

REMOTE WASTEWATER SUBSTATION CONNECTIVITY WITH RUT204 CAN BUS ROUTER

HIGHLIGHTS

- ✓ Remote wastewater substations often operate without permanent staff, leaving pump performance and generator status invisible to administrators until a fault occurs.
- ✓ Teltonika's [RUT204 LTE router](#) with a native CAN bus interface provides Cat 4 connectivity. Supporting CANOpen protocol, it enables direct integration with variable speed drives and generator controllers.
- ✓ [Remote Management System \(RMS\)](#) allows zero-touch provisioning and centralised monitoring, reducing operational effort and on-site visits.

REMOTE WASTEWATER SUBSTATIONS RISK COSTLY OVERFLOWS

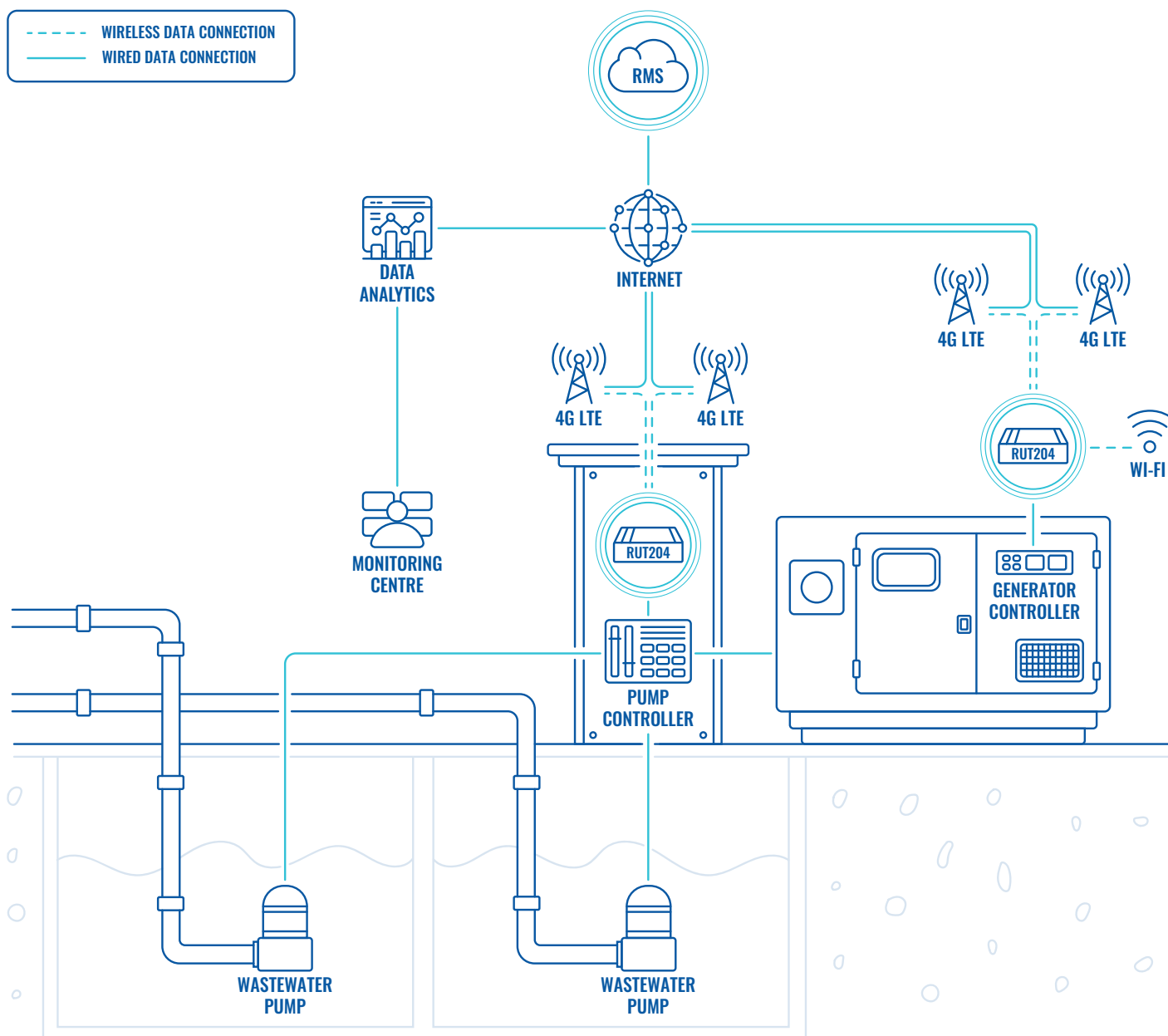
Beneath every city and town lies a network of pumping stations that few people ever think about. Yet without them, daily life would quickly come to a halt. These substations run continuously, without permanent staff, and are often located in rural or hard-to-reach areas far from the nearest wired internet connection. When something goes wrong, there is frequently no one there to notice.

Without reliable remote connectivity, operators face a fragmented picture. Pump faults go undetected until they escalate, generator status remains unknown until an emergency occurs, and diagnosing issues or adjusting system parameters requires technicians to travel to the site, adding time, cost, and operational risk.

The consequences of a missed fault extend beyond equipment damage. Overflow events carry serious environmental and regulatory implications, and in locations without fibre-optic infrastructure, there is no wired fallback to rely on. Making matters worse, backup diesel generators, the last line of defence during a power outage, are often equally invisible to operators. Their status, whether running, faulted, or low on fuel, typically goes unreported until the moment they are needed most.

What these sites require is a reliable cellular network device capable of interfacing directly with the industrial equipment already in place, from modern variable speed drives to legacy PLC controllers.

TOPOLOGY



FULL SUBSTATION VISIBILITY WITH A NATIVE CAN BUS 4G ROUTER

Two Teltonika [RUT204 industrial LTE Cat 4 routers](#) are deployed at the site, one at the wastewater pumping station and one at the backup diesel generator. As Teltonika's first router with integrated CAN hardware, the RUT204 removes the need for external gateways entirely, simplifying deployment and reducing the number of devices required at each site.

At the pumping station, one RUT204 connects directly to the variable speed drive (VSD) via its native CAN bus interface, using CANOpen protocol depending on the drive model.

The 4G router collects key operational parameters including motor speed, load, current consumption, operating hours, and fault status. The PLC responsible for pump logic and tank level control connects to the RUT204 via Ethernet using Modbus TCP, or via RS232 using Modbus RTU for legacy controllers, giving operators remote access to automation status and system alarms regardless of the controller generation.

A second RUT204 is installed at the diesel generator. The LTE router reads data from the generator controller via the CAN bus, enabling continuous remote monitoring of engine status, RPM, fuel level, battery voltage, operating hours, and fault conditions. Operators always know whether backup power is available, when the generator has activated during an outage, and when maintenance is due, without requiring a site visit.

All data from both 4G routers is transmitted securely to a SCADA system or cloud platform over 4G LTE, giving operators a unified real-time view of substation health. Immediate fault alerts and continuous status reporting enable faster incident response and early detection of developing equipment issues.

The RUT204's Wi-Fi interface provides local network access for technicians during on-site maintenance, enabling fast diagnostics and configuration without cellular dependency. System-wide remote access and long-term device management are handled through Teltonika's [Remote Management System \(RMS\)](#), which supports zero-touch provisioning and centralised oversight of all connected ecosystem across the wastewater network.

Wastewater operators gain full remote visibility and control of critical substation equipment through the RMS Network Map, which provides a live visual overview of the entire infrastructure, making it easy to pinpoint faults, perform bulk updates, and manage all deployed routers from a single interface. The result is uninterrupted operation, lower operational costs, and confident management of infrastructure, even in the most remote locations without wired connectivity.

If you are looking to modernise your wastewater network monitoring with reliable LTE Cat 4 and native CAN bus connectivity, get in touch with us to discuss your project needs.

