Abstract

Currently, concerns about health conditions continue to grow, especially for the elderly population. That way technology to monitor health conditions at a low cost and reliable is the solution needed. One of the technologies used is Machine to Machine (M2M) communications which are utilized on the Internet of Things (IoT) for low-cost health monitoring.

The results of the analysis and implementation obtained the average value of the encryption time using a biological key with 3 different scenarios, namely 27.58 ms, 5.00 ms, 6.99 ms, and 3,26 ms. The average value of the biological key decryption time with 3 different scenarios. namely 1.59 ms, 0.54 ms, 0.31 ms, and 0.15. The biological key avalanche effect value is 41.80%, the biological key correlation value is 0.04, the biological key average delay is 127 ms, and the throughput value the biological key is 65300 bps.

So, the biological key generation method can be used as an option for use in the WBAN network. This biological key generation utilizes sensors and data that are usually used in WBANs such as ECG sensors to generate a unique key without the need to generate new data to be used as a key on devices with low computing power.

Kata Kunci: *encryption, security, AES, biometric technique.*