Performance Evaluation of M2M Protocols Over Cellular Networks in a Lab Environment

The cost and size reduction of sensors and actuators makes possible to imagine much more Internet of Things scenarios with a large number of devices exchanging high volume of messages in possibly isolated areas where a cellular network probably will be used as infrastructure. This way machine-to-machine (M2M) protocols must be chosen much more carefully because of sensible constraints like real time data exchange, low power consumption and the network unreliability which causes a high packet loss. For these purpose it is necessary to evaluate different kinds of M2M communication protocols considering their behaviour in different Cellular network scenarios, since their characteristics might interact in many ways with the network scenarios and generate unexpected performance results. In this paper will be evaluated three M2M communication protocols which are OPC UA, CoaP and MQTT, also will be evaluated three Cellular network technologies which are EDGE (2G), UMTS (3G) and LTE (4G).