IOT GATEWAY FOR WASTEWATER TREATMENT REMOTE MONITORING

HIGHLIGHTS

- STIB is an Argentinian integrator that implements pumping and fluid movement systems for domestic, commercial, industrial, construction, and agricultural applications.

- It had the challenge to upgrade wastewater treatment plants with technological and remote monitoring advancements enabling real-time alerts, monitoring status and water levels, anticipating operational issues, and more.

- STIB chose Teltonika's TRB246 IoT gateway, featuring the RS485 interface, to empower its CU362 control unit with robust network connectivity support and remote management capabilities enabled the gateway's RMS support.

THE CHALLENGE – WHEN MANY CONCERNS COLLIDE

In 2023, the global market size of the wastewater treatment industry was valued at $323.32 billion. It is projected to grow $617.81 billion by 2032, at a CAGR of 7.5%. It's no wonder, then, that this industry is seeing a surge in technological innovations and better management practices, especially given the complexity of wastewater treatment.

But while such advancements can be impressive, they come with their own set of challenges.

Collecting wastewater and transforming it into clean, drinkable water – wastewater treatment plants indeed perform remarkable feats. However, the water purification process, which involves biological and chemical treatments, requires continuous monitoring to ensure compliance with health and environmental regulations.

Moreover, a key aspect of wastewater treatment plants is ensuring their long-term smooth operation. These facilities rely on critical equipment like sewage pumps and pumping stations, which are costly and difficult to replace, to say the least. As infrastructure ages, the industry strives to extend equipment lifespan while ensuring compatibility with new technologies needed for continuous communication between plants and monitoring centres.

That's right, yet another often-overlooked challenge is reliable remote access and control of these plants. While technological advancements are enabling plants to function efficiently, none of them really make a difference if the plant can't be accessed and controlled remotely from its monitoring centres.

Remote access allows for making quick, informed decisions and immediate changes in response to any issues, ensuring continuous, efficient operations even when on-site access is not possible.

With numerous challenges identified, companies like STIB strive to upgrade and empower wastewater treatment plants with IoT solutions that are backed by the reliable connectivity of Teltonika's TRB246 IoT gateway.

TOPOLOGY
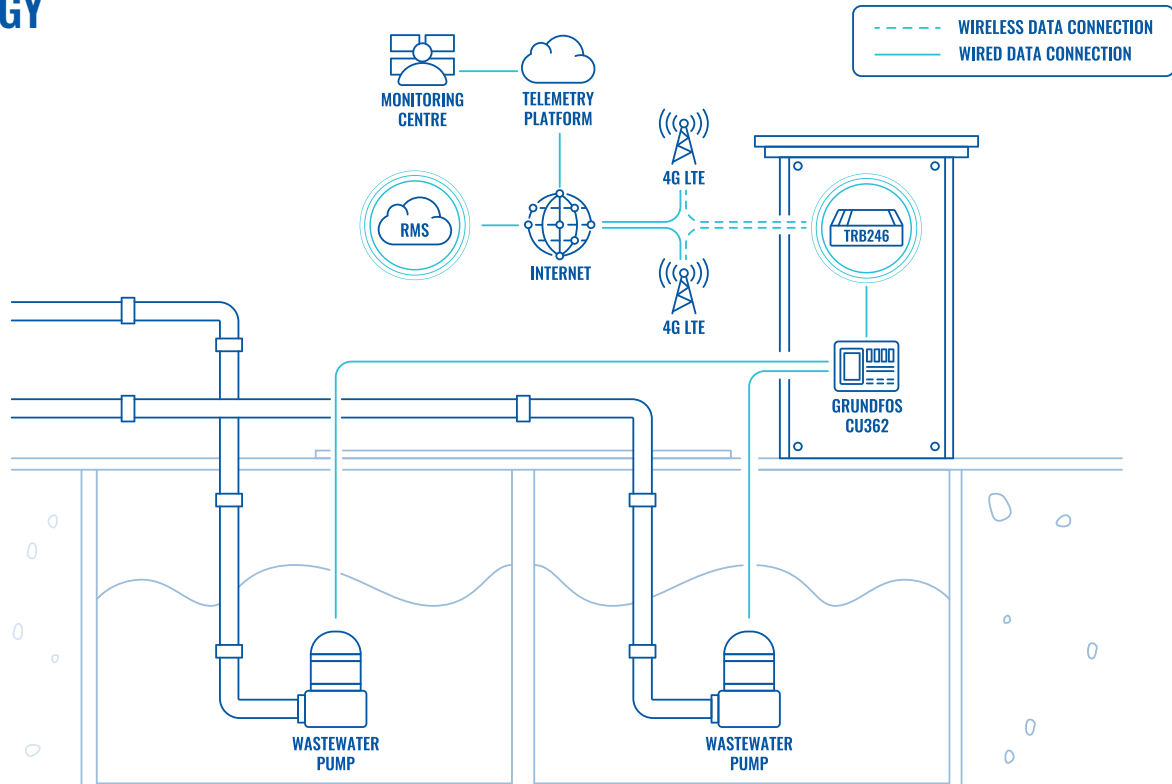
THE SOLUTION – PUT YOUR TRUST IN ROBUST CONNECTIVITY

The TRB246 industrial IoT gateway is the backbone of STIB's industrial IoT solutions, ensuring superb connectivity support for wastewater treatment plants.

STIB uses the Grundfos CU362 control unit to manage sewage pumps, with the TRB246 connected to the unit via RS485. This cellular gateway provides robust connectivity using two SIM cards, linking the plant's control system to a remote monitoring centre for seamless data and command transmission enabled via the MQTT protocol.

The standout feature of STIB's IoT solution is its flexibility. The setup can be deployed across multiple stations for a myriad of processes like extraction, lifting, pressurisation, or water treatment. It also integrates easily with equipment from any brand, making it adaptable to different environments. This, of course, couldn't be done without the TRB246 IoT gateway.

A major benefit of the TRB246 is its compact size—measuring 83 x 25 x 74.2 mm, this gateway can be easily installed in space-constrained cabinets or stations without compromising functionality.

Moreover, it is highly cost-efficient and competitively priced. Compared to other IoT gateways on the market, it offers excellent value without straining budgets, and with a maximum power consumption of less than 3.5 W, it helps reduce operational costs and environmental impact.

For now, everything sounds great. But what about the remote management part of the solution?

The TRB246 industrial cellular gateway is compatible with Teltonika's [Remote Management System](#) (RMS), which is the foundation making this IoT solution available remotely from anywhere at any time.

With the RMS Management, Connect, and VPN services, STIB can not only check and configure the TRB246 IoT gateway, but also securely access its CU362 control unit through VPN tunnels, enabling seamless management from its development office.

With all these advantages, STIB's IoT solution provides remote management, continuous pump status monitoring, real-time alerts, tracking of operating hours, water level monitoring in the pumping well, and predictive maintenance of any operational issues.

Sounds fantastic? Well, that's what you get when you put your trust in Teltonika's TRB246 IoT gateway!