



NATIONAL INSTITUTE OF TECHNICAL TEACHERS'

TRAINING & RESEARCH

CHANDIGARH-160019

(www.nitttrchd.ac.in)

Phone Nos. 0172-2759500, 2759693/699, FAX: 0172-2791366, 2793893

e-mail : tendercse@nitttrchd.ac.in

e-TENDER NOTICE

e-Tenders are invited for purchasing, installation, commissioning & training of **Internet Of Things Laboratory (IoT Lab)**. The bid document can be downloaded from the website of Chandigarh Administration at <https://etenders.chd.nic.in>.

1.	Tender Publish Date	25/08/2020 at 09.00 A.M.
2.	Tender Download/Sale Start Date	25/08/2020 at 09.00 A.M.
3.	Bid Submission Start Date	25/08/2020 at 09.00 A.M.
4.	Clarification Start Date	25/08/2020 at 09.00 A.M.
5.	Clarification End Date	10/09/2020 at 05.00 P.M.
6.	Bid Submission End Date	14/09/2020 at 05.00 P.M.
7.	Last Date for Physical submission of EMD and eligible documents	14/09/2020 at 05.00 P.M.
8.	Bid Opening Date	15/09/2020 at 05.00 P.M.

The complete tender document is also available on NITTTR website at:- <http://www.nitttrchd.ac.in>.

**Director
NITTTR - Chandigarh**

INSTRUCTIONS TO BIDDERS REGARDING e-TENDERING PROCESS

1. The Bidders shall have to submit their Bids online in Electronic Format Digital Signatures. For participation in the e-tendering process, the Bidders need to register themselves at <http://etenders.chd.nic.in/nicgep>. On registration, they will be provided with a user ID and a system generated password enabling them to submit their Bids online using Digital System Certificates (DSC).
2. Tenders without Digital Signatures will not be accepted by the electronic tendering system. No tender will be accepted in physical form and in case it has been submitted in physical, it shall be rejected.
3. Bids will be opened online as per time schedule mentioned in “**Terms and Conditions of the Tender**”.
4. Before submission of online bids, bidders must ensure that scanned copies of all the necessary documents have been uploaded with the bid.
5. Director, NITTTR, Chandigarh will not be responsible for any delay in online submission of bids due to any reason whatsoever.
6. Bidders should get ready with the scanned copies of EMD as specified in the tender documents. Related EMD as per the given amount in the form of a Demand Draft in favour of the Director, NITTTR, Chandigarh payable at Chandigarh/ Electronic Payment details should be submitted to Director, National Institute of Technical Teachers Training and Research, Sector-26 Chandigarh so as to reach him on or before the last date for receiving the tenders.
7. The details of EMD specified in the tender document should be same as submitted online (scanned copies). Otherwise tender will be rejected summarily.
8. The conditional bids shall not be considered and may be outrightly rejected in the very first instance.
9. The Financial Bid through e-tendering of only those bidders shall be opened who will qualify in the technical bid and are approved by the Purchase Committee/Technical Experts.
10. **The tenderers are required to upload all self-attested copies of the relevant documents required as per Terms & Conditions and Check List, failing which their bids may be summarily/outrightly rejected and will not be considered.**

TERMS AND CONDITIONS OF THE TENDER

1. The last date and time for bid submission of tender is **14.09.2020 upto 05.00 P.M.** through e-tendering only.
2. Each tender must be accompanied with Earnest Money Deposit (EMD) in the shape of Demand Draft in favour of Director, NITTTR, Chandigarh payable at Chandigarh, valid for three months on any Scheduled Bank or, Electronically submitted through NEFT/RTGS in the following Bank Account:

Director, NITTTR Chandigarh
State Bank of India, Grain Market, Sector-26, Chandigarh
Account No: 55105008209
IFSC : SBIN0050116

3. The EMD amount is as shown below:

1.	IoT Lab	Rs. 40,000/-
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4. The sealed envelope of EMD bearing the Advertisement No. and should be clearly superscribed as **“EMD for IoT Lab ”** should be submitted in the office of Director, NITTTR, Sector-26, Chandigarh on or before **14.09.2020 upto 05.00 P.M.**
5. Those who are exempted for EMD from Government have to furnish documentary proof along with technical bid online.
6. The quantity of items and quantity indicated in the enclosed list are tentative. Director reserves the right to increase or decrease the quantity or delete some or all of the items depending on the needs of the institute.
7. The tenderer should indicate specifically the Goods and Service Tax (GST), Duties and Levies chargeable against each item if any. The Institute is entitled to custom duty exemption and concessional sales tax applicable to Educational and Research organizations.
8. The rates quoted should be F.O.R. , NITTTR Chandigarh. In case rates are chargeable at any other place, the packing and forwarding charges should be clearly mentioned indicating the mode of transport and insurance during transit.
9. The tenderer should clearly indicate the delivery period and validity period of the offer.
10. The tenderer should clearly indicate the availability of service and maintenance facilities at Chandigarh for the items quoted, or else clearly mention the nearest service center from Chandigarh.
11. The above mentioned details particularly the Goods and Service Tax (GST) number, any other levies/charges, if not quoted properly, the bid can be cancelled.

Conditional/doubtful bids will also be liable for cancellation. **[If the Goods and Service Tax (GST), any other levies/charges are not possible to enter in online tender, kindly quote your price inclusive of all taxes]**

12. Any attempt direct or indirect, to cast influence, negotiation on the part of the tenderer with the officials/authority to whom he/she will submit the tender or the tender accepting official/authority before the finalization of tenders will render the tenderer liable for exclusion from consideration.
13. The requirements of the Institute in terms of category of equipment, detailed specifications and quantity are given in SCHEDULE OF TECHNICAL SPECIFICATION / REQUIREMENT (As per Annexures I). Director, NITTTR reserves the right to change the quantity for any/all items without assigning any reason.
14. The Tender must be submitted along with the copies of:
 - EMD in favour of Director NITTTR Chandigarh
 - Manufacturers Licence or Authority from the Manufacturer (if applicable)
 - Latest Income Tax Clearance Certificate
 - GST Number from Govt.
 - Certificate of Non Blacklisting from Magistrate/ Competent Authority
 - PAN or TAN
 - Balance Sheet of last three year
 - Product Specification / Brochure
 - Tender Document duly signed
14. The Director reserves the right to reject any or all tenders without assigning any reason whatsoever.
15. The tenders will be opened on the date and time indicated in the presence of tenderers if any present on the occasion.
- 16. The tenders not accompanied by Earnest Money or incomplete in any respect will be rejected outrightly.**
17. No advance payment or payment against performa invoice will be made. Payment will be made after receipt, installation and testing of items, to the satisfaction of the authorized representative(s) of the Director.
18. In case, the item(s) is to be imported for supply, irrevocable letter of credit will be opened with the Bank. The Institute's Banker is State Bank of India, Grain Market, Sector-26, Chandigarh, Chandigarh – 160019
19. All damaged or unapproved goods shall be returned at the risk and cost of the Tenderer and the incidental expenditure thereupon shall be recovered from them.

20. This institute is recognized as R&D institute and is exempted from Excise Duty. The quoted prices must be mentioned showing Excise Duty separately.
21. Training for the operation of equipment's, if any, shall be provided by the firm free of cost to the faculty/other staff of the institute.
22. The Equipment/Machinery will be maintained free of charges during the warranty period as on the terms and condition of the tender or Annexures.
23. Instructional materials and **e-manuals** will be uploaded by the supplier free of cost.
24. Minimum of one (01) year warranty on Active items from the date of satisfactory installation with comprehensive replacement from reseller/OEM at site.
25. Tender for Internet Of Things (IoT) Laboratory should be a complete bid for all the items from the bidder ie OEM/reseller as IoT Lab project must be on a Turnkey basis.
26. The bidder must fill the Check List from the authorized signatory only with the seal of the firm. **(As per Annexure-II)**
27. There is No pre-bid meeting for this tender/bid.
28. The bidder if place with the purchase order must submit the bank guarantee as per GFR 2017 rules for all items having warranty/guarantee for the warranty/guarantee period.
29. The Courts at Chandigarh shall have the exclusive jurisdiction to try all disputes arising out this agreement between the bidder or supplier and NITTTR Chandigarh if any.

Annexure I

(EQUIPMENTS/DEVICES FOR Internet of Things [IoT] Laboratory)

TECHNICAL SPECIFICATIONS OF IoT Lab under Project SEBOT

S. No.	Technical Specification	QTY.																																
1	<p><u>IoT Commercial Developer Kit should have :</u></p> <p>Easy-to-use GrovePi+ that is compatible with Raspberry Pi B/B+/A+/2/3 Plug-n-play Grove Modules for rapid prototyping</p> <p>Package should include:</p> <table align="center"> <thead> <tr> <th>ITEM</th> <th>QTY</th> </tr> </thead> <tbody> <tr><td>• GrovePi+</td><td>1</td></tr> <tr><td>• 5 Inch HDMI Display with USB Touch Screen</td><td>1</td></tr> <tr><td>• Grove - Relay</td><td>1</td></tr> <tr><td>• Grove – Temperature & Humidity Sensor</td><td>1</td></tr> <tr><td>• Grove - Ultrasonic Ranger</td><td>1</td></tr> <tr><td>• Grove - LED Bar v2.0</td><td>1</td></tr> <tr><td>• Grove - Rotary Angle Sensor(P)</td><td>1</td></tr> <tr><td>• Grove - Buzzer</td><td>1</td></tr> <tr><td>• Grove - Sound Sensor</td><td>1</td></tr> <tr><td>• Grove - Light Sensor v1.2</td><td>1</td></tr> <tr><td>• Grove – Button</td><td>1</td></tr> <tr><td>• Grove - LCD RGB Backlight</td><td>1</td></tr> <tr><td>• Flat HDMI Male to Male Cable (1M)</td><td>1</td></tr> <tr><td>• Micro USB Cable (1200px)</td><td>1</td></tr> <tr><td>• 26 AWG Grove Cable</td><td>1</td></tr> </tbody> </table>	ITEM	QTY	• GrovePi+	1	• 5 Inch HDMI Display with USB Touch Screen	1	• Grove - Relay	1	• Grove – Temperature & Humidity Sensor	1	• Grove - Ultrasonic Ranger	1	• Grove - LED Bar v2.0	1	• Grove - Rotary Angle Sensor(P)	1	• Grove - Buzzer	1	• Grove - Sound Sensor	1	• Grove - Light Sensor v1.2	1	• Grove – Button	1	• Grove - LCD RGB Backlight	1	• Flat HDMI Male to Male Cable (1M)	1	• Micro USB Cable (1200px)	1	• 26 AWG Grove Cable	1	2
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2	<p><u>Starter Kit for LinkIt ONE should have :</u></p> <ul style="list-style-type: none"> • Starter Kit for LinkIt ONE is a theme package for IoT (Internet of Things). • Designed to help you get an idea of IoT city and turn it into reality. • Includes many of the most popular plug-n-play modules for IoT city projects. • The modules range from Dust Sensor to UV Sensor, Temperature & Humidity Sensor, and Barometer Sensor <p align="center">Part List</p>	1																																

	Dust Sensor Temperature & Humidity Sensor Pro Sound Sensor UV Sensor Barometer Sensor Light Sensor 3-Axis Digital Accelerometer ($\pm 16g$) LED Bar Servo Touch Base Shield Guide	
	<p><u>ARDUINO STARTER KIT should have :</u></p> <p>LEDs Red LED, Green LED, Yellow LED, Blue LED, RGB LED, LED Bar Graph, Segment Display 7 Segment Display, 4 Digit 7 Segment Display, LED Matrix Resistors Resistors 220, Resistors 1K-20K Module RFID Module, Potentiometer Capacitor Capacitor 0.1uf, Capacitor 10uf Keypad Keypad, Vibration switch, Switch Button Red Push Button, Blue Push Button, Yellow Push Button, Green Push Button, Big Push Button, Push Button Diodes 1N4001 Diode, 1N4148 Diode Transistors NPN Transistor 8050, PNP Transistor 8550 Battery 2X AA Battery holder, 9V Battery Cable Breadboard Power Module, L293D, 74HC595, Active Buzzer, Passive Buzzer, DHT11, Thermistor, Photo resistor, Relay Motion Motor, Servo, Stepping Motor, Stepping Motor Module, Joystick, Infra Motion Sensor Infrared Infrared Remote, Infrared Receiver, Ultrasonic Ultrasonic Ranging Module, MPU 6050 Module, LCD 1602 Breadboard Jumpers 65 Jumper wire M-M, 10 Jumper Wires F-F, 10 Jump Wires F-M, USB Cable General Board 40 Pin header, Female 40 Pin Header, Resistor Color Code Card, Plastic Box</p>	1
	<p><u>Arduino Compatible IoT Kit should have :</u></p> <p>A Complete set of IoT Starter Kit for Arduino IoT Projects with Ethernet Shield V 2_0</p> <p>4. Package Include:</p> <ul style="list-style-type: none"> • 1 x Arduino Uno R3 compatible board • 1 x Ethernet Shield W5100 for Arduino • 6 x 5mm White LED • 6 x 5mm RED LED 	1

	<ul style="list-style-type: none"> • 6 x 5mm Green LED • 6 x 5mm Yellow LED • 1 x PIR Motion Sensor • 1 x Sound Sensor Module • 1 x DS18B20 Temperature Sensor Module • 1 x Photo resistor Module • 1 x Water level detection sensor • 1 x DHT11 Temperature & Humidity Sensor • 1 x Active Buzzer Module • 1 x Servo Motor • 1 x BMP180 Module • 1 x MQ2 Smoke Sensor • 1 x Ultrasonic Sensor Module • 1 x 5v Relay Module • 20 x 220 ohm Resistors • 20 x 1k ohm Resistors • 20 x 10k ohm Resistors • 5 x 1M ohm Resistors • Solder less Prototype Breadboard • 40 x Jumper Wires(Male to Male) • 20 x Jumper Wires(Female to Female) • 20 x Jumper Wires(Male to Female) • 1 x USB Cable 																																			
5.	<p><u>Router with below technical specifications :</u></p> <p>The router should be suitable for the deployment for Carrier Ethernet, FTTx, Mobile Backhaul, and Small Cell deployments with support for TDM.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Slots per Chassis</td> <td>1</td> </tr> <tr> <td>Rack Size</td> <td>1 RU</td> </tr> <tr> <td>Max Capacity</td> <td>64 Gbps</td> </tr> <tr> <td>1G Ports</td> <td>12 (Eight 1G copper ports & 4 SFP ports)</td> </tr> <tr> <td>10G Ports</td> <td>4 Dual 1G/10G</td> </tr> <tr> <td>TDM</td> <td>With Interface Module</td> </tr> <tr> <td>Power</td> <td>AC or DC having 2 x Modular Power Supply Range : 130W - 150W</td> </tr> <tr> <td>Software</td> <td>IOS XE</td> </tr> <tr> <td colspan="2">System</td> </tr> <tr> <td>CPU</td> <td>Quad-core 1.2 GHz</td> </tr> <tr> <td>DRAM</td> <td>4 GB</td> </tr> <tr> <td>Bootflash</td> <td>4 GB</td> </tr> <tr> <td colspan="2">Service Scalability</td> </tr> <tr> <td>IPv4 Routes</td> <td>20000</td> </tr> <tr> <td>IPv6 Routes</td> <td>6000</td> </tr> <tr> <td>Multicast routes</td> <td>1000</td> </tr> <tr> <td>MAC addresses</td> <td>16000</td> </tr> </table>	Slots per Chassis	1	Rack Size	1 RU	Max Capacity	64 Gbps	1G Ports	12 (Eight 1G copper ports & 4 SFP ports)	10G Ports	4 Dual 1G/10G	TDM	With Interface Module	Power	AC or DC having 2 x Modular Power Supply Range : 130W - 150W	Software	IOS XE	System		CPU	Quad-core 1.2 GHz	DRAM	4 GB	Bootflash	4 GB	Service Scalability		IPv4 Routes	20000	IPv6 Routes	6000	Multicast routes	1000	MAC addresses	16000	1
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	Bridge domains 4000 Ethernet flow points 4000 BDI interfaces 256 IPv4 ACL entries 2000	
6.	<p><u>Edge Gateway should have :</u></p> <ul style="list-style-type: none"> • 1 Intel Atom E3827 1.75GHz + 4GB DDR3L-1333MHz (Soldered on V3 D1 CPU Stepping Motherboard) • 1 64GB Solid State Drive SATA (2280) • 1 Wireless 802.11n LAN LBEE5ZZ1EN Radio Label • 1 Mobile Broadband (WWAN) Radio Label for Edge Gateway • 1 WWAN and WLAN Host Label for Edge Gateway. • 1 Phoenix adapters kit for Edge Gateway (Connectors include RS232,1xRS422/RS485, 2xRS485) • 1 Wireless 802.11n LAN LBEE5ZZ1EN Card, ROW • 1 3G 5580 Mobile Broadband Card for Edge Gateway. • 1 Wall Mount for Edge Gateway. <p>Software</p> <ul style="list-style-type: none"> • 1 Ubuntu Core 16 • 1 EDM FI Agent Ubuntu Core 	2
7.	<p><u>BeagleBone Black should have :</u></p> <ul style="list-style-type: none"> • 1GHz Cortex-A8 processor with 512Mbyte DDR3 • Micro HDMI, micro SD, USB host + client, 10/100 Ethernet, 5V • 4GB eMMC preloaded with Debian Linux • 512Mbyte DDR3 • A true open hardware, community-supported embedded computer for developers and hobbyists. • Boots Linux and get started on development in less than 5 minutes with just a single USB cable. • Core architecture: ARM • Core sub-architecture: Cortex-A8. <p>Features:</p> <ul style="list-style-type: none"> • 3D Graphics/NEON floating-point accelerator • 4GB eMMC on-board flash storage • USB interface. • Kit contents: dev board am3358, USB cable. • No. Of bits: 32 bit. • Silicon core number: am3358. • Silicon family name: Sitara - am335x. 	2

8.	<p><u>Open Mote should have :</u></p> <ol style="list-style-type: none"> 1. Micro-Controller <ol style="list-style-type: none"> 1.1. ARM Cortex-M3 with code pre-fetch <ul style="list-style-type: none"> • Running at 16 MHz or 32 MHz • 32 Kbytes RAM • 512 Kbytes FLASH 1.2. On-chip peripherals: <ul style="list-style-type: none"> • 4x general purpose, 1x sleep timer • 1x 12 bit ADC with 8 channels • 2x SPI, 2x UART, 1x I2C 1.3. Security hardware acceleration: <ul style="list-style-type: none"> • AES-128/256/SHA2 encryption • ECC-128/256 secure key exchange 1.4. Low-power operation: <ul style="list-style-type: none"> • Active mode: 7/13mA (16/32 MHz) • LPM1: 600uA (full retention, 4us wake-up) • LPM2: 1.3 uA (16 Kbyte RAM retention, 128us wake- up, wake-up from RTC) • LPM3: 0.4 uA (16 Kbyte RAM retention, 128us wakeup, wake-up from GPIO) 2. Transceiver 1 Operates in the 2.4 GHz ISM band with support for IEEE 802.15.42006 3. Transceiver 2 (ATMEL AT86RF215) Operates in the 868/915MHz and 2.4 GHz ISM bands with support for IEEE 802.15.4g-2012 	5
9.	<p><u>Waspnote Starter Kit should have :</u></p> <p>This kit includes:</p> <ul style="list-style-type: none"> • 1 Waspnote 802.15.4 PRO uFL • 1 Waspnote Gateway 802.15.4 PRO uFL • 1 2300 mAh LiPo Battery • 1 mini USB Cable <p>The modules available for integration in Waspnote are categorised in:</p> <ul style="list-style-type: none"> - ZigBee: 802.15.4 modules (2.4GHz, 868MHz, 900MHz).Low and high power. - GSM - 3G/GPRS Module (Quadband:850MHz/900MHz/1800MHz/1900MHz) - Sensor Modules (Sensor boards) - Storage Module: SD Memory Card - GPS Module 	2
10.	<p><u>Zolertia-RE-Mote should have :</u></p> <p>The required Professional Pack includes:</p> <ul style="list-style-type: none"> • 10 x the amazing RE-Mote Internet of Things hardware. • 10 x Multiband antenna. • 10 x White Zolertia RE-Mote enclosure. • Phidgets (x2) and Ziglet (x1) connectors in each Re-Mote. • 6 x micro USB cable. 	2

Annexure II

CHECK LIST DULY FILLED IN TO BE ATTACHED WITH PRE-QUALIFYING- CUM-TECHNICAL BID FOR THE MACHINERY/EQUIPMENT/SERVICES FOR NITTTR CHANDIGARH

- | | | |
|----|--|--------|
| 1. | Whether EMD in the shape of Demand Draft valid for three months, for the asked-for amount attached? | Yes/No |
| 2. | Whether tender document duly signed by authorized signatory Attached? | Yes/No |
| 3. | Whether a list of institutions / organizations where your firm has supplied this item / equipment / instrument / services recently, is Attached. | Yes/No |
| 4. | If you are an authorized agent / dealer / distributor of the firm / company / manufacturer and whether authority Letter as issued by them in your favour attached? | Yes/No |
| 5. | Whether Technical brochure of the equipment/services attached? | Yes/No |

Note :- If Yes, must attach all relevant documents.

**Signature of authorized signatory
with seal of the firm**