

Impact of the deafness problem on clock synchronization in a wireless sensor network

ABSTRACT

Observations of natural phenomena are considered to be the best information source of spontaneous synchronization. Natural phenomena tend to match wireless sensor network (WSN) responses closely. Such synchronization is vital for the proper coordination of power cycles for energy conservation. A large number of fireflies employ the principle of pulse-coupled oscillators for light flash emission to attract mating partners. With respect to WSNs, the nodes are generally unable to afford packet transmission and reception simultaneously, thus preventing complete network synchronization. This paper presents a literature overview concerning the impact of the deafness problem on clock synchronization in a WSN. Data transmission based on synchronization can also be ensured through the optimization of energy usage periodic data capturing in a WSN. This study serves as a useful information source of clock synchronization to assist WSN researchers and novices in obtaining a better understanding of the impact of the deafness problem on clock synchronization and to enable them to promote effective designs and systems that address this problem.

Keyword: Wireless sensor network; Clock synchronization; Deafness problem