ABSTRACT

Efficiency in the Big Indonesian Dictionary is accuracy (effort, work) in carrying out something that does not waste time and energy. Efficient technology is expected to be able to become a control and security system that can minimize the occurrence of unwanted things in private homes.

With these problems, the idea emerged to use the S-LUCY Smart Switch tool which is a useful tool to make it easier for users to set the lights on or off automatically and manually. The addition of existing PIR sensors and LDR sensors aims to detect environmental conditions so that the lights can turn on automatically according to input from the sensor.

This S-LUCY smart switch has the concept of the Internet of Things (IoT). With this system, the use of lights is more efficient because the lights will turn on at the appointed time. To ensure that the use of smart switches produces an IoT device that can work efficiently, the system will be tested with 6 parameters, namely tool functionality testing, power supply testing, sensor testing, manual system testing, automated system testing, stress testing. and subjective testing.

From the measurement results, it is found that the smart switch works efficiently with functionality testing, it is found that the lamp can be lit in several conditions, the power supply test obtained a fairly stable output voltage with an error of 1.00% with no load and 0.20% with a load, sensor testing was carried out on the PIR sensor which states the sensor can detect human movement with a distance of approximately the same as the sensor specifications, namely 0-5 meters and the LDR sensor with a comparison using a lux meter produces an error of 2.10%, manual and automatic system testing in accordance with environmental conditions, and subjective testing, it was found that the average use of smart switches was efficient.

Keywords: *Efisiensi, Internet of Things, Smart Switch*