

## **ABSTRACT**

*The Surgery room is a special unit in a hospital that functions as a critical care area. Proper control of temperature and humidity is essential to prevent bacterial growth and ensure patient and operating room safety. The Surgery room temperature and humidity requirements are stipulated in the Decree of the Minister of Health of the Republic of Indonesia where The Surgery room temperature requirements are 19°C-24°C and humidity is 40% - 60%. This study uses DHT11 and DHT22 sensors to measure temperature and humidity, using NodeMCU ESP32 as a data sender and Blynk as a remote information receiver. This research also adapts ISO 17025 and QoS as a guarantee of better research quality. This system planning aims to compare temperature sensors to get sensor recommendations to create an operating room that complies with existing government regulations and to test the DHT11 sensor whether is sufficient to meet the required requirements or not sufficient. Based on the DHT-11 sensor and DHT-22 sensor tests which are accurate in measuring temperature and humidity with standardized ISO 17025 test quality measurements with a DHT-11 bias value of 4.34% and a DHT-22 sensor of 4.20% and DHT-11 Accuracy value 104.3% and DHT-22 93.6%. Based on testing the QoS delay value of 85.1 ms is in the very good category because the standard value is <150 ms.*

*Keywords: DHT11 Sensor, DHT22 Sensor, ISO 17025, QoS.*