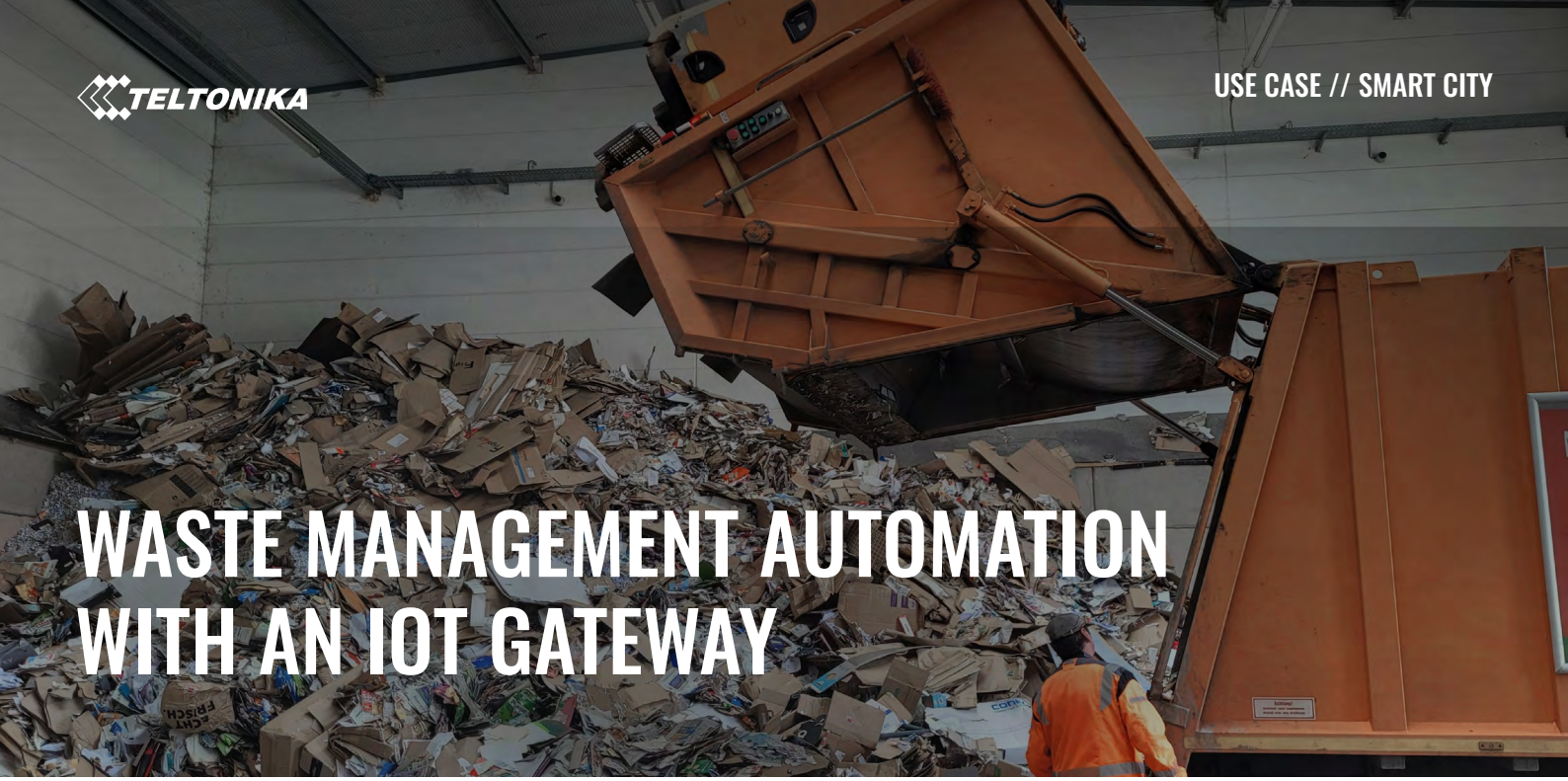


WASTE MANAGEMENT AUTOMATION WITH AN IOT GATEWAY

HIGHLIGHTS

- REEN, a Norwegian provider of cutting-edge cloud tools and sensors, offers a technology-driven waste management automation solution designed to optimize waste collection, transportation, and analysis.
- The Teltonika TRB160 industrial IoT gateway was chosen for its cellular connection, Gigabit Ethernet, and ability to power devices via USB-C.
- This solution enables real-time data on waste container fill levels, location, and condition, leading to optimized routing, reduced costs, and enhanced sustainability.

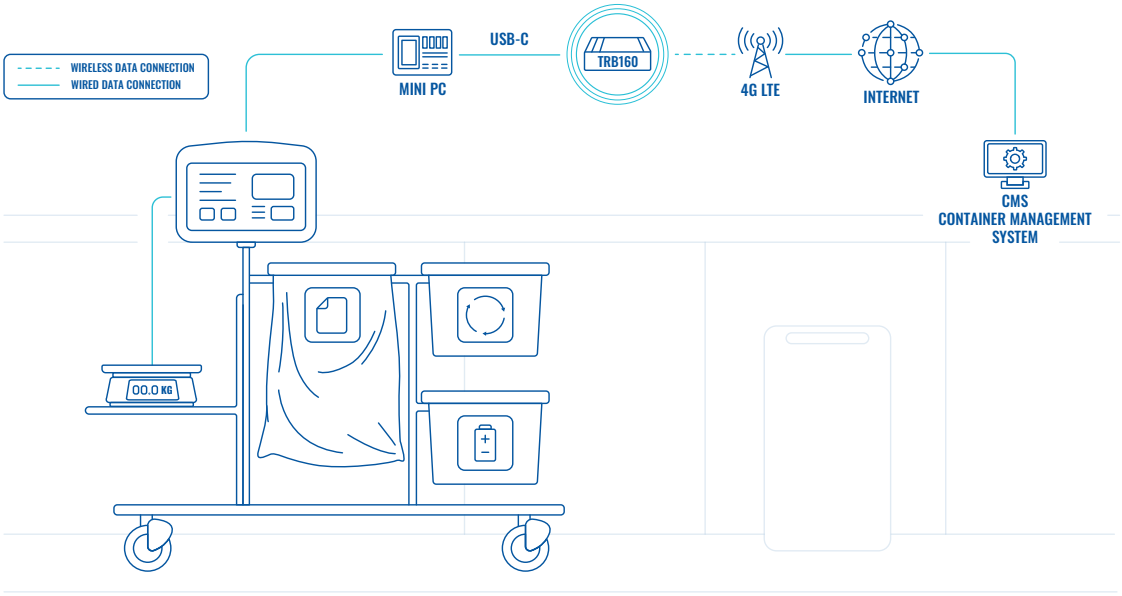
THE CHALLENGE – HIDDEN COSTS OF MOUNTING WASTE

Traditional waste management methods present a complex set of challenges for organizations and companies worldwide. One of the key issues is the generation of vast amounts of waste. According to the World Bank, global waste generation is projected to increase by 70% by 2050, reaching 3.4 billion tonnes per year. This increase poses significant challenges for waste management systems, including the need for more efficient collection, transportation, and disposal methods.

Inefficient waste collection routes contribute to increased fuel consumption, vehicle wear, and greenhouse gas emissions. Traditional systems often lack real-time data on waste container status, making it difficult to optimize collection schedules and ensure timely pickups. This can result in higher operational costs, environmental pollution, and public health concerns.

Moreover, effective waste management is crucial for promoting sustainable cities and communities, as outlined in the United Nations Sustainable Development Goal 11. REEN addresses these challenges by providing a technology-driven solution that brings efficiency, cost savings, and sustainability to waste management.

TOPOLOGY



THE SOLUTION – DATA-DRIVEN WASTE MANAGEMENT

REEN's solution leverages the Teltonika's TRB160 IoT gateway to enable waste management automation. Waste containers are equipped with sensors that monitor fill levels and other relevant information such as weight or humidity. These sensors connect to a mini-PC, which transmits real-time data on container fill levels, location, and condition to REEN's cloud-based IoT platform via the Teltonika's TRB160 industrial gateway.

The TRB160 IoT gateway was chosen for its cellular connection, rj45 port, and USB-C power delivery, which simplified the setup and met the customer's needs. This connectivity solution empowers REEN's Container Management Service (CMS), which combines fill-level sensor data with QR codes for system asset identification and ensures accurate tracking of waste metrics.

REEN's technology optimizes waste collection in various settings, including shopping centers, offices, and hospitals. Users can weigh their waste before disposal, providing valuable data for companies to further optimize their waste management practices and even allocate waste removal costs based on usage. The system also enables on-demand waste removal, triggered when containers are full, and visualizes CO2 savings to promote environmental responsibility.

By using TRB160 IoT gateway to collect real-time data, REEN's system optimizes waste collection processes, leading to more efficient routing, reduced fuel consumption, and lower operational costs. This contributes to a more sustainable environment and aims to improve both customer and employee experience. REEN technology enables to streamline the process in an effective, sustainable, and profitable way.

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.