ABSTRACT

Indonesia ranks fifth in Asia for nonrevenue water (NRW), attributed to water theft and inaccurate meter readings due to manual processes[1]. According to the BPPSPAM report on the performance of water utilities (PDAM) in Indonesia, the national average nonrevenue water is still quite high, reaching approximately 32.80%[2]. Given these circumstances, there is a need for a device that can provide information on water usage automatically. An IoT-based automated water meter reading device could serve as a solution to this issue. Equipped with an LC sensor capable of reading metal disks on mechanical water meters, the device converts this information into a volumetric value with an accuracy exceeding 98%. To enable remote monitoring of water usage, the device incorporates a LoRa radio connectivity component using LoRaWAN class A protocol, boasting a connectivity range of over one hundred meters. Powered primarily by batteries, the device has a limited operational lifespan, exceeding 5 years. Furthermore, the device is equipped with an extra feature in the form of a motorized valve to regulate the flow of water.

Keywords : IoT, *nonrevenue water*, *water meter*