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A SURVEY ON POWER MANAGEMENT IN WIRELESS SENSOR NETWORKS

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Abstract

A Wireless Sensor Network (WSN) consists of a number of tiny sensor nodes deployed over a geographical area. Each node is composed of a radio-transducer, a small micro controller and a battery for energy source. Every node is a low power device that integrates computing, wireless communication and sensing capabilities. Sensor nodes are able to sense physical environmental information and process the acquired data locally or send them to one or more collection points usually referred to as sinks or base stations. The base station or sink collects data from all the nodes, and them analyzes their data to draw conclusions about the ongoing activity in the area of interest. A main difficulty for many sensor network applications is finding out the most efficient way of conserving the energy of the power source. In any case of the powering method energy conservation is of major importance for sensor networks. Power consumption will be the primary metric to design a sensor node. Sensor nodes are mainly powered through batteries which give a limited lifetime and often cannot be replaced nor recharged, due to environmental or cost constraints. Generally energy is a limited resource and must be used sensibly. Energy saving is one critical issue for sensor networks. So need to increase the lifetime of wireless sensor networks by using power management techniques to reduce the power consumption. This paper gives information about the survey of efficient power management in wireless sensor networks.

Keywords : Wireless Sensor Networks, Power Management, Dynamic Power Management, Sentry Based Power Management, Power Saving Techniques, Cross Layer Design, Open Systems Interconnect, Sensor Management Protocol.