ABSTRACT

Regional Drinking Water Company (PDAM) is a business entity responsible for providing clean water supply to the population. Owned by the local government and overseen by local executive and legislative authorities, PDAM are spread throughout Indonesia with a significant number of customers. Currently, PDAM implements a postpaid system for payments. In this system, customers can use water first, and then the water meter will calculate the amount of water used by the customer for monthly billing. However, this payment system has weaknesses for PDAM because many customers often do not pay their bills on time, resulting in substantial financial losses for PDAM.

HydroSync is an innovative water meter product that implements a prepaid token-based payment system. This product is supported by a website and application of the same name, HydroSync. The website serves two types of users: admins and customers. Admins can register customers and manage customer data, while customers can purchase tokens. The HydroSync application allows users to purchase tokens and upload the tokens to the water meter using a *Bluetooth* connection. This system is equipped with a server connected to a security module, a hardware device that generates a 20-digit token when a website or application user makes a token purchase.

Despite the various solutions available, the HydroSync product has several issues that need to be improved. For instance, it lacks the capability to monitor the remaining water *volume* on the meter through the application or website. Another problem lies within the website itself, such as the absence of a direct communication system (live chat) between admins and customers. Additionally, the battery in the meter is still not long-lasting, with a lifespan of only about two weeks, which can inconvenience users. The product casing also lacks waterproof capabilities due to the non-waterproof material used in its design. Furthermore, the token reading can be enhanced by improving the encryption and decryption algorithms to ensure better security, similar to electricity tokens. Therefore, it is hoped that future developments can improve the performance and reliability of the HydroSync product, meeting user needs and increasing market satisfaction.

Keywords: HydroSync, Token, Website, Application, PDAM, Security Module