy of delivery challan (s) after the complete order has been supplied, inspected and accepted which includes delivery / installation, and COMSATS acceptance / inspection thereof.

19. All prices should be quoted on **F.O.R (Pak Rupees) inclusive of all taxes.**

20. All prices should be valid for at least **90 days.** Withdrawal or any modification of the original offer within the validity period shall entitle CUI-Lahore Campus to forfeit the earnest money in favor of the CUI-Lahore Campus and / or put a ban on such vendor participation in CUI tenders / works.

21. It is the sole responsibility of the agent / supplier / manufacturer to comply with the applicable laws, be national or international.

22. In case of any dispute or grievance, the matter shall be addressed as per PPRA rules.

23. The CUI-Lahore Campus reserves the right to modify the quantities of goods / services at any time before the award of purchase / work order.

24. **The bidder is required to furnish in form of <u>Bank deposit/ CDR / Pay order equivalent to 2% of the total Bid price as Earnest Money crossed in favor of "COMSATS University Islamabad, Lahore Campus".</u>**

25. COMSATS University Islamabad, Lahore Campus reserves the rights to reject the bid if;

    i. Received without earnest money
    ii. Received later than the date and time fixed for tender submission
    iii. The tender is unsigned/ unstamped
    iv. The offer is ambiguous
    v. The offer is conditional
    vi. The offer is from a firm, which is black listed by any Govt. Office.
    vii. The offer is received by telephone/telex/fax/telegram.
    viii. Any unsigned / ambiguous erasing, cutting / overwriting etc. is made.

26. The bidder should furnish a certificate as worded below in token of acceptance of all the terms and conditions of the tender otherwise the tender will not be considered under any circumstances.

27. The undersigned affirm that the terms and conditions as contained in this document have been read and accepted and that in the event of selection of my/our rate the agreement in the prescribed form will be entered into:

- **Company / Vendor Name:**……………………………………………..………..………...
- **Postal Address:**…………………………………………………………………………………….
- **Tel. / Mobile:**…………………………..…………………**Email:**…………………………………...…
- **NTN# :**……………………………………………..**GST#:**……………………………………...………
- **Signature:** ………………………………………….
- **Please also attach the Certificate supporting being Active Taxpayer as per requirement of FBR.**

BoQs of Lab Items for Embedded System Workshop for Department of Electrical & Computer Engineering

Vendors are required to provide both unit and total price of each item and calculations must be made carefully to avoid mistakes. However, in case, total price does not match with the unit price and quantity due to calculation error or typo error, any of the following can be opted: 1. The bid may be rejected on the reason of ambiguity (OR) Unit price will be considered as final and total price of the respective item will be calculated by multiplying it with the quantity required. Sub-totals and grand total will also be corrected accordingly					
No change in the BoQs (Specs & Qty.) of CUI-Lahore Campus, as detailed below, is allowed. Any additional information may be mentioned in the blank columns (i.e. model / brand or Price). Any modification in CUI-Lahore Campus BoQ may lead to rejection of bid (fully or partially).			**Prices to be quoted inclusive of all applicable taxes**		
Sr. #	**Item Name & Specifications**	**Qty**	**Quoted Model / Brand /Make**	**Unit Price (Rs.)**	**Total Price (Rs.)**
1	**Stepper Motors** **Stepper Motor 28BYJ-48 (5v) or equivalent** - **Rated Voltage: 5V** - **Coil Resistance 50 Ohms** - **Coil Type: Unipolar, Diameter-shaft 0.197" (5.00mm)** - **Length – shaft and bearing: 0.394″ (10 mm)** - **Features: Flatted shaft** - **Size/dimension: Round – 1.100″ dia (28.00 mm)** - **Mounting hole spacing: Flatted Shaft** - **Gear reduction: 1/64.** - **Step angle: Half step mode (recommended): 0.0879°** - **Full step mode: 0.176°**	30	Nos.			

	• **Steps per revolution: Half step mode: 4096** • **Full step mode: 2048** • **Termination style: Wire leads with connector** • **Motor type: Permanent Magnet Gear Motor** • **Number of phases: 4** **Stepper Motor Driver Board (ULN2003 Driver Board) or equivalent** • **Output current (single output): 500 mA max** • **High sustaining voltage output: 50 V min** • **Output clamp diodes** • **Inputs compatible with various types of logic** • **Package Type-APG: DIP-16pin** **Package Type-AFWG: SOL-16pin**				
2	**Servo Motors** **Power HD Standard Servo 3001HB or** **equivalent** **The 3001HB is a great, general-purpose, low-cost standard analog servo from Power HD. Two ball bearings help reduce friction and improve performance. This servo is a replacement for— and upgrade over—the original HD-2360A servo. Servo horns and associated hardware are included.** **Dimensions** • **Weight 43g** • **Size: 40.7 x 20.5 x 39.5 mm** • **General specifications,** • **Speed @ 6V:0.12 sec/60°,** • **Stall torque @ 6V:4.4 kg·cm,** • **Speed @ 4.8V:0.15 sec/60°,** • **Stall torque @ 4.8V:3.5 kg·cm,** **Lead length: 11 in** **Hardware included? Yes**	30	Nos.		
3	**DC Motors** **5v DC motor with driver Operating Voltage** • **Voltage: 5V** • **Operating voltage: 1.5 to 9.0V** • **No-load speed: 3,100rpm** • **No-load current: 0.026A** **Speed at maximum** • **efficiency: 2,540rpm** • **Current at maximum efficiency: 0.12A** • **Torque at maximum efficiency: 12.60gcm** • **Power at maximum efficiency: 0.33W** • **Stall torque: 70gfcm** **Stall current: 0.54A**	30	Nos.		

4	**USB** **Sandisk Ultra Flair 16GB USB 3.0 Flash Drive or equivalent** **High Speed USB 3.0 performance** **Metal Casing with standard warranty**	**30**	**Nos.**			
5	**Ethernet Cables** **CAT6 UTP** **This Cat 6 UTP LAN cable is a cable standard for Gigabit Ethernet and other network protocols. This cable provides performance of up to 500 MHz and is suitable for 10BASE-T, 100BASE-TX (Fast Ethernet), 1000BASE-T / 1000BASE-TX (Gigabit Ethernet) and 10GBASE-T (10-Gigabit Ethernet).**	**30**	**Nos.**			
6	**SD Cards** **Micro SD Memory Card (8 GB)** **Or equivalent**	**30**	**Nos.**			
7	**Bluetooth Module** **HC-06 bluetooth RF transceiver module or equivalent** • **Bluetooth protocol: Bluetooth V2.0 protocol standard** • **Power Level: Class2(+6dBm)** • **Band: 2.40GHz—2.48GHz, ISM Band** • **Receiver sensitivity: -85dBm** • **USB protocol: USB v1.1/2.0** • **Modulation mode: Gauss frequency Shift Keying** • **Safety feature: Authentication and encryption** • **Operating voltage range:+3.3V to +6V** • **Operating temperature range: -20ºC to +55ºC** **Operating Current: 40mA**	**30**	**Nos.**			
8	**STM32- ARM4 Core Trainer Boards or equivalent** **STM32F407 Discovery Kit Arm Cortex-M4 or** **equivalent** **development board** • **STM32F407VGT6 microcontroller featuring 32-bit ARM® Cortex® -M4 with FPU core, 1-Mbyte Flash memory, 192-Kbyte RAM in an LQFP100 package** • **On-board ST-LINK/V2 on STM32F4DISCOVERY (old reference) or**	**5**	**Nos.**			

	ST-LINK/V2-A on STM32F407G-DISC1 (new order code)					
	• USB ST-LINK with re-enumeration capability and three different interfaces					
	• Debug port					
	• Virtual Com port (with new order code only)					
	• Mass storage (with new order code only) Board power supply: through USB bus or from an external 5 V supply voltage					
	• External application power supply: 3 V and 5 V					
	• LIS302DL or LIS3DSH ST MEMS 3-axis accelerometer					
	• MP45DT02 ST-MEMS audio sensor omnidirectional digital microphone					
	• CS43L22 audio DAC with integrated class D speaker driver					
	• LD1 (red/green) for USB communication					
	• LD2 (red) for 3.3 V power on					
	• Four user LEDs, LD3 (orange), LD4 (green), LD5 (red) and LD6 (blue)					
	• 2 USB OTG LEDs LD7 (green) VBUS and LD8 (red) over-current					
	• Two push-buttons (user and reset)					
	• USB OTG FS with micro-AB connector					
	• Extension header for all LQFP100 I/Os for quick connection to prototyping board and easy probing					
	Comprehensive free software including a variety of examples, part of STM32CubeF4 package or STSW-STM32068 to use legacy standard libraries or equivalent					
9	**Keypad** 4x3 Small Keypads for PIC trainer This Matrix Keypad 4 X 3 has 12 buttons, arranged in a telephone-line 3x4 grid. The keys are connected into a matrix, hence only 7 microcontroller pins (3-columns and 4-rows) are required to scan the pad. Specifications of Matrix Keypad 4 X 3. Can be attached on any surface Only 7 microcontroller pins are needed to access 12 buttons	10	Nos.			
10	**Jumper Wire** Male to male • Male header contacts on both ends • Standard 0.1" (2.54mm) spacing when placed next to each other • Length: 200mm (7.87") • Fits breadboard Weight: 31g (1.1oz)	100	Nos.			

Signature & Stamp of Bidder

11	**Jumper Wire** **Male to female** • **Female header contacts on one end, male header contacts on other end** • **Standard 0.1" (2.54mm) spacing when placed next to each other** • **Length: 200mm (7.87")** • **Fits breadboard** **Weight: 31g (1.1oz)**	**100**	**Nos.**			
12	**Jumper Wire** **Female to female** • **Female header contacts on both ends** • **Standard 0.1" (2.54mm) spacing when placed next to each other** • **Length: 200mm (7.87")** • **Fits breadboard** **Weight: 31g (1.1oz)**	**100**	**Nos.**			
13	**USB to OTG converter (Type B)** • **Material: Plastic** • **Colour: Black** • **Compatible Models: Android Phones** • **Product Dimensions (L x W x H): 6 cm x 3 cm x 3 cm** • **Pin Type: Micro USB Type B;** **Connectivity Technology: Wired USB**	**30**	**Nos.**			
14	**Breadboard** **Solderless project bread board** • **2 Distribution Strips,200 tie-points** • **630 tie-points in IC/ circuit areas** • **ABS plastic with color legend** • **Dimension: 6.5*4.4*0.3 inch** **Hole/Pitch Style: Square wire holes (2.54mm)** • **ABS heat Distortion Temperature: 84° C (183° F)** • **Rating: 300/3 to 5Amps** • **Insulation Resistance : 500MΩ / DC500V** • **Withstanding Voltage : 1,000V AC / 1 minute** **Insertion Wire Size: 21 to 26 AWG wire**	**30**	**Nos.**			

Bid Evaluation Criteria

All bids shall be evaluated in accordance with the following evaluation criteria and other terms & conditions set forth in this bidding document.

• **The bids shall be evaluated to strictly ensure that the quoted brand/ model meet all the BoQ/ specification requirements given in the tender document for each item.**

- **In addition to the BoQ requirements, vendors must meet the vendor qualification criteria /company profile requirements (if any), as set forth in this tender document.**

- **Supporting literature of the quoted model must be attached for verification & technical evaluation of the required specification by the technical committee. In case of any clash is found between the quoted model and the supported literature may lead to rejection of bid.**

Special Terms and conditions;

i. **Please submit bid (rates) on our prescribed BoQs Form and clearly mention the quoted model / brands, with complete terms and conditions signed, stamped with bids, otherwise your bid (s) may be rejected.**

ii. **Purchase / work order (s) will be awarded on Item Wise Basis as mentioned in BoQs.**

iii. **Multiple rates of an item may also lead to the rejection of bid / item.**