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Implementation of a Scalable Long-Range Wireless Based Model for Water Loss Monitoring

Water companies experience challenges in detecting water loss and undertaking reliable and efficient water audit. Consequently, mitigation of these incidences of water loss, as well as auditing of water distribution is difficult, largely uncoordinated and inherently cumbersome. A Long-Range (LoRa) based technology prototype is designed and implemented to enable detection of water loss and audits to be performed remotely and affordably. This study enabled the design and development of a long-range Wireless Sensor Network (WSN) model based on IEEE 802.15.4g LoRa standard. This study reviewed the technological challenges, architectural and logical design for the implementation of a scalable long-range model to detect losses in real time. The study used the PPDIOO methodology towards achieving and implementing network design lifestyle. The designs prototypes were set-up in a testbed, monitored, reconfigured and adjusted for efficiency and applicability. The study contributed to the body of knowledge in design of applicable water systems architectures

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