

Smart IoT Solution Powered by Routers for Oil & Gas Production

Enhancing the level of automation and optimizing the process of data collection

in Kazakhstan 4G

partner
Oil and Gas Service Alliance LLP

Location
Kazakhstan

Number of Devices Deployed
250*UR32 / 250*UR35

Applications
Smart manufacturing /Smart factory

Background

With the advancement of technology and the expansion of industry scale, the level of automation efficiency have become particularly important for enterprises in recent years. In this context, utilizing IoT technology solutions has become the optimal choice. In the field of Oil & Gas Production, transmitting, extracting, and refining are highly complicated, but automation simplifies these tasks. By integrating automated systems, companies can effectively boost productivity and reduce costs, while reducing safety risks at the same time.

In this project, "Oil and Gas Service Alliance" LLP in Kazakhstan implemented UR32/35 to ensure effective communication between wells and the SDMO dispatch system. The use of Milesight routers helps to enhance the level of automation and optimize the process of data collection, ensuring management of well equipment.



Challenges



Automation Level Enhancement

Automation is critical to oil and gas production, as oil and gas wells are often found in remote locations that are challenging for workers to access.



Data Collection & Analysis

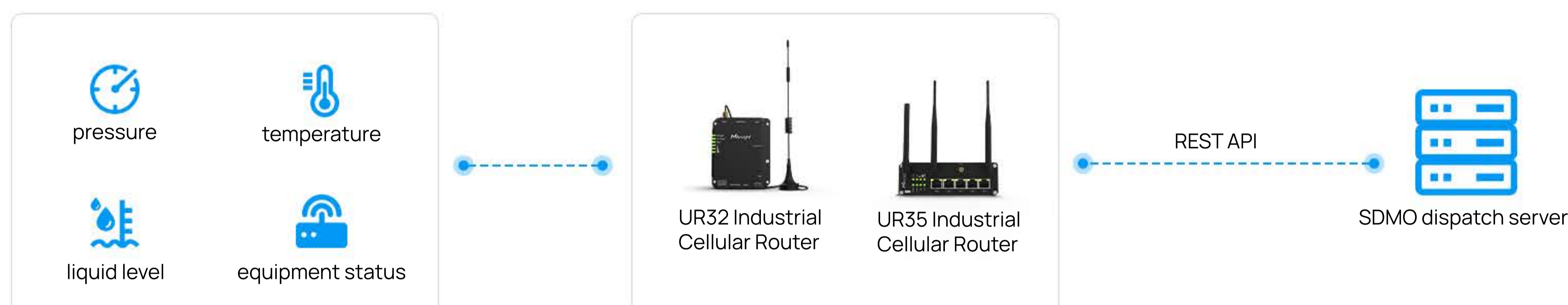
In the process of oil and gas production, it is essential to ensure accurate data collection and effective analysis, as well as stable data storage, to prevent unexpected safety risks.



Equipment Management

Oil & gas production places high demands on equipment management. During the manufacturing process, it is necessary to monitor the equipment status and promptly transmit instructions, which enhances production efficiency and reduces labor costs.

Solutions



In this project, Milesight routers collect telemetry data from wells and control pump equipment without the need to send ModBus commands directly. The UR32/UR35 Routers accept commands via REST API, simplifying integration with existing control systems and achieving high flexibility in operations.

The UR32/35 perform the following functions through this solution:

Data Collection and Analysis:

Milesight Router UR32/35 collect telemetry data such as pressure, temperature, liquid level, and equipment status. This data is processed to identify critical indicators and prevent emergency situations.

Equipment Control:

UR32/35 allows control of pumps using commands received via REST API. This ensures prompt response to changes in operating conditions and allows for process automation, minimizing human involvement.

Data Transmission & Storage:

The routers send only the necessary data via REST API to the SDMO dispatch server. This reduces network load and increases data transmission speed.

In case of a connection loss with the dispatch server, the routers can store collected information for up to 10 days. This ensures reliability and continuity of the system in case of communication interruptions.



Featured Products



UR32 Industrial Cellular Router

- Industrial Grade Design for Harsh Environment
- Rich Interfaces for Multiple Applications
- Embedded Python SDK for Secondary Development
- Rugged And Pocket-Sized Design
- Remote Management on MilesightVPN and DeviceHub



UR35 Industrial Cellular Router

- Industrial Grade Design for Harsh Environment
- Rich Interfaces for Multiple Applications
- Embedded Python SDK for Secondary Development
- Rugged But Exquisite Design
- Remote Management on MilesightVPN and DeviceHub

Results

Increased Efficiency

The implementation of Milesight routers led to a significant increase in system efficiency. The response time to changes in equipment operation has been reduced, and data accuracy has been improved.

Reduced Operating Costs

Optimization of management and data collection processes has reduced operating costs by minimizing the need for manual control and system maintenance.

Increased Reliability

The ability to store data locally ensures system resilience to communication failures, which increases the reliability of the entire monitoring and control system.

Flexibility and Scalability:

The use of REST API and the ability to UR32/35 provide high flexibility and scalability of solutions, allowing easy adaptation of the system to changes in production processes.

Overall, the implementation of UR32/35 in the SDMO dispatch system has demonstrated high efficiency and met expectations for increasing automation and reliability of well management. The design allows integration with bore water systems to manage supply-demand balance and is adaptable to different end-user needs and environmental conditions.

Operational Flexibility

"Oil and Gas Service Alliance" LLP to confidently move forward by increasing the level of automation and digitization of production processes.

User Engagement and Accessibility

The system empowers end-users with intuitive interfaces for managing water usage, promoting conservation and responsible use of resources.

Partner



About Oil and Gas Service Alliance LLP

Neftgazoviyi Servisniy Alliance (Oil and Gas Service Alliance) LLP was founded in 2007 and has established itself as a reliable partner in the oil and gas industry. The company's core activities focus on providing services to oil extraction companies in the field of production digitalization, as well as the development and production of intelligent control stations (ICS) for screw and rod pumps.

We actively implement advanced technologies to enhance the efficiency and reliability of oil extraction processes. A key area of our work includes the design, installation, and maintenance of ICS, as well as consulting services for production process optimization.

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