IOT GATEWAY FOR WATER PURIFICATION SYSTEM DATA TRANSMISSION

HIGHLIGHTS

✓ Odyssey Energy Solutions provides data-driven tools to financiers and renewable energy companies, assisting them in scaling their solutions while shifting towards clean energy solutions.

✓ Its client, Jibu, establishes water purification systems across Africa. It needed centralised remote management capabilities to allow its administrators monitoring and controlling each system to ensure the highest water quality standards.

✓ This is why Odyssey Energy Solutions offered Jibu its FernFlex controller, with its centrepiece being the Teltonika Networks TRB140 IoT gateway, to integrate them into each system. This enabled unparalleled (and remote!) visibility over water quality testing and robust network connectivity support so that each system would work at peak efficiency.

THE CHALLENGE – NO DATA, NO ASSURANCE

Having access to clean and purified water mustn't be a privilege. It's a necessity that must be attainable to everyone, regardless of living circumstances or geographical location.
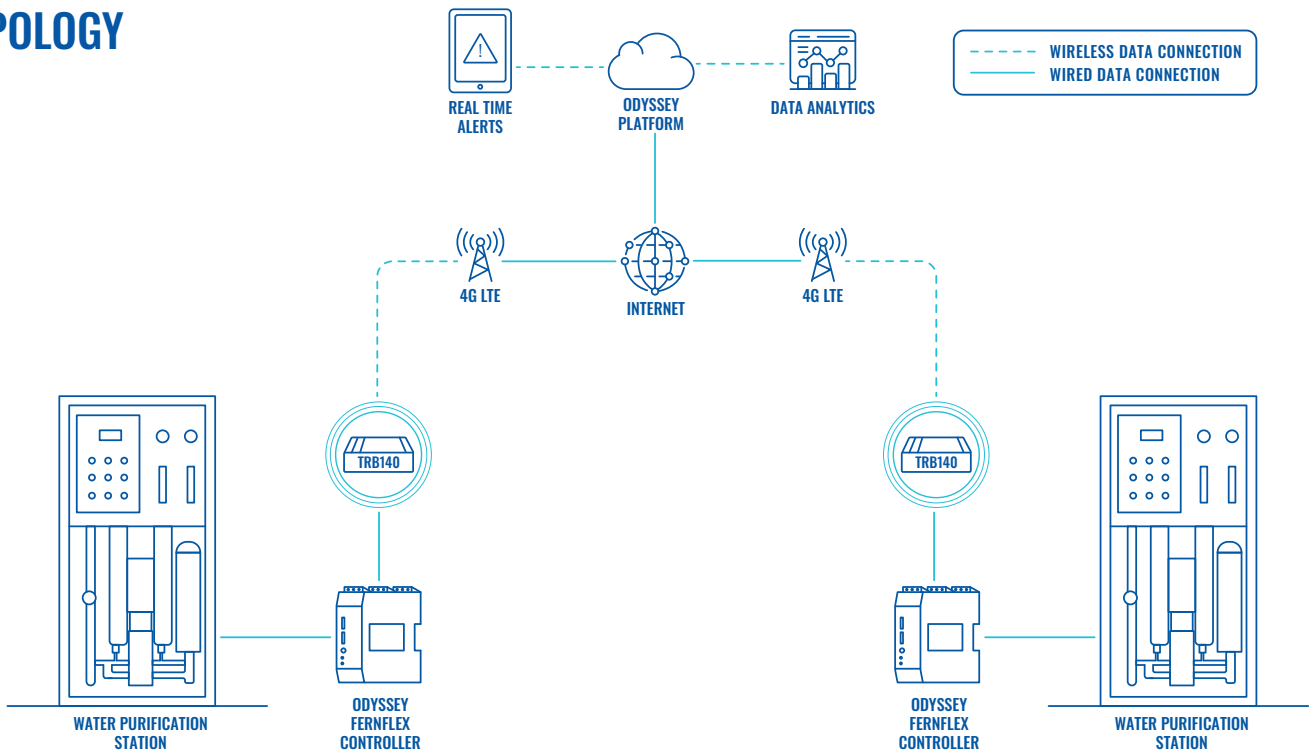
With this in mind, Odyssey Energy Solutions' client, Jibu, has established a water purification system that involves multiple water treatment processes, like pre-filtration, ultrafiltration, polishing, and chloramine injection. The system is complex and must be ensured to work efficiently, creating a top-notch quality end product.

Jibu, by engaging communities across Africa in their purified water distribution effort, has significantly expanded throughout the continent, establishing numerous franchises. Each franchise, equipped with local water purification systems, swiftly provides clean, germ-free water to locals. However, this decentralisation of systems presents a significant challenge regarding water quality control.

As each franchise requires its own water purification system, maintaining consistent monitoring and control over these systems becomes increasingly complex. Additionally, as franchises are continuously expanding in new and different communities, the scalability and remote locations of the systems add up to the managerial challenges.

All of this should not be overlooked, knowing how important it is to supply the best quality water. Luckily, this isn't the case here. Odyssey has provided Jibu with its FernFlex controller together with the Teltonika Networks TRB140 gateway to enable a very thorough and, most importantly, extremely convenient way of overcoming these challenges.

TOPOLOGY

THE SOLUTION – ALL THE DATA FOR ALL THE WATER

The combination of Odyssey's FernFlex controller and our TRB140 IoT gateway forms an impeccable duo by offering network connectivity, centralised control of franchise systems, and remote access to detailed machinery data. But let's go over it drop by drop.

Every FernFlex controller, plugged into our TRB140 cellular gateway via an Ethernet cable, receives robust network connectivity to supply each water purification system with Internet. Leveraging the universally supported Modbus protocol, this setup facilitates M2M communication for data transmission that's all about water quality testing and assurance.

Now, what data are we talking about? Very precise and thorough ones, allowing Jibu's water filtering system administrators to be sure that they had visibility into the water purification machinery, ensuring operations were running efficiently and clean water was, in fact, being produced.

The FernFlex controller and the TRB140 IoT gateway enabled extracting multiple data points, such as the litres of purified water produced at each location, the status of key water treatment components like filters, and total dissolved solids and residual chlorine measurements. Additionally, it provided insights into the overall quality of the water being produced.

And how do Jibu's water purification system administrators access this data? Remotely! This is thanks to Odyssey's platform for data storing and our Remote Management System (RMS) for managing and monitoring all TRB140 industrial IoT gateways.

With this setup, Jibu's system administrators can program each industrial gateway to automatically adjust system settings based on predefined criteria. So, if issues arise in specific water treatment stages, like the UV disinfection malfunctioning stage, the system is designed to shut down automatically. In such scenarios, this IoT gateway is set up to send alerts to designated recipients, ensuring prompt notification and response.

This system equips Jibu employees with unparalleled visibility over data and enhances performance through customisable automation solutions. Incorporating the FernFlex controller and our industrial IoT gateway ensures that each franchise consistently achieves rigorous water quality testing and purification standards.