

Abstract

Forest fires are one of the disasters that can cause much harm to the entire ecosystem on earth. Recent data showed an increase in the number of fires spread in June - September 2013, which became the most occurrences of fires in a month since 2001. There something needed for monitoring system that can observe forest fires in real time mode. One of alternative solution is use a wireless sensor network utilizing the 802.15.4 standard as a network transmission for forest fire detection. Implementing such a system is very precise in forest area. 802.15.4 network has advantages for this system including long battery life and supports data transmission at a low data rate.

This research aims to obtain the level of performance from the prototype system, assessed from end-to-end delay, RSSI strenght formed in the process of data transmission The test results show that the delay exists between the sensor nodes to the web server relies on the existing obstacle during the transmission process. The choosing of channel and frequency is very influential on the resulting delay. The resulting delay in the transmission of data between the web server and the end user depends on the bandwidth and the traffic on the network path.

Keywords: forest fires, monitoring, notification, wireless sensor networks, 802.15.4, performance