Abstract

Leakage Liquefied Petroleum Gas (LPG) is very dangerous and would be very detrimental to many parties. Leakage from one LPG cylinder will cause a huge explosion. Fires caused by leakage of LPG gas is now not only in residential but has a lot going on in the storage agent tubes - LPG. In the LPG agencies are hundreds to thousands of tubes that are put side by side, if one tube leak, is feared to trigger tubes - tubes that another leak also to cause fire.

To implement the problems occurred, was made an LPG leak detection system prototype using Multi Sensor-based Machine - to - Machine (M2M). M2M concepts are useful for detection automatically without any human intervention. Where only between machines and machines that exchange information and produce an accurate information without any direct human intervention.

The system was built using LPG sensor (MQ - 6) by utilizing the M2M platform that is OpenMTC. Where the user will be able to directly monitor in real time through an application that is connected directly to the OpenMTC. Each sensor is used to detect levels of gas will be in charge in the room and when there is a leak each sensor will interact to determine the location of the leak. Based on test results and analysis of the system built, sensor MQ - 6 can be placed at a height of 100 CM. With these heights, the sensor is able to detect up to a distance of 75 CM. By using a three-node system sensors can detect in the room with the length and width of 270 CM 120 CM in the absence of areas that were not detected by the sensor. To determine the location of the leak, the system analyzes the data based on the frequency readout when the value range sensor readings 0.6 volts to 1.2 volts, and in determining the location of leaks increasingly distant source of the leak to the sensor, the greater the value of the frequency of reading data.

Keywords : LPG gas leakage, M2M, MQ-6, Multi Sensor Node, Zigbee