

Terms & Conditions

1. The quotation must specify the period within which the supply could be effected from the date of receipt firm orders.
2. Quotation received after the due date mentioned on the reverse will not be considered.
3. Your quotations should be for materials strictly in accordance with the specifications shown. In case you are offering substitutes state clearly the exact specification etc, of the materials offered Drawing sketches or any other technical data should be submitted separately.
4. The prices quoted should clearly specify charges for delivery of the goods to destination indicated overleaf.
5. The prices quoted should include all packing costs and it will be assumed that packing materials (cases etc..) are non-returnable unless otherwise stated.
6. Sales tax or any other taxes if applicable should be shown separately giving the full rate of taxes for each items giving ex-incidence of such levies.
7. The Director reserves the right to accept the whole or part of any quotation without assigning any reason and the lowest or any quotation, will not necessarily be accepted, and the Director's decision shall be the final.
8. Samples must accompany the quotation when so specified or within two days when asked for later.
9. If it is discovered that the materials supplied are not exactly according to the specification, the entire stock will be rejected.
10. We reserve the right to inspect the goods offered at any stage of manufacture / supply at your premises.
11. Any dispute arising out of or relating to this Enquiry shall be deemed to have arisen in Madras and is subject to adjudication of the Madras Courts.
12. Rates quoted once will remain firm for that particular dealing.
13. The quotation should be kept valid for a period of 60 days from the date of opening for acceptance.
14. Payment will be made after confirmation on receipt of the materials in good condition at this Institute (normally within 30 days.) Advance payment will not be entertained at any circumstances.
15. Printed conditions of the firm sent along with the quotation form if any, shall not be binding on us.
16. In case of Printing the Proof should be got approved before final strike.
17. Materials should be supplied at this institute in good condition.
18. Price quoted by the suppliers accepted by the Director is final, and no deviation therefrom will be accepted without the Director's agreement in writing.
19. If the rates are under D.G.S. & D. Please specify the same clearly enclosing necessary documents.

NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH

Taramani P.O., Chennai – 600 113.

(Government of India, Ministry of Human Resource Development)

No.NITTTR/EE&CE/ClassroomAutomation/2017-18/

Date:22.01.2018

To

As per list enclosed (10 nos.)

Delivery required by :

immediately

QUOTATION DUE DATE

(a) Please send your quotation within the due date on sealed envelope on or before:

Date: 02.02.2018

(b) Delivery required at : NITTTR, TARAMANI, CH-113

Sl.No.	Description of Items	Material Code	Approximate Quantity Required
1.	Wireless Sensor Based Class Room Automation using Zigbee and Wifi (Details of the system requirements and specifications are enclosed as Annexure)		Part of the classroom to be automated

Note:

- GST No. must be specified in your quotation
- Specify warranty period,
- Specify educational institute discount
- Sales tax and any other charges should be mentioned separately in each item
- Reference No. and Date should be written on the cover.
- As per Ministry of Finance, Govt. of India Notification No. 45/2017-Central Tax (Rate), dt. 14th Nov 2017, we are eligible for concessional GST @ 5%

Cover should be addressed:

Name: **Associate Professor & Head i/c – Electrical Electronics & Communication Engineering**
National Institute of Technical Teachers Training and Research,
Taramani P.O., Chennai – 600 113.

(For terms and conditions please see overleaf)**DIRECTOR**

Detailed specifications:

Wireless Sensor Based Class Room Automation using Zigbee and Wifi

Description of Wireless Sensor Based Class Room Automation using Zigbee and Wifi :

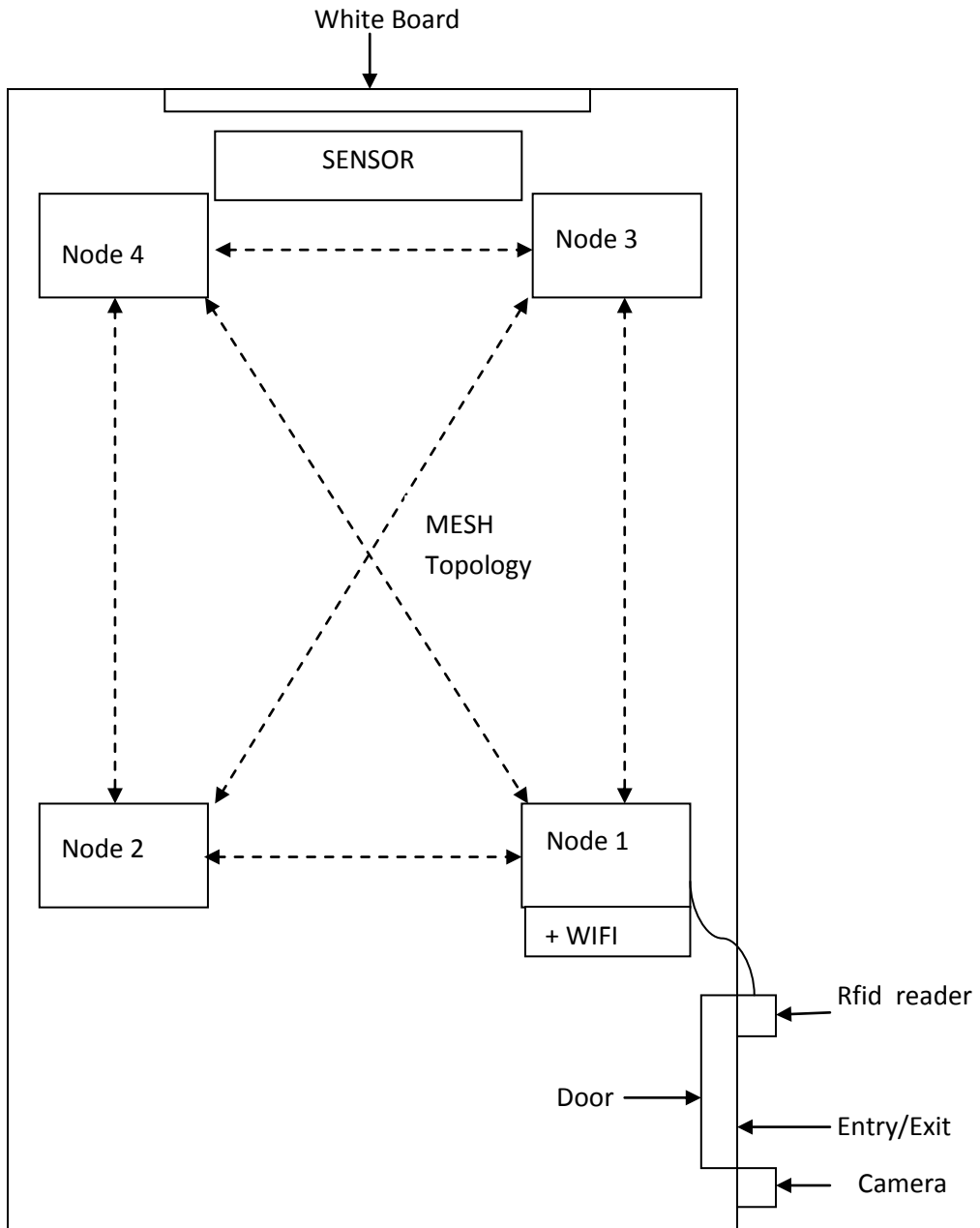
We aim at the development of self sustained automated intelligent class room automation system capable of capturing videos, recognizing pre-defined Image, displaying appropriate text message on the display panel, controlling of lights and fans depending upon the strength of participants attending the classes, WEB based monitoring class room activities. Also as an added facility the participants can develop program and load into the system and can control LEDs, Switches and ADC without affecting the classroom automation system.

For development of such a system, three sub systems which shall be the scope of supply of the vendor have been defined as follows.

1. Face recognition and display text message
2. Interactive WIFI system
3. Node to Node communication with Zigbee protocol and control of appliances

A broad view of the expected system is depicted in the following figure.

Existing classroom layout :



System requirements:

Electrical appliances to be controlled

Total no. of fluorescent lamps: 8 nos.

Total no. of LEDs: 12

Total no. of Fans: 8 nos.

Projector: 1 no.

Air Conditioners: 3 nos.

Face Recognition at classroom entrance door

RFID based enrollment system (Registration, Instructions & Feedback Automation Process):

No. of participants: 35 nos.

Node Specifications:

Built in Cortex M3, 512 KB Flash, 64 KB RAM, 4 Nos of serial ports (UART 0, UART 1, UART 2, UART 3)

- Built in 2 channel signal conditioner with 22 bit ADC
- Built in SD- MMC card slot Capable of 4GB Data storage
- Built in Wireless module slot for Zigbee communication

Specification

1. Point-to-point, point-to multipoint, peer-to-peer, and mesh
 2. Operating frequency band ISM 2.4 GHz
 3. Transmit power out put 63 mw
 4. RF data rate 250 000 b/s
 5. Indoor range Up to 300 ft. (90 m), up to 200 ft(60 m) international variant
 6. Outdoor range Up to 2 miles (3200 m), up to 5000 ft (1500 m) international variant
 7. Data throughput upto 35000 b/s
 8. Supply volt 2.7 - 3.6 V
- Built in Relay drivers with Relays for lighting system
 - Built in Motion sensor
 - Built in Temperature sensor
 - Built in USB port for ISP programming
 - Built in RJ45 port for LAN network communication
 - Built in Wifi Module for node 1 only

Specification

1. Serial Data Interface UART up to 1 Mbps, SPI up to 6 Mbps
2. Configuration Method API or AT commands
3. Frequency Band ISM 2.4 GHz
4. ADC Inputs 4 (12-bit)
5. Digital I/O 10
6. Form Factor Through-Hole, Surface Mount
7. Antenna Options Through-Hole: PCB (Embedded), U.FL, RPSMA, Integrated Wire; SMT: PCB (Embedded), U.FL, RF Pad
8. Operating Temperature -30° C to +85° C
9. Dimensions (L X W) Through-Hole: 0.960 in x 1.297 in (2.438 cm x 3.294 cm); SMT: 0.87 in x 1.33 in x 0.12 in (2.20 cm x 3.40 cm x 0.30 cm)

Wireless Lan

10. Standard 802.11b/g/n
11. Data Rates 1 Mbps to 72 Mbps
12. Modulation 802.11b: CCK, DSSS; 802.11g/n: OFDM with BPSK, QPSK, 16-QAM, 64-QAM
13. Transmit Power Up to +16 dBm
14. Receiver Sensitivity -93 to -71 dBm
- Power Requirements
15. Supply Voltage 3.14 - 3.46 VDC
16. Transmit Current Up to 309 mA
17. Receive Current 100 mA
18. Power-Down Current <6 μ A @ 25° C

- Built in RF ID reader/writer for node 1 only
 1. ISO 15693, 18000-3, Tag-it™ HF-I Compatible
 2. Read UID/SID of Up to 15 Tags Simultaneously
 3. 13.56MHz Reader/Writer
 4. Built-in Antenna: Up to 4-Inch Read Range
 5. FCC/IC/CE Modular Approval in Place
 6. Permanent Unique Serial Number Accessible Via USB
 7. Integrated Pass/Fail Beeper
 8. USB Port Powered from Host PC (USB 1.1/2.0 Compatible)
 9. USB Drivers Provided for Windows XP, XPx64, Server2003, 2000, 98, ME
 10. Software Development Library Support for Visual C++/Visual Basic

The Raspberry Pi Camera Board Features

- Fully Compatible with Both the Model A and Model B Raspberry Pi
- 5MP Omnivision 5647 Camera Module
- Still Picture Resolution: 2592 x 1944
- Video: Supports 1080p @ 30fps, 720p @ 60fps and 640x480p 60/90 Recording
- 15-pin MIPI Camera Serial Interface – Plugs Directly into the Raspberry Pi Board
- Size: 20 x 25 x 9mm
- Weight 3g
- Fully Compatible with many Raspberry Pi cases