

ELECTRIC VEHICLE AND MOBILITY PARKING MANAGEMENT

IOT USE CASE SHEET

Internet of Things (IoT) technology based networks provide a solution to collect data from thousands of vehicle locations for analysis, alerting and insight into operational processes. IoT is proven to increase operational efficiency and deliver cost savings through automation in our Cities and Rural environments.

Traditional Parking services use systems that are not able to provide greater insights into Electric Vehicle parking trends and patterns. Councils, local authorities and car park owners are looking to IoT to provide a cost-effective, scalable way to implement real time remote monitoring and reporting on the use of vehicle parking bays for standard, EV and mobility parking cases.



THE CHALLENGE

Councils and local authorities across the UK are faced with significant challenges to deliver core services that meet the needs and expectations of their citizens with increasingly limited financial and operational resources.

For public EV chargepoint deployments and associated parking services, councils are looking for cost effective, scalable ways to implement real time remote monitoring and reporting on the use of spaces, ensuring availability while boosting customer satisfaction.

Traditional parking systems typically lack real time reporting for greater insight into parking and bay usage trends and patterns, rely on separate, manual ticketing systems, and lack scale to support new models for short stays, time and emissions-based, disabled and EV charger parking deployments.

New technology that delivers solutions to resolve the above at increasing scale to solve the availability and other challenges need to be found!

THE SOLUTION

An answer to the EV availability and parking challenges can be found by using IoT technology solutions. Deployment of wireless sensors over a wide area in bays/spaces devices, and combining telemetry data from parking 'events' with chargepoint management systems and applications allows the following benefits to be realised:

- Real time reporting and alerting on parking space 'events' (car parked up, car move off) generates data about availability which can be shared.
- Scale of deployment and cost efficiency is possible through use of Low Power Wide Area Networking (LPWAN) wireless technologies that connect battery powered parking sensors in their thousands with battery expectancy of 5+ years.
- Integration of IoT Sensor Data with third party systems such as parking permits can afford highly efficient, targeted enforcement, and advanced analytics/trend analysis to determine usage capacity pinch points in the estate, and new opportunities to collect revenue (for example through parking applications that offer emissions and time-based tariffs).
- Blue badge holders and other special groups are supported in more scalable and efficient ways with the integration of unique identifiers in their vehicles, paired with applications showing their bay location.

BENEFITS FOR EV INFRASTRUCTURE

- Increased operational efficiency through better workload management and targeted enforcement.
- Highly cost-efficient, Return on Investment model.
- Boost in driver / customer experience satisfaction through increased information about space availability and reduction in lost time to find a parking space.
- Real-time information about parking occupancy increases parking revenues, avoids parking violations in disabled and loading / unloading areas, monitors real use of restricted areas for taxis, improves driver (and customer) experience reducing time loss.
- Analytics for patterns of behaviour to adapt traffic and surveillance resources for better mobility planning.

IoT Solution Components

- **Parking Sensors:** Detect cars parked up in bays with up to 99% accuracy.
- **Wireless Connectivity:** Our IoT Connectivity as a service including LoRaWAN and NB-IoT are used to gather data from multiple thousand battery powered sensors in bays and spaces.
- **Data:** Securely transmitted to central IoT platforms and for analysis and integration with third party systems and applications.



Parking Sensor



IoT Gateways



EV Parking and Mobility Dashboard

USE CASE APPLICATIONS



Unmarked Bays/Spaces

IoT sensors can be placed 3 meters apart to monitor availability on streets.



Disabled Bays

IoT sensors with Bluetooth authentication of drivers.



EV Chargers

Combining data with IoT sensors to validate charging events and help to prevent unauthorised hogging of bays.

Monitoring spaces in Cities, hospitals, public areas, shopping malls, universities, sporting facilities and many more.