explanation, randomly moved to another exhibit or moved around the area and left the vicinity at their own will. At each exhibit a smartphone was set up to receive and record the BLE tag messages as a location-aware M2M gateway. The smartphones deployed at the exhibition area sent the information collected from the BLE tags to a central database server for recording. The experiment used 12 smartphones as M2M gateways.

The analysis of the recorded data yields some interesting results of the exhibition itself such as the most popular exhibition item. When multiple smartphones receive the same signal from a single BLE tag, it was considered that the particular BLE tag is connected with the smartphone receiving the strongest signal. The signal strength can be measured by the Received Signal Strength Indicator (RSSI) of the BLE tag periodic advertisement packet. Using this methodology, it was possible to order the smartphones according to the number of maximum RSSI value BLE tags associated with it throughout the exhibition time period from 9 AM to 5 PM. The exhibit associated with the smartphone that has the highest number of maximum RSSI BLE tags can be considered as the most popular exhibit. Similarly 2nd and 3rd popular exhibits can also be identified. Further analysis also provide an insight into the participant behaviour at the exhibition such as the average time spent at each exhibit and the entire exhibition, the order of exhibits visited and the most crowded time of the day at the exhibition as well. These results show the importance and vast analytical possibilities for the corporate sector as well as the benefits for the end users.

Keywords: Bluetooth smart network; IoT architecture & communication; IoT test bed; Internet of Things