Smart tracking for micro-mobility in smart cities

E-bike and e-scooter fleets have stormed from city to city in just two years, re-defining urban mobility and addressing some of the most vexing transportation challenges in cities congestion, emissions, air quality, and inconsistent access to transit. Research shows the sustainability benefits clearly: if the share for e-bike riding rises to 11%, we could see a 7% decrease in CO2 emissions from the urban transport sector by 2030 – potentially accounting for over 50% of urban trips in the US and 70% in cities like London

Behind the scenes, micro-mobility solutions are complex. They connect a diversity of stakeholders – government and city councils, product manufacturers, and platform operators – interoperability is important. Vehicle operators need a reliable, long-lasting solution to locate and retrieve lost devices or to re-distribute them to places of greater usage. Their success lies in the simplicity they present to the users, who will only change their behaviours if the services offered are significantly more convenient, trustworthy, and reliable. Those who sign up to use e-scooters also offer up a great deal of personal and sensitive data, including billing information and other involuntary analytics, such as location and individual vehicle information.

Urban mobility is re-mapping the way we experience our cities

Kigen's customer is pioneering the development of tracking and analytic solutions for managing and servicing large fleets of micro-mobility urban transportation. The customer needs to support a unified experience for customers whilst meeting the regulatory, security and safeguarding requirements of multiple cities, across many regions. This required the simplified manufacture of a low-power and compact cellular IoT enabled device that can be personalised to meet local needs and associated carrier profiles, allowing them to offer a locate and retrieve functionality, reporting a lost asset and collect utilisation statistics to drive adoption. ▶

Kigen's integrated SIM (iSIM) operating system (OS) combined with its strong partnerships within the module and chipset ecosystem provided a route to simplifying secure manufacture and late-stage personalisation eliminating the need for multiple product development routes and inventory management. To meet the needs of citizen data security, it was essential that these edge devices are treated with the most robust security protocols – implementing chip to cloud security with **GSMA**'s IoT SAFE security scheme. This approach offers further assurances on ease of data cloud integration and interoperability.

The results

By simplifying the manufacture of cellular connected micro-mobility vehicles to offer location tracking, pattern tracking and further usability features in a compact, low power and ready to connect out of the box solution, vehicle companies now have a solution that can scale seamlessly. To ensure that the early benefits of greening our cities are realised, operators of fleets and city councils can take advantage of well-established security frameworks ensuring data of the city, its consumers and all IoT that serves them is cost effective, secure, and tamper-proof.

Kigen's iSIM OS and solutions are built with high-growth markets of massive IoT, such that enterprises can leverage strong security even at the most constrained size, power, and cost envelopes. Through greater integration of components, longer battery life and tamper-proof protection can allow to safeguard IP and innovation for manufacturers. Much as large fleets of urban vehicles, Kigen's iSIM OS is enabling edge devices in consumer lifestyle products, in mobile medical healthcare devices as well as point of sale devices. This in combination with standards-based security scheme such as IoT SAFE is a perfect combination to support the market's growth and strengthen the social contract with users. ◼

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