



NATIONAL INSTITUTE OF ELECTRONICS
Ministry of Science & Technology
Government of Pakistan
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TENDER NO. 05/2019-NIE

MISC. EQUIPMENT, COMPONENTS, PARTS AND ACCESSORIES FOR INTERNET OF THINGS (IOT) RF BASE INDOOR POSITING SYSTEM – COMMUNICATION LAB

S. #	Name of Item	Make	Qty	Unit Price	Total Price
1	<p>Smart Beacons with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • Communication: Bluetooth Low Energy wireless technology 2.4GHz RF • Sensitivity: -93dBm • Bluetooth: Nordic Semiconductor nRF51822 • Data Rates: 250kBs, 1Mbs, and 2Mbs • Memory: 256KB flash 16KB RAM • Battery: 2 x 1.000mAh CR2477, Replaceable • Protection: IP-50 • Flame resistance : Safe - V0 flammability class • Protocol: Eddystone and iBeacon • Imported • Part No. SB16-2/Equivalent 	Kontakt.io/ Equivalent	10		
2	<p>Location Beacon Devkit with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • NO. of Beacons: 3 per Divkit • Communication: Bluetooth Low Energy wireless technology 2.4GHz RF • Bluetooth: Bluetooth 5.0 • Range: 150 meter • Supported use-cases: proximity, presence verification, indoor location • Protocol: Eddystone , iBeacon • Built-in sensors: accelerometer, Temperature , ambient light ,magnetometer • Imported 	Estimote/ Equivalent	2		
3	<p>CPU with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • Intel core i7 8th Generation • Processor :3.6GHz 64-bit Processor • RAM :16 GB • Hard disk: 1TB HDD • Graphics Card: NVidia 2GB • WiFi: Wi-Fi Card • Windows: 10 • Standard optical mouse • Standard keyboard 	Dell/ Equivalent	2		

4	Raspberry Pi 3 Essential Kit Model B+ RS with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Raspberry Pi Case • SanDisk micro SD card 16GB/Equivalent • Power Supply 3A 	Any Reputed Firm	2		
5	Raspberry Pi Zero W Essential Kit with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Raspberry PI Zero W Case • SanDisk Micro SD Card 16GB/Equivalent • Power Supply 2A 	Any Reputed Firm	2		
6	Arduino Pro Mini with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Microcontroller :ATmega328 * • Standard Cable 	Any Reputed Firm	5		
7	Arduino mega 2560 rev3 with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Microcontroller :ATmega2560 • Standard Cable 	Any Reputed Firm	2		
8	Bluetooth Modules with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Typical -80dBm sensitivity • Up to +4dBm RF transmit power • Low Power 1.8V Operation • 1.8 to 3.6V I/O • Part No. HC-05/Equivalent 	Any Reputed Firm	5		
9	D1 mini with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Microcontroller :ESP-8266EX • Flash 4M bytes • Wifi Enabled • Compatible with MicroPython, Arduino, nodemcu 	WEMOS Electronics/ Equivalent	10		
10	ESP32-DevKitC V4 with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Protocol: 802.11 b/g/n/e/i, Bluetooth • Part No. ESP32-DevKitC/Equivalent 	Espressif Systems/ Equivalent	5		
11	DG419 with following specifications <u>Specification</u> <ul style="list-style-type: none"> • 8 pin IC • Through hole 	Any Reputed Firm	50		
12	74HC4053 with following specifications <u>Specification</u> <ul style="list-style-type: none"> • multiplexing and demultiplexing • Through Hole IC 	Any Reputed Firm	50		

13	74HC4051 with following specifications <u>Specification</u> <ul style="list-style-type: none"> Through Hole IC 	Any Reputed Firm	50		
14	PIC16F627 with following specifications <u>Specification</u> <ul style="list-style-type: none"> 18 Pin Through Hole IC 	Any Reputed Firm	20		
15	Soldering Tips for SMD with following specifications <u>Specification</u> <ul style="list-style-type: none"> Compatible with KADA 852 	Any Reputed Firm	5		
16	Electrical Extension Board with following specifications <u>Specification</u> <ul style="list-style-type: none"> Length: 3 Meter 10 AMP 250volt Export Quality 	Any Reputed Firm	2		
17	USB MicroSD/ SDHC/SDXC Reader with following specifications <u>Specification</u> <ul style="list-style-type: none"> Super Speed USB 3.0 interface 	Transcend/ Equivalent	2		
18	Micro SD Card with following specifications <u>Specification</u> <ul style="list-style-type: none"> Memory : 16GB 	Sandisk/ Equivalent	3		
19	HDMI Male to VGA Female Adapter Video Converter Cable with following specifications <u>Specification</u> <ul style="list-style-type: none"> Length : 5 ft Quality:; 1080P, imported 	Any Reputed Firm	2		
20	OTG to USB Male Cable with following specifications <u>Specification</u> <ul style="list-style-type: none"> Length : 2ft Quality: Imported 	Any Reputed Firm	5		
21	Fluke 92b Scope-Meter Battery Pack with following specifications: <u>Specification</u> <ul style="list-style-type: none"> Voltage: 4.8 Volts Capacity: 3000mAh Chemistry: Ni-MH - Nickel Metal Hydride Terminal: 4 Wires to 6 Pin Connector 	Any Reputed Firm	1		
22	Transistor with following specifications <u>Specification</u> <ul style="list-style-type: none"> Collector-Emitter Volt (Vceo): 45V Collector Current (Ic): 0.8A hfe: 100-250 @ 100mA Power Dissipation (Ptot): 625mW Current-Gain-Bandwidth (ftotal): 210MHz 	Any Reputed Firm	50		

	<ul style="list-style-type: none"> Type: NPN Part No. BC337/Equivalent 				
23	<p>Power Supply Module with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> Isolated The ultra-thin, subminiature The full voltage input (90 ~ 264 vac) Low power consumption, green environmental protection, no-load loss < 0.1 W AC-DC 220V to 5V Step-Down Part NO.HLK-PM01/Equivalent 	Any Reputed Firm	20		
24	<p>Diode with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> Voltage : 1000V Current : 1A Part No. 1n4007/Equivalent 	Any Reputed Firm	50		
25	<p>Diode with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> Voltage : 1000V Current : 1A Part No. 1n4001/Equivalent 	Any Reputed Firm	50		
26	<p>Diode with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> Reverse Voltage : 5V Package : Through Hole Power 1W ZENER DIODE 5V 	Any Reputed Firm	50		
27	<p>Diode with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> Reverse Voltage : 5V Package : SMD Power 1W ZENER DIODE 5V (SMD) ZMM5V1 	Any Reputed Firm	50		
28	<p>Diode with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> Reverse Voltage : 12V Power 1W Zener Diode 12v 	Any Reputed Firm	50		
29	<p>High Voltage High Current Darlington Transistor IC with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> 7NPN 1:1 16DIP Package : Through Hole Collector Current (Max): 1A Collector Voltage: Emitter Breakdown (Max) : 50V Part No.ULN2003A/Equivalent 	Any Reputed Firm	20		

30	<p>Power Module with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • Volt : 12V • Current : 2A • Power : 24W • AC-DC ISOLATED POWER BUCK CONVERTER • Miniature module • 220V TO 12V step down switch power module 	Any Reputed Firm	20		
31	<p>Bridge Rectifier with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • Current : 2A • Volt : 1000V • Part No. ASEMI 2W10/Equivalent 	Any Reputed Firm	50		
32	<p>Bridge Rectifier with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • Peak Reverse Voltage : 1000V • Max RMS Bridge Voltage : 700V • Max DC Blocking Voltage : 1000V • Forward Rectified Current : 10A • Maximum Reverse Current : 5μA • Forward Volt Drop per Element : 1.1V • Part No. BR1010/Equivalent 	Any Reputed Firm	10		
33	<p>Bridge Rectifier with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • Current : 50A • Volt : 1000V • Part No. KBPC5010/Equivalent 	Any Reputed Firm	10		
34	<p>Barrier Terminal / Block Connector with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10AMP • 300 VOLT • 2 Pin • PCB Mount Screw connector 	Any Reputed Firm	50		
35	<p>Barrier Terminal / Block Connector with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10AMP • 300 VOLT • 4 Pin • PCB Mount Screw connector 	Any Reputed Firm	20		
36	<p>Barrier Terminal / Block Connector with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10AMP • 300 VOLT • 8 Pin • PCB Mount Screw connector 	Any Reputed Firm	20		

37	<p>PCB Connector / Barrier Terminal with following specifications:</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10AMP • 300VOLT • 2 Pin • PCB Mount (Male & female complete connector) 	Any Reputed Firm	50		
38	<p>PCB Connector / Barrier Terminal with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10AMP • 300VOLT • 4 Pin • PCB Mount (Male & female complete connector) 	Any Reputed Firm	20		
39	<p>PCB Connector / Barrier Terminal with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10AMP • 300VOLT • 8 Pin • PCB Mount (Male & female complete connector) 	Any Reputed Firm	20		
40	<p>Fuse Holder with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10A, 250V, 5x20mm • Fuse Holder PCB Mount 	Any Reputed Firm	50		
41	<p>Fuse with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 3A • Fuse for fuse holder 5x20mm 	Any Reputed Firm	20		
42	<p>Fuse with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 5A • Fuse for fuse holder 5x20mm 	Any Reputed Firm	20		
43	<p>Fuse with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 10A • Fuse for fuse holder 5x20mm 	Any Reputed Firm	20		
44	<p>DC MOTOR with following specifications</p> <p><u>Specification</u></p> <ul style="list-style-type: none"> • 12 volt • High speed • High Torque • 12 volt DC Motor 	Any Reputed Firm	2		
45	<p>Wifi Development Board with following specifications</p>	Any Reputed Firm	10		

	<p>Specification</p> <ul style="list-style-type: none"> • WI-FI MCU ESP8266 integrated and easy to prototyping development kit. With cable and other accessories • Part No. ESP8266 V3 Lua CH340/Equivalent 				
46	<p>Boost Converter Module with following specifications</p> <p>Specification</p> <ul style="list-style-type: none"> • Dc Adjustable Step Up Boost Power Supply Converter Module • Part No. XL6009/Equivalent 	Any Reputed Firm	20		
47	<p>Boost Converter Module with following specifications</p> <p>Specification</p> <ul style="list-style-type: none"> • Input voltage 3V ~ 32V • optimum operating voltage range is 5 ~ 32V • Output voltage 5V ~ 35V • Step-up Power Module DC-DC Boost Converter • XL6009/Equivalent 	Any Reputed Firm	20		
48	<p>Relay with following specifications</p> <p>Specification</p> <ul style="list-style-type: none"> • Operating Voltage : 12VDC • Relay specs : 30A & 240Vac • Solid State Power Relay • Part No. JQX-15F T90/ Equivalent 	Any Reputed Firm	50		
49	<p>Relay with following specifications</p> <p>Specification</p> <ul style="list-style-type: none"> • Operating Voltage : 5V • Omron solid state relay 240V 2A & 240 Vac • size: 25*34*21mm/0.98*1.35*0.82" • Part No. OMRON SSR G3MB-202P / Equivalent 	Any Reputed Firm	50		
50	<p>Relay with following specifications</p> <p>Specification</p> <ul style="list-style-type: none"> • Operating Voltage : 5VDC • Relay specs : 20A & 240Vac • Solid State Power Relay 5PIN T74 • Part No. SRA-05VDC-CL/ Equivalent 	Any Reputed Firm	50		
51	<p>Arduino Due with following specifications</p> <p>Specification</p> <ul style="list-style-type: none"> • Microcontroller :AT91SAM3X8E • Digital I/O Pins :54 (of which 12 provide PWM output) • Analog Output Pins:2 (DAC) • Standard Cable 	Any Reputed Firm	1		
52	<p>Measuring Tape with following specifications</p> <p>Specification</p> <ul style="list-style-type: none"> • Length : 30 Meter 	Any Reputed Firm	1		

53	Measuring Tape with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Length : 8 Meter • Material : Steel 	Any Reputed Firm	1		
54	RF Transmitter With Receiver Kit with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Operating voltage: DC5V • Receiving frequency: 433MHZ • Transmitting power: 10mW • Converge distance :200-300 meters • Transfer rate: 8KB/S or higher • Part No. XD-RF-5V/Equivalent 	Any Reputed Firm	2		
55	WIFI Extender with following specifications <u>Specification</u> <ul style="list-style-type: none"> • Wi-Fi 802.11g/b/n • Range 1KM • 2.4G Wi-Fi Transmission Rate:300 Mbps • Imported 	Any Reputed Firm	1		



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OF THINGS (IOT) RF BASE INDOOR POSITINING SYSTEM – COMMUNICATION
LAB**

TERM & CONDITIONS:

1. Price to be quoted in Pak Rupees on (FOR) free home delivery basis.
2. As the equipment/ items to be procured are based on high tech technology therefore for competitive bidding single stage-two envelopes bidding procedure shall be adopted.
 - (i). the bid shall be comprised a single package containing two separate envelopes, containing separately **“TECHNICAL PROPOSAL”** and **“FINANCIAL PROPOSAL”**.
 - (ii). the envelope shall be marked as **“TECHNICAL PROPOSAL”** and **“FINANCIAL PROPOSAL”** in the **bold, properly sealed and with legible letters** to avoid any confusion.
 - (iii). initially the envelope marked with **“TECHNICAL PROPOSAL”** shall be opened.
 - (iv). the envelope marked with **“FINANCIAL PROPOSAL”** shall be retained in the custody of NIE without being opened.
 - (v). upon evaluation of technical proposals, NIE shall publically open the financial proposal of the technically accepted bids only. The financial proposal of the bids found technically rejected shall be returned un-opened to the respective firms.
3. The bids of the firm operating from their residential address and P.O. Box number will not be considered.
4. Tender number must be specified on the left corner of the bidding envelope.
5. The rates should be valid for at least **“90”** days from the date of tender opening.
6. The offered equipment/ items must be brand new of the original manufacturer and covered under normal warranty/guarantee with necessary back-up support.
7. The bid must be supported with necessary catalogue/ brochure indicating make, model detailed specification and country of origin of the offered equipment.
8. The scope of supplies includes supply of equipment, installation, testing and commissioning of equipment and if necessary training to NIE Personnel's.

9. The financial bid should reflect at sight the following costs separately for fair comparison purpose.
 - i. Unit Price of equipment.
 - ii. GST, if applicable.
10. Conditional/ ambiguous bids will not be entertained.
11. Earnest money @ 2% of quoted prices (Refundable) must be accompanied with tender in shape of a crossed bank draft/ pay order in favour of the Director General NIE.
12. E/M of the successful bidder will be refunded upon submission of prescribe performance/ bank guarantee to NIE and the same shall be released after satisfactory completion of warranty/ guarantee period of the supplied goods.
13. The successful bidder shall provide 5% performance/ bank Guarantee of the total order value of the order to NIE for satisfactory execution of the supply order.
14. The bid found to be lowest evaluated bid shall be accepted only either overall whole tender/items base or each item wise.
15. The estimated delivery/ completion period of supplies/ work must be specified in the quotation.
16. In case of any delay in supplies of ordered items, the successful bidder shall bound to inform NIE to prior to "15" days of the ending of last date of delivery, so that necessary approval regarding extension in delivery period may be obtained from Director General NIE otherwise at the time of payment to firm a penalty @ 2% per month of the total order value will be charged from the successful bidder without any notice.
17. Tender of all items may be awarded either to a single party or can be divided among different parties depending upon their professional capabilities and competitiveness in prices individually.
- 18. No advance payment will be made.**
19. NTN and GST number must be mentioned on the quotation along with providing copy of its documentary evidence, failing which bid will not be considered.
20. Payment will be made on submission of the prescribed bill in duplicate through crossed cheque OR through Inland L/C after satisfactory completion of supply order and our acceptance thereof, which includes installation, testing, commissioning of the equipment and training etc. The bill presented on the letterhead of the firm will not be accepted for payment purpose.
21. As per Government Policy payment to the firm is subject to the registration of firm name in **Active Tax Payer List of FBR**, otherwise payment will be stopped till the appearance of vendor name in ATL of FBR.
22. Income Tax/ Sales Tax etc. will be deducted from bill as per Govt. Rules.

23. Last date for receipt of the tender in the Procurement Section of NIE is **February 18, 2019 up to 11:00 hours**. Technical proposals of the received firms shall be opened on the same day at **11:30 hours** in the presence of those who wish to be present. Tenders received late will not be considered in any case.
24. The Director General NIE reserves the right to accept or reject any or all tenders in part or whole, or change the quantity of tendered items as per provision of PPRA Rules.

SUHAIL AHMED SHAMI
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