

Sajja Atikij 2009: Design and Development of a Wireless Sensor Network with Energy Efficient MAC Protocol. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Associate Professor Natavut Kwankeow, M.Eng. 138 pages.

Concept efficient design and implementation of wireless sensor network has become a hot area research in recent years, due to the vast potential of sensor networks enable application that connect the physical world to the virtual world. By environmental monitoring system have develop in hardware and software by advance technology allow cost of manufacturing sensor nodes continue to drop and increase feature of device.

The environmental monitoring system can automatically work in field without the need of an operator. After each measurement, the sensor node transmit all data to gateway through short-range network at least 1 year in 24 hour per day by design and implement wireless routing protocol with low power consumption. Users can retrieve outputs, by using a web browser with an almost real-time response. The system also stores measurement data in non-volatile memories to avoid the lost of data in case of unavailable network connection.

Student's signature

Thesis Advisor's signature

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