

## **ABSTRACT**

The system provide a information about safety management and fire potential in the warehouse manufacturing activities. This information is used as a reference in determining the condition and level of security that occurs on the warehouse. Security monitoring system for smart warehouse is a warehouse which is integrated with communication network using electrical equipment that can be controlled and monitored or accessed remotely. In this research will be developing the system through parameter determination, device construction and device testing. In several condition in warehouse to be parameter that are lock-unlock door, smoke, in-out worker and worker movement. The device has several component such as Raspberry PI 3, RFID, Magnetic Door Sensor, MQ-2 Gas Sensor, PIR Sensor, Buzzer, LED, Raspberry GPIO Extender, PCF8591 and the software for support the device is consist of Python IDE, MySQL, PhpMyAdmin, and Blynk. The testing will be done in mockup as warehouse, the testing is carried out until get the enough data, the test consists of open-close door of mockup, tap the RFID card to scanner in mockup, make smoke in mockup, make a movement in mockup. The methodology divided by 3 phases, there are initial phase, assembly phase and testing phase. The first phase includes getting information related security monitoring, sorting the information to make list of component system, and buy the component based the list. Second phase consist of checking the component, create a design and assembly the component based on design, and make the program for support the activities of system. The last phase is upload and run the program, waiting the calibration of sensor and collect the data result. The result from the testing system are the entry and exit data is collected by 31 data, it consist of name, time entry and time exit. This data is recorded in database raspberry, and to get the data just download the csv file from phpmyadmin via laptop.

The data smoke condition, open/closed door condition, movement worker, and status safe/unsafe condition will be displayed in the realtime in smartphone with the word of “No Smoke Detected” or “Smoke Detected”, “ Door is Open” or “Door is Closed”, “Motion Detected” or “No Motion Detected”, and “Safe Condition” or “Unsafe Condition”. Based on the testing the device is working correctly with the parameter that has been configure.

Keyword : security, monitoring, system, warehouse, Raspberry PI, IoT.