Embedded Devices Security Based on ICMetric Technology

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Abstract

An intelligent wheelchair application is required which is equipped with the MEMSs which are magnetometer, gyroscope, and accelerometer sensors. The generated process of ICMetrics number is heavily based on magnetometer, gyroscope, and accelerometer sensors. In addition, this number can be utilised to provide the identification of device. Our proposed system passed through three phases. The first phase is bias reading that was extracted from MEMSs (gyroscope, magnetometer, and accelerometers) sensors; whereas, in the second phase, ICMetric number is generated by using the sensor bias readings that was extracted in the first phase. Therefore, this number is non-stored and can be utilised to provide identification of device. In the third phase, the security system is tested/evaluated to measure its effectivity. In other words, it is tested with dataset that was extracted from the trace file of ns-2. In this phase, performance metrics are calculated, which are rate of error, confused metrics, and accuracy.

Keywords