

ENABLING CONTROL OVER A WASTEWATER TREATMENT PLANT

HIGHLIGHTS



Vian Industrial Solutions
Solving Problems Safely!

- ✔ [Vian Industrial Solutions Limited](#) (VISL) is a system integrator that aims to supply industrial customers with automation solutions for improving their existing systems in factories, plants, and other facilities.
- ✔ It had the task to automate the system of an entire wastewater treatment plant without changing existing equipment, and chose our RUT955 cellular router to fulfill it.
- ✔ RUT955 is perfect in cases where sustaining uninterrupted network connectivity is necessary, as it can supply communication via Ethernet ports, as well as Wi-Fi, and dual SIM.
- ✔ Another essential feature of RUT955 is the RS-232 interface support, which allows connecting legacy and new equipment into a one network using a single router.

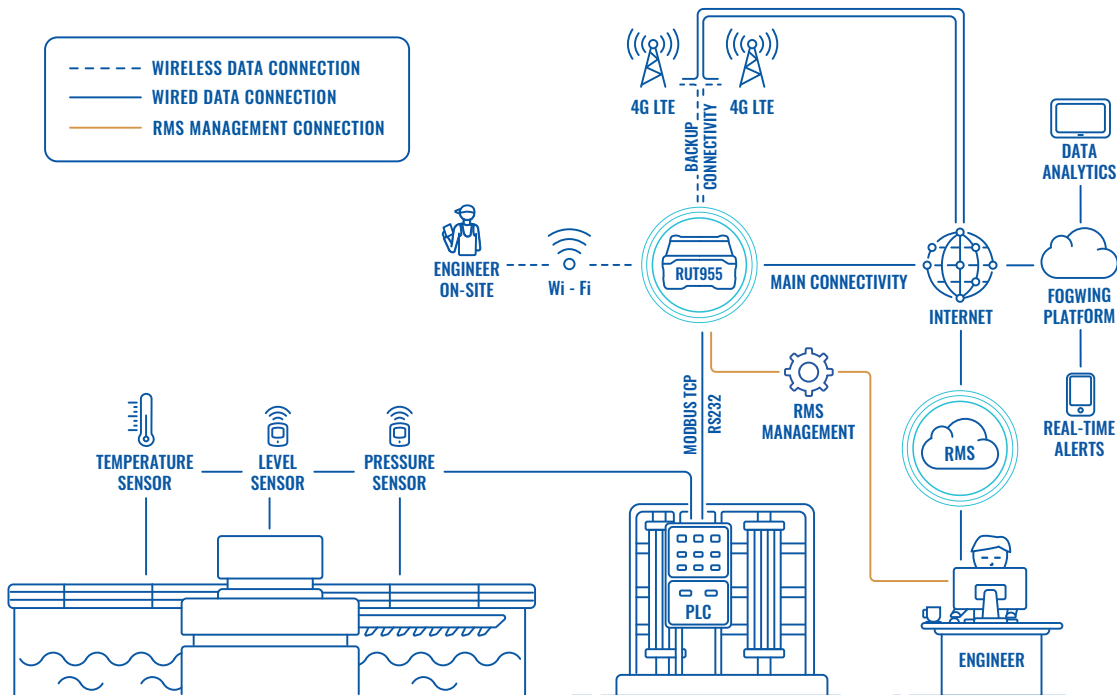
THE CHALLENGE – THE LEGACY OF WATER

Ever wondered where the water you use to wash your hair, body, or dishes ends up after it hits the drain? Back into the glass of water that you drink. Don't worry though – it undergoes a lengthy cleaning process before it's once again safe for consumption. Behind this paradox are wastewater treatment plants that make this unpleasant yet necessary water treatment possible.

As the water treatment process contains many steps, ensuring the top-notch performance of its machinery is key. Otherwise, if just a single part of the plant breaks or shuts down, it'll inevitably lead to loss of money and time and reduce productivity. How to prevent the plant from all of this? By monitoring water levels, pressure, and temperature flows and controlling the entire infrastructure in cases where process parameters exceed normal operating values.

The monitoring and infrastructure's control must be automated to eliminate human errors, but it must be realized without changing any existing equipment, as legacy industrial equipment often doesn't support features like Wi-Fi or Bluetooth, and doesn't even have Ethernet interfaces. So, it's quite a tough challenge...

TOPOLOGY



THE SOLUTION – THE AUTOMATION OF LEGACIES

Thanks to our great partners, VISL, a wastewater treatment plant in Guyana got a great and cost-effective solution without having to change its existing equipment!

With RUT955, the entire plant got supplied with robust network connectivity via three ways – Ethernet ports, Wi-Fi, and dual SIM support – which is a significant advantage of the router as the rest of the automation processes couldn't be executed without a reliable Internet signal. With wired connectivity as the main access to the Internet and cellular operating as backup, RUT955 has one more feature that made this solution full-fledged: the RS-232 interface.

By connecting the router to the plant's PLC, this interface enabled a single, seamlessly-functioning ecosystem. Thanks to the Modbus TCP protocol crucial for telemetry, this solution allowed decoding all data from the water level, temperature, and pressure flow sensors. To make this data available for engineers to read and analyze, it was then directed to VISL's "Fogwing" cloud platform using the MQTT protocol, allowing broadcast visualizations, analytics, and real-time alerts. This data enabled continuous monitoring of the entire plant's system and helped take preventive actions accordingly, thus avoiding hazards and plant equipment damage. Both actions could be performed remotely and on-site while using the Wi-Fi our RUT955 is equipped to provide.

To top this solution off and guarantee a plant's best performance, our [Remote Management System \(RMS\)](#) was used to fully control and monitor our devices, making sure that each one of them is working accordingly. Improving daily operations with automatization and control over the plant's network elevates your solution to reaching its best performance. So water you waiting for?

