

ABSTRACT

Generally, forest fires are frequent in the region of peatland. The occurrence of forest fires would result in adverse effects for people living in areas that have the potential occurrence of forest fires. Losses incurred as a result of forest fires is certainly very influential on people's lives around both financially and in terms of health. Forest fires are often only discovered after the fire that burned the land or gardens has spread widely or already burning up and leaving a thick smoke. It would result in economic losses for the people whose lands are burned, and bad for the health of people who inhale the smoke of the forest fires. Therefore, the obtained solution is use as a wireless sensor monitoring and fire detection as an early prevention indicate of forest fires. By using wireless sensors to minimize the costs incurred compared with using wired sensors making it more efficient to the extent of forest that will be reached by the sensor.

By using a system of Wireless Sensor Network (WSN) to address the problem of the extent of the forest making it possible to collect data from the sensors changes caused by fires from specific points. From the sensor, the data obtained will be determined by the microcontroller whether a condition is detected potentially cause a fire. Then sends the data via a web-based network to the user's PC.

The use of this sensor node system can be used for approximately four hours with high accuracy temperature sensor where the error of 0,5°C. Maximum distance sensor node for transmission data by node gateway is as far as seven meters. The use of sensor takes nine minutes so the sensor can be stabilized to detect after the first time enabled.

Keywords: forest fires, monitoring, Wireless Sensor Network (WSN)