ABSTRACT

DESIGN FOREST FIRE DETECTION SENSOR SYSTEM

Forest is an area which consisting of plants and various kinds of ecosystems that live there. Forests become a pillar of economic improvement for the surrounding community, beside that forests have an important meaning for world life because forests are the lungs of the world. Every year the forest area in the world decreases. The main causes are fire and illegal logging. Forest fires can be caused by natural conditions and also can be caused by human activities for new land clearing.

Monitoring and prevention of widespread forest fires currently uses routine patrol methods, observation through the watchtower and through monitoring satellites. However, some of those methods have weaknesses.

In this final project, a system that is capable of detecting fires using the DHT22 sensor and MQ-135 sensor is capable of measuring parameters such as temperature, humidity and carbon dioxide levels. And from these three parameters a node using the fuzzy logic method is able to determine the current state of the forest such as safe, standby or danger. The test found that the accuracy of the temperature sensor was 94.57% and the humidity sensor was 97.33%. And the fuzzy logic method used has an accuracy of 99,024%. And also the fire detection system in the forest has the desired output for each condition, namely safe conditions, standby conditions, and danger conditions.

Keywords : *Node, Fuzzy Logic, DHT22 sensor, MQ-135 sensor*.