

ABSTRACT

Wireless Sensor Networks (Wireless Sensor Network) is a wireless network consisting of the source of many sensors (nodes) with the ability of detection (sensing), computing capability and wireless communications. Each sensor collects data from the area that can be monitored temperature data, sound, vibration, pressure, and movement. This data is then sent back to the base station (BS). Data is transmitted from node to node to the base station.

In this Final Project, the authors analyze the topological structure is formed through the standard procedure for analyzing the performance of IEEE 802.15.4 and IEEE 802.15.4 in a heterogeneous simulation environment. Simulation in NS2 performed for three types of network topologies with different network density. To cover all the scenarios, the authors use a scenario scatternet topology, and tree topology piconet beacon-enabled and allows experiments performed on different traffic types.

From experiments know that the greater the value of BO (Beacon Order) and SO (Superframe Order), a longer transmission interval beacon packet, also the longer time required for all device nodes again to synchronize with the coordinator.

Key word : WSN (wireless sensor network), IEEE 802.15.4, Beacon Order, Superframe Order.