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Staff Locating and Notifying System using RFID technology

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Abstract: ***In global perspective, it is a difficult job to contact human beings in big institutions in spite of the prohibition in mobile network. Presently, global system positioning and Zigbee are employed in locating and tracking. But these are expensive. Previous analysis and development for indoor localization includes infrared, wireless LAN etc., But these suffers from limited accuracy. On the other hand, there is a growing interest in RFID technology. It is often leveraged to locate staff/student in a reasonable, power efficient and user friendly manner. Indoor location tracking system allows you to track the location with the facilitate of RFID tags and RFID readers. RFID is an acronym for Radio Frequency Identification and is a fast and reliable means for locating an individual. In addition to this, we are proposing an alerting system in different parts of a huge institution having a common INTERCOM. This can absolutely reduce the interferences of individuals. For this we are installing LEDs which glows while there is a message for him/her by the one who calls.***
Keywords: RFID tags, RFID reader and INTERCOM

I. INTRODUCTION

Generally huge institutions like reputed colleges and esteemed concerns used to meet a lot of problems and hindrances by different means. Among them, locating an individual and delivering a message to a particular person in a crowd without disturbing the duty of others are challenging tasks.

The first issue that is concerned with the hunting of an individual can be easily made by calling them through mobile phones. But it becomes negligible at mobile network prohibited areas. There, a system that could monitor the location of a person should be initiated. That should not affect the normal mechanism of the firm.

The second outbreak is to notify the staff concerned instead of distracting other staffs engagements. Let\ us consider, there is a common intercom inducted for a group of professors having separate cabins. At that instant, if the department's head needs to call a particular professor for having a discussion. He/she might call through INTERCOM. Just by hearing the ring one cannot decide to whom the notification will be. So there might be chances for other professor instead of the corresponding to attend. This brings diversion in their mind. To avoid these perplexities, we need to install an alerting system in order to avoid all these interferences.

If the proposed ideas could be implemented then these tedious issues will be overcome and smooth mechanism shall take place everywhere.

II. LITERATURE SURVEY

P.Karthika et al., proposes "Indoor Location Tracking System Using RFID Technology". This paper proposes a method that enables indoor location tracking of staff/student by utilizing RFID technology. In this paper they used RFID technology with Zigbee for data transmission while locating a person in big institutions in a mobile prohibited area. A RFID tag is provided to each person and a RFID reader is fixed in each room while crossing that room it will receive the data and send the information to the display unit via zigbee. But Zigbee is used only for a certain distance. In addition to this many zigbees are required.

Felix C.P.Hui et al.,proposes an method of "RFID-based Location Tracking System Using a Peer-to-Peer Network Architecture". This system employs active RFID technology to estimate the location of users/objects, and ZigBee to build a P2P network for communication purposes. With the use of the ZigBee protocol, the network can be formed easily and new nodes can be joined using a simple procedure. Data can be exchanged. A P2P network with RFID readers is formed based on ZigBee. This process becomes tedious and the range of zigbee is limited and it is expensive too.

Vaidehi.V et al., This paper proposes "Person Tracking Using Kalman Filter in Wireless Sensor Network". In this paper they are using Wireless Sensor Network for detecting and tracking a person. In an organization where employees possess unique Radio Frequency Identification (RFID) tags, a WSN node detects the presence of a person using a PIR sensor and the identity of the person is obtained from the RFID tag. The accuracy of tracking a person in a WSN is limited due to the sensor's detection capabilities.

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Lijia Wang et al., proposes an method of "RFID and Vision Based Person Tracking of a Mobile Robot Using Improved Compressive Tracking". This paper presents a person detection and tracking method for a mobile robot by fusing the data from Radio Frequency Identification (RFID) and stereo camera. The RFID system detects a person wearing an ID tag and a course position estimate of the person is obtained. The stereo camera is used for person detection based on the compressive sensing theory.

III. PROPOSED METHOD

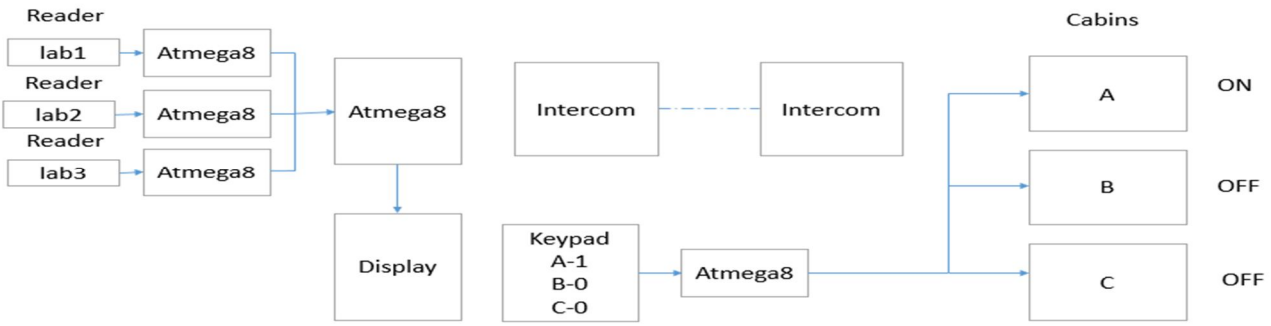


Fig 1.Block diagram of the proposed method

The proposed block diagram portrays the mechanism of the proposed idea. Here, we are providing the RFID tags to all the individuals whose presence need to be monitored. The lab entrances consists of the RFID readers that should be placed in such a manner in order to avoid reading the value if the person provided with RFID crossed the lab instead of entering.

After initiating the RFID readers, an arduino controller board is connected with each reader. In this we have used ATMEGA 8. The arduino is loaded with the program regarding to transmit the entry of a RFID sensing signal. The RFID tags consists of a coil similarly RFID readers constitute a coil. These coils when gets closer they create some signals that results in mutual induction. As a result, the reader reads the unique code in various tags and send the signal to the arduino.

Every common place i.e., labs are furnished with various readers and arduinoes. These arduinoes are labelled as SLAVE arduinoes. All these slaves are then connected to a MASTER arduino through wired technology.

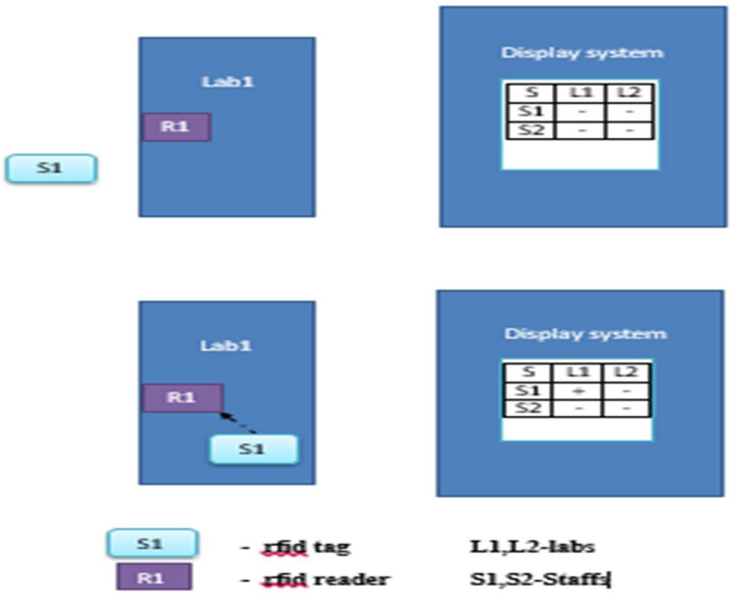


Fig2.

As Zigbee and GPS are extravagant wired technique is more reliable. As we are involved in dual challenges we need two wires, one for transmitting and the latter for receiving. If the problem is solitary one can use the neutral wire for sending signals. It will be present all over the edifice.

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The MASTER arduino is connected to the display. When it receives the signal, the display will show the presence of the tags. This is done by programming the MASTER arduino. The monitor displays the location of individuals in different parts which can be easily recognized.

The Fig2. shows that initially a reader is initiated at the entrance of the lab1. When a RFID holder crosses the reader, it creates mutual induction and the signal is recorded in the slave arduino which is then sent to the master arduino. The display connected with that then show the location informations.

The second dispute is that the management needs to convey an information to an individual in a group of members. For this we are installing an alerting system in different parts near to an individual. If one calls through an INTERCOM, he/she would press the responsible individual's nearby number. This warns the person who is needed to attend the call. Here also we are using programmed arduino boards and wire to send signals.

IV. CONCLUSION

The proposed idea of staff locating and alerting system using RFID technology is more reliable. It could minimize the hindrances that are used to arise in every huge institutions. This technology is cost effective and simple to maintain. It consists of just RFID tags that are tied with the individuals so it does not create any annoying situation. While there is an urgent conferences by the higher officials its even tougher to search with conventional methods like making a call in mobile prohibited area. This could surely reduce the hurdle. The advanced technologies like Zigbee and GPS are also potent but they are spendy. Also, our posed concept makes the caller easy to monitor first and then call them. This adds an advantage for the RFID holders in getting alerted before without the interferences of others.

REFERENCES

[1] P.Karthika, J. Harriet Rathna Priya, A.Rathinavel Pandian3 "Indoor Location Tracking System Using RFID Technology" International Journal of Engineering Research and Reviews Vol. 3, Issue 1, January-March 2015.
[2] Felix C. P. Hui, Henry C. B. Chan, and S.H. Fung "RFID-based Location Tracking System Using a Peer-to-Peer Network Architecture" Proceedings of the International MultiConference of Engineers and Computer Scientists 2014 Vol I, march 2014.
[3] Vaidehi.V, S.Vasuhi, K.Sri Ganesh, C.Theanammai, Naresh Babu NT, N.Uthiravel, P.Balamuralidhar, Grish Chandra, "Person Tracking Using Kalman Filter in Wireless Sensor Network" ICoAC 2010.
[4] Lijia Wang1,2, Songmin Jia1, Xiuzhi Li1, Shuang Wang1 "RFID and Vision Based Person Tracking of a Mobile Robot Using Improved Compressive Tracking" International Conference on Information and Automation Yinchuan, China, August 2013.
[5] Po Yang, Wenyan Wu, Mansour Moniri, and Claude C. Chibelushi "Efficient Object Localization Using Sparsely Distributed Passive RFID Tags" IEEE transactions on industrial electronics, vol. 60, no. 12, december 2013.
[6] Rusen Oktem, Nergiz Ercil Cagiltay An RFID Based Location Finding and Tracking with Guidance
[7] K. Chawla, G. Robins, and L. Zhang, "Object Localization using RFID", IEEE International Symposium of Wireless and Pervasive Computing (ISWPC 2010), Modena, Italy, May 2010, pp. 301-306

BIOGRAPHIES



MITHUNA.S is pursuing Bachelor of Engineering in the discipline of Electrical and Electronics Engineering at Knowledge Institute of Technology, Salem, under Anna University, Chennai, India. She has presented number of technical papers in symposium. She is acting student member of various clubs and forums like Robotics and Intelligence Machines (RIM) Club, Green club, i-can Club, Instrumentation and Control Engineers (ICE) club. She was selected for Grand finale of the ROBO ZEST'14 competition in IIT (Bombay) which was conducted by Robospecies Technology Pvt.Ltd during the year 2014. She also published an International Journal and won prizes for project contest. Presently she is doing minor research works on various fields like Power Electronics, Biomedical Instrumentation and Robotics etc. She got more awards and prizes for her extracurricular activities.



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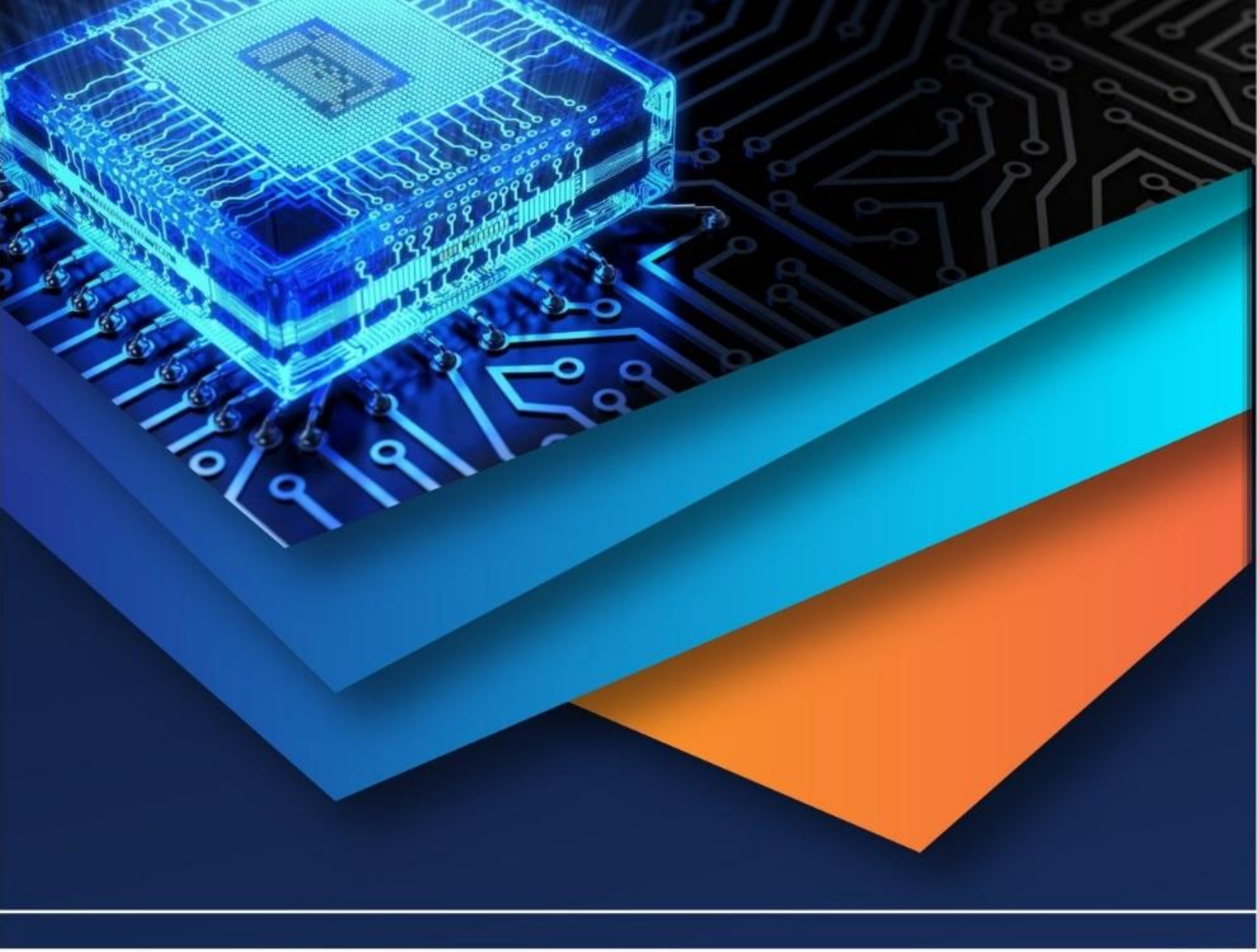


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