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| Project Id: 21116  Project Title: To Minimise the energy consumption for Communication Protocol using IOT. | |
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| Short description of the project:  Wireless sensor network have a wide range of applications in various fields. One of the most recent emerging applications are in the world of Internet of Things (IOT), it allows inter-connection of different devices through the Internet. Hence, limited battery power is the major rule of WSNs as compared to mobile ad-hoc network; it affects the longevity of the network. A lot of research has been focused on to minimize the energy consumption of the WSNs. In this project, the existing low-energy adaptive clustering hierarchy clustering protocol is  Modified by introducing a threshold limit for cluster head selection with simultaneously switching the power level between the nodes. The proposed modified LEACH protocol outperforms as compared to the existing LEACH protocol to enhance the WSN lifetime. It is found that the proposed algorithm performs better in terms of stability period and network lifetime in different scenarios of area, energy and node density. | |
| Aim/Objective of the project:  To Minimize the energy consumption for Communication Protocol using IOT. | |
| Methodology (the necessary software/tool or process)  In this project exiting LEACH protocol is modified by using threshold for cluster selection. At the same time it will maintain the power level of the nodes. Node will be deployed, distance among the node will be calculated, cluster will be created and the energy consume from each node will calculated. The project will be implementing in NS2 or MATLAB. | |
| Possible outcome of the project:   * After calculating the distance among the nodes and energy consume by each node, all the non cluster head nodes transmit data to their cluster head. * After calculating the randomized rotation of cluster heads among the sensors   Cluster Head receives this data and performs signal processing functions on the data and transmits data to the base station. | |
| Importance of the project in engineering aspect:  It enables the object to be sensed and also control it remotely, which enables better interaction of physical world with computers. This project is also suitable for modeling in low-cost and with low-complexity solutions.  It is found that the proposed communication protocol performs better in terms of stability period and network lifetime in different scenarios of area, energy and node density. | |
| Innovativeness if any (why the project is different from others):  In this project we get a chance to work on wireless sensor network which is very demanding technique that would be very frequently used in future innovation as it can improve the efficiency of the process and it a better one. | |
| Reference :    L. Yadav and C. Sunitha, "Low energy adaptive clustering hierarchy in wireless sensor network (LEACH)", Int. J. Comput. Sci. Inf. Technol., vol. 5, no. 3, pp. 4661-4664, 2014.  R.P. Mahapatra and R.K. Yadav, "Descendant of LEACH based routing protocols in wireless sensor networks", *Procedia Comput. Sci.*, vol. 57, pp. 1005-1014, 2015. | |