RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA
(State Technological University of Madhya Pradesh)
[Accredited with 'A' grade by NAAC]

Office of TEQIP-III
Airport Road, Gandhi Nagar, Bhopal – 462033
Ph.No:0755-2678805 website: www.rgpv.ac.in

Ref. No.: RGPV/TEQIP-III/2019/03/ 397

Date: 31.07.2019

INVITATION LETTER

Package Code: TEQIP-III/2019/MP/rgpv/100

Package Name: IOT Research Equipments

Current Date: 31-Jul-2019

Method: Shopping Goods

To,

_____

_____

_____

_____

Sub: INVITATION LETTER FOR submission of quotation for IOT Research Equipments

Dear Sir,

1.   You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	IOT Lab equipments	1	Office of TEQIP-III Room No 103, Admin Block Rajiv Gandhi Proudyogiki Vishwavidyalaya Airport Road, Gandhi Nagar, Bhopal – 462033	Yes

2.   Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

3.   **Quotation**

    3.1   The contract shall be for the full quantity as described above.

    3.2   Corrections, if any, shall be made by crossing out, initialling, dating and re writing.

    3.3   All duties and other levies payable by the supplier under the contract shall be included in the unit Price.

3.4 Applicable taxes shall be quoted separately for all items.

3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.

5. Quotation shall remain valid for a period not less than **30** days after the last date of quotation submission.

6. Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which

6.1 are properly signed; and

6.2 Confirm to the terms and conditions, and specifications.

7. The Quotations would be evaluated for all items together.

8. Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract.

8.2 *The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be Incorporated in the purchase order.*

9. Payment shall be made in Indian Rupees as follows:

Payment Description	Expected Delivery Period (in Days)	Payment Percentage
Satisfactory Delivery & Installation	30	10
Satisfactory Acceptance	30	90

10. Liquidated Damages will be applied as per the below:
Liquidated Damages Per Day Min %:N/A
Liquidated Damages Max %:N/A

11. All supplied items are under warranty of **36** months from the date of successful acceptance of items and AMC/Others is .

12. You are requested to provide your offer latest by **15:00** hours on **14-Aug-2019.**

13. Detailed specifications of the items are at Annexure I.

14. Training Clause (if any) **Yes**

15. Testing/Installation Clause (if any) **Yes**

16. Performance Security shall be applicable: **0%**

17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.

18. Sealed quotation to be submitted/ delivered at the address mentioned below,

> **Coordinator, TEQIP-III**
> **Rajiv Gandhi Proudyogiki Vishwavidyalaya**
> **Airport Road, Gandhi Nagar, Bhopal – 462033**

19. Prices offered for the quoted items are lowest and not more than that the prices charged to any other institute/ University for the same product with the same configuration & specifications. (A certificate is to be enclosed)

20. The supplier must be either prime manufacturer or principal authorized dealer/ distributor. The certificate of this shall be attached with the tender document.

21. The price quoted shall be for complete package of equipment inclusive of all the accessories mentioned. Quotation for individual items shall not be acceptable.

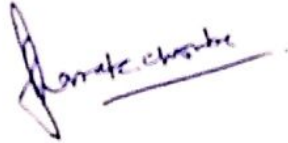22. The prices shall be quoted in the following components as tabulated below:

S.No.	Details of Equipment	Basic Price (INR)	GST (INR)	Freight Charges (INR)	Insurance Charges (INR)	Any other Charges (INR) (If applicable)	Total Cost (INR)

23. The supplier shall be solely responsible to execute complete supply order within stipulated period.

24. The supplier shall give guarantee for availability of spare parts and consumables for a period of minimum 3 years from the date of supply. The supplier shall clearly mention the terms & conditions of repair and maintenance contract (after the lapse of 12 months onsite warranty). AMC shall be applicable only after the exhaustion of warranty period.

25. It is mandatory for supplier to provide a comprehensive instructional/ user/ technical manual and experiment manual (if available) for the supplied equipment(s).

26. The supplier shall enclose all documents of registrations e.g. company/ firm registration, manufacturer/ authorized supplier, GST registration, and all other relevant registration documents.

27. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)
Name & Designation

Prof. S.C. Choube
Co-ordinator TEQIP-III
R.G.P.V., B~

Coordinator, TEQIP-III
Rajiv Gandhi ProudyogikiVishwavidyalaya
Airport Road, Gandhi Nagar, Bhopal –(M.P.)

Annexure I

Sr. No.	Specifications of IoT Lab equipments	Qty

1	Highly integrated System on Chip with ARM Cortex M3 microcontroller based Low Power and Medium range RF communication module compliant to IEEE802.15.4 supporting a maximum transmitting power of +7 dBm. It should also support application development platforms like Contiki OS, Zigbee and custom stacks. Specs of SoC should be as below:
	
	    – Up to 32-MHz Clock Speed
	    – Up to 32KB of RAM (16KB With Retention in All Power Modes)
	    – Two timers (16/32 bit)
	    – 512KB of In-System Programmable Flash
	    – Supports On-Chip Over-the-Air Upgrade (OTA)
	    – Battery Monitor and Temperature Sensor
	    – 12-Bit ADC With 2 Channels and Configurable Resolution
	    – USB 2.0 Full-Speed Device (12 Mbps)
	    – Four Universal Serial Communication Interfaces (USCIs)- SPI,UART, I2C
	
	External Flash Memory:
	    – 8Mb Flash memory, Up to 75 MHz clock frequency
	    – SPI Interface , Write Protection, Deep Power Down Mode
	
	RF subsystem:
	    – ISM Band RF Transceiver with RF frequency range 2394-2507 MHz (2.4 GHz)
	    – IEEE 802.15.4 compliant DSSS baseband modem with 250 kbps data rate
	    – Low Power (RX -97dBm @ 20 mA, TX 0 dBm @ 24 mA)
	    – Ultra-low power down mode (<1.3µA)
	    – Good receiver sensitivity (-100 dBm), Adjacent channel rejection: 44 dBand Alternate channel rejection: 52 dB
	
	Security sub system:
	    – Future Proof AES-128/256, SHA2 Hardware Encryption Engine
	    – Optional–ECC-128/256, RSA Hardware Acceleration Engine for Secure KeyExchange
	
	Expansion headers for connecting Ubi-Sense, Ubi-DAC and external sensors
	Intelligent power system with rechargeable lithium polymer battery and solar energy harvesting
		15

2	Based on Wi-Fi Certified wireless MCU with built-in Wi-Fi protocol stack targeted for Internet of Things (IoT), maximum RF transmitting power is up to +18dBm. Specs of MCU should be as below:
	
	High-performance ARM Cortex-M4 MCU with
	    – Wi-Fi Network Processor with 802.11 b/g/n Radio, Baseband, MAC, Wi-Fidriver
	    – Power-Management Subsystems with integrated DC-DC converters
	    – RAM of 256KB
	    – External Serial Flash Boot loader
	    – 2 General-Purpose Timers with 16-bit PWM mode
	    – 2 Channel 12-bit ADCs
	    – Clock sources with 40MHz and 32.768kHz
		15

Sr. No.	Specifications of IoT Lab equipments	Qty
	— Four Universal Serial Communication Interfaces (USCIs)- SPI, UART, I2C — Provides an application throughput of maximum 16Mbps — Supports Station, Access Point, and Wi-Fi Direct modes **External Flash Memory** — 8Mb Flash memory, Up to 75 MHz clock frequency — SPI Interface , Write Protection, Deep Power Down Mode **Wi-Fi network processor subsystem** — Dedicated ARM MCU completely offload the host MCU — Robust 802.11 b/g/n radio, baseband, and MAC — Powerful crypto engine for a fast, secure WLAN and Internet Connectionswith 256-bit encryption. — Supports WPA2 personal & enterprise security and WPS 2.0. — Embedded IPv4 TCP/IP stack **Security sub system** — Hardware Crypto Engine for Advanced Fast Security including AES, DES, and3DES, SHA2 and MD5, CRC and Checksum **Expansion headers for connecting external sensors** **Intelligent power system with rechargeable lithium polymer battery**	
3	SOC based device for Bluetooth Low Energy based applications. Which should be compliant to the Bluetooth 4.0 standards with Low Energy Profile support. Highly integrated System on Chip with ARM Cortex M0 microcontroller with below specs: **256 kB embedded flash program memory, 32 kB RAM** **Real Timer Counter (RTC)** **Watchdog Timer (WDT)** — 1x32 bit Timer & 2x16 bit timers with counter mode **8/9/10 bit ADC with 8 configurable channels** **Low power comparator** **Should Supports various Serial Communication Interfaces like SPI, UART, I2C** **CPU independent Programmable Peripheral Interconnect (PPI)** **External Flash Memory** — 8Mb Flash memory, Up to 75 MHz clock frequency — SPI Interface , Write Protection, Deep Power Down Mode **RF subsystem** — 2.4 GHz (2.400 to 2.4835 GHz) ISM Band RF Transceiver compliant to Bluetooth 4.0 LE standards — 250 kbps, 1 Mbps, 2 Mbps supported data rates — GFSK Modulation — Programmable Transmit power of +4 dBm to -20 dBm (in 4 dB steps) — High Receiver Sensitivity (-93dBm in BLE) — Low Power (Peak Rx -93dBm @ 13 mA, Peak Tx 0dBm @ 10.5 mA) — Ultra-low power multiple down modes **Security sub system** — AES Hardware Encryption Engine (AES Electronic Codebook Mode Encryption, AES CCM Mode Encryption) — Accelerated Address Resolver	15

Sr. No.	Specifications of IoT Lab equipments	Qty
	− Random Number Generator	
	Expansion headers for connecting above and External Sensors	
	Intelligent power system with rechargeable lithium polymer battery	
4	**Sensor board having the following listed sensors:**	15
	1. Temperature & Relative Humidity	
	2. Light Intensity	
	3. Barometric Pressure	
	4. Proximity Sensing	
	5. Buzzer	
	Interfaced with microcontroller via 12C Bus	
	Contains additional I2C connector for connecting external I2c compliant sensors to the communications modules	
5	Low power, microprocessor based embedded platform forinterfacing various communication interfaces. Communicates with the End Point Nodes through IEEE-802.15.4 RF interface and functions as the Data Terminal Unit and network controller with the below specs:	01
	Processor	
	− ARM Cortex-A9 application Processor(Single/dual/quad)	
	− CPU clock speed up to 1GHz	
	− 2D and 3D graphics co-processors	
	Power Management	
	− Advanced power management system with module wise power control	
	− Flexible power input with dynamic source switching	
	− Integrated Li-Ion battery management with solar energy harvesting capability	
	− Dynamic Voltage and Frequency Scaling	
	Memory	
	− 1 GB/2 GB DDR3 SDRAM	
	− 4GB/8GB onboardeMMC flash memory	
	− External Micro-SD card support (up to 32GB)	
	− 4Mbytes Serial Flash	
	Connectivity	
	− Onboard Gigabit Ethernet (RJ45) ports	
	− Two USB 2.0 host type A ports	
	− One USB-OTG Port	
	− One High speed CAN (DB-9) port	
	− Supports various Serial Communication protocols like SPI, I2C, UART	
	Display	
	− Onboard 7" LCD with capacitive touch panel	
	− High Definition Video Output through HDMI Port	
	Camera	
	− Supports CMOS Camera (Optional 5MP Raspberry Pi camera)	
	− Supports various USB based web cameras	
	Audio	
	− High quality Stereo audio codec	

Sr. No.	Specifications of IoT Lab equipments	Qty
	– Mobile phone compatible 3.5mm audio port for Audio In/Out **Wireless Connectivity** – High Range IEEE802.15.4 (ZigBee/6LoWPAN) Transceiver (upto 22dBm Txpower) – Dual Mode Bluetooth4.0 Connectivity (with BLE profile) – IEEE802.11b/g/n compliant WLAN (Wi-Fi) Modem – 3G Cellular Network Connectivity (GSM/GPRS/EDGE/HSPA+) – GPS/NGSS Positioning system **Onboard Sensors** – Temperature and Relative Humidity Sensor – Digital Ambient Light Sensor – 3-Axis Digital Accelerometer **Debug Interface** – JTAG connector (20-pin) for Main Processor – SWD connector for BLE SoC **OS Support** – Linux – Android – Windows* **Application** – Gateway device between the WPAN and IP network – Coordinator device for the WPAN networks – Indoor/Outdoor deployment of Internet of Things solutions – Single board computer – Unified control and monitoring console for various wireless networks	
6	J-TAG Emulator for ARM core MSL 1 ROHS Compliant	02

FORMAT FOR QUOTATION SUBMISSION
(In letterhead of the supplier with seal)

Date: _____

To: _____

SI. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
			Total Cost				

Gross Total Cost (A+B): Rs. _____ (Amount in figures)

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____
(Rupees _____ amount in words) within the period specified in the Invitation for Quotations.
We confirm that the normal commercial warranty/ guarantee of _____ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.
We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier
Name: _____
Address: _____
Contact No. _____