

Smart Environments using Wireless Sensor Networks in Developing Countries

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As technology emerges over the decades, Wireless Sensor Network (WSN) has come to the spotlight for its unattained potential and significance. WSN composed of numerous cheap sensor nodes allows users to accurately monitor the remote environment by intelligently combining the data from the discrete sensor nodes. WSN is an excellent tool for extracting data from the environment and enable the reliable monitoring of a variety of environments for applications that include surveillance, machine failure diagnosis, weather forecast, chemical/biological detection. Consequently, billions of dollars are being committed to the research and development of sensor networks in order to address the operational challenges that are still associated with the large-scale implementation of sensor networks. Without having the proper blueprint, no construction manager could put up any building according to architect's intention. Similar approach applies almost in everywhere for developing any new system in the society.

This presentation is mainly focused on the design level issues provided with a framework for WSN to be applied on various systems. In case of Southeast Asia, flood and water level monitoring, traffic monitoring, and environmental monitoring are among the systems having much potential to be aided with WSN, which would lead the development of a smart environment. In another case, a research project is ongoing that focuses on the design and implementation of a sensor network for agricultural management in developing countries, with a special emphasis on the resource-poor farmers of semiarid regions. Unlike land line and wired Internet connections, mobile devices are widely spread in developing countries. These mobile devices can be useful for the collaborating with WSN. The proposed frameworks can be carried out in highly perspective projects like wireless sensor networks for flood, cyclone and other natural disaster controlling and warning in developing countries.