Abstract

The aim of this research is to optimize the size of data sent from IoT devices on the lithium battery monitoring system to the server. In the research, a comparison of the data size of several scenarios was carried out consisting of the use of the HTTP and MQTT protocols as well as the application of data mapping in the JSON data format. The research was simulated using Raspberry Pi as an IoT device and Wireshark software for data measurement. The measurement results show that changing the protocol to MQTT and using data mapping succeeded in reducing the size of data sent from IoT to the server by 13.62%, 73.77% and 87.62% for the HTTP data mapping, MQTT JSON and MQTT data mapping scenarios respectively compared to the HTTP JSON scenario. Reducing the data size causes reduced network costs in the lithium battery monitoring system because network costs follow the size of the data.

Keywords: IoT, HTTP, MQTT, *data mapping*