REAL-TIME BEACH OCCUPANCY MONITORING WITH CELLULAR ROUTER

HIGHLIGHTS

- JUMA is a company specializing in Smart City solutions that integrate artificial intelligence, IoT, and Big Data to enhance urban life. In collaboration with CODIPRO, a local distributor of advanced telecommunications solutions, JUMA developed an advanced real-time beach occupancy monitoring system aimed at improving visitor experience, ensuring public safety, and promoting sustainable tourism practices.

- To enable this system across remote coastal locations, reliable and resilient connectivity was a must. A rugged cellular router provided stable, high-speed data transmission from dispersed IoT sensors and AI-powered cameras to city dashboards, mobile apps, and digital signage.

- The Teltonika RUT951 industrial router was chosen as the core of the connectivity setup—a powerful 4G router built for harsh environments. With dual SIM and automatic failover, it ensures uninterrupted LTE connectivity even in areas with weak or unstable signals.and quick deployment in industrial manufacturing settings.

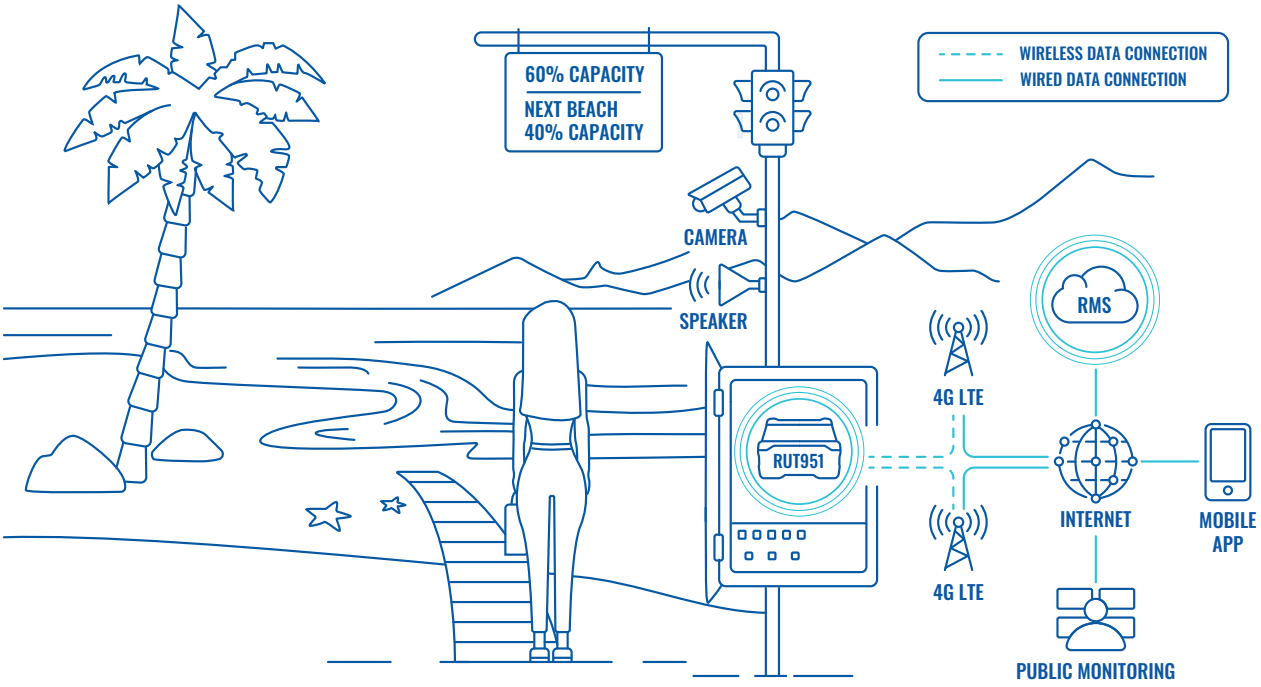
THE CHALLENGE – MAKING BEACHES SMARTER

Managing coastal tourism during peak season presents a unique set of challenges. Overcrowded beaches can diminish the quality of the visitor experience, strain municipal resources, and compromise safety, particularly in emergency situations.

To address these issues proactively, municipalities needed a real-time solution to monitor and regulate beach occupancy across multiple, often remote, locations where fixed-line connectivity was unavailable or impractical.

This required a system that could be set up and perform in challenging outdoor environments and ensure consistent, secure data transmission. More importantly, it had to offer remote monitoring capabilities to enable centralized control, reduce response times, and improve operational efficiency without sending technicians into the field.

TOPOLOGY



THE SOLUTION – CONNECTING THE COAST WITH CELLULAR

To meet the challenging connectivity demands across coastlines, JUMA and its municipal partners deployed a network of intelligent sensors and AI-enabled cameras at key beach access points. These devices continuously count incoming visitors and communicate occupancy data via the RUT951 cellular router to a centralized monitoring platform.

Beach conditions can be unpredictable—heat, humidity, and wind all pose challenges. That's why a robust router is essential. The RUT951 4G router features a wide operating temperature range (-40°C to +75°C) and rugged aluminium housing, making it ideal for harsh environments and ensuring reliable edge connectivity for JUMA.

Used with CCTV systems, this 4G router ensures uninterrupted transmission of video data and sensor readings, even in areas with fluctuating signal strength. Its compatibility with different carrier networks through dual SIM slots means the router can switch between providers in case of unexpected downtime, ensuring consistent connectivity.

Real-time data is aggregated and visualized through various public monitoring centers. Digital signage boards placed at beach entrances inform visitors of current crowd levels, while a user-friendly mobile app displays live occupancy statuses.

Using Remote Management System (RMS), municipal IT teams maintain full remote monitoring control of the entire deployment. From updating firmware to diagnosing connectivity issues, RMS ensures each dual sim router operates optimally without the need for physical intervention. This not only minimizes operational costs but also supports the scalability of the project across more beach sites in the future.

This initiative highlights how a robust cellular router, particularly one designed for industrial use like the RUT951, can transform urban infrastructure. It delivers dependable remote monitoring, ensures secure and stable data flow, and empowers cities to offer safer and more enjoyable beach experiences.

Ready to discuss your specific connectivity needs and explore how Teltonika can tailor your solutions? Contact us using the button below. One of our experts will gladly help you find the best option for your IoT project.