ABSTRACT

The cleanliness of a swimming pool is an important aspect in the consideration of the community when choosing a swimming pool. Regular checks are necessary to maintain the cleanliness of the swimming pool by measuring the parameters present in the pool, as specified in the Ministry of Health Regulation No. 32 of 2017. One of the parameters measured is the Oxidation Reduction Potential (ORP). Measurements were conducted using three samples of swimming pools with depths of 135 cm, 80 cm, and 60 cm, using an ORP meter and an ORP sensor. The results would then be transmitted using LoRa communication. Measurements on the samples before adding chlorine resulted in sample a having a value of 323 mV, sample b at 304 mV, and sample c at 288.5 mV. Among these measurements, sample b had the best result, with an error value of 0.689%. Measurements after adding approximately 60 grams of chlorine to the samples showed that sample a had an ORP sensor reading of 723 mV, sample b at 730 mV, and sample c at 728 mV. Among the three measured samples, sample c yielded the best result with the smallest error value of 2.413%. These results would be transmitted using LoRa communication and displayed on the Antares IoT platform. The data transmission using LoRa would measure the network quality through the Received Signal Strength Indicator (RSSI) parameter. Data transmission can send data over a distance of approximately 20 km. The RSSI test results improve when approaching 0. One of the factors affecting the RSSI test results is the hilly terrain with dense vegetation along the data transmission path.

Keywords *: Swimming pool, Oxidation Reduction Potential (ORP), Long Range (LoRa)*