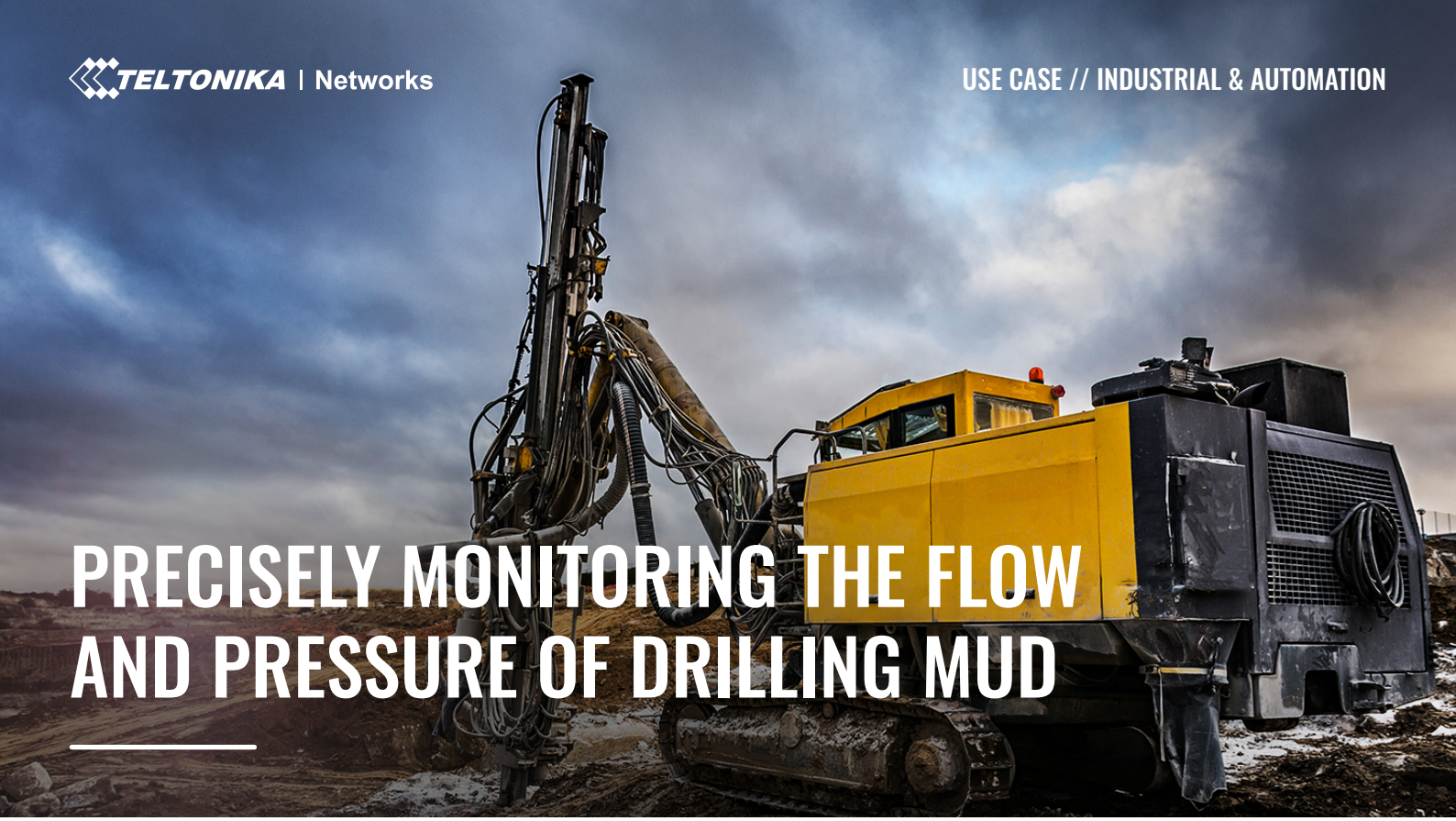


PRECISELY MONITORING THE FLOW AND PRESSURE OF DRILLING MUD

SUMMARY

Mud and industrial machinery don't exactly see eye to eye, but in the world of drilling, they have struck an unlikely alliance. Drilling mud, also known as drilling fluid, is a viscous liquid used in oil and gas drilling for lubricating the drill, keeping it cool, and supporting its stability, among other important functions.

However, for how useful it is, drilling mud is also very dangerous. Like having to bring along a toddler to a store where everything is made of glass, a lapse of concentration can make things go horribly awry.

CHALLENGE

Drilling mud is under constant hydrostatic pressure, and the amount of pressure determines whether it is an integral part of the drilling process or a serious work hazard. As such, the right amount of pressure needs to be maintained. Too much pressure results in overbalance. Not enough results in underbalance. Both can potentially damage the drilling gear, so the continuous pumping of drilling mud, known as mud flow, must be monitored at all times. Drilling gear is very expensive, so leaving the question of pressure balance to human judgment is just asking for trouble.

This calls for the precise, automated monitoring and control of the mud flow, performed by a solution capable of withstanding the vibrations of such an adverse work environment.

PARTNER - RAZRLAB

RAZRLAB is a UAE-based veteran in creating practical, tailor-made IoT solutions for a variety of different sectors in Africa and the middle east. From prototyping to implementation, RAZRLAB ensures that technological challenges are solved using cutting-edge IoT systems. Its client in the UAE was having mud flow troubles on its drilling rig, and RAZRLAB's team put their minds to work.

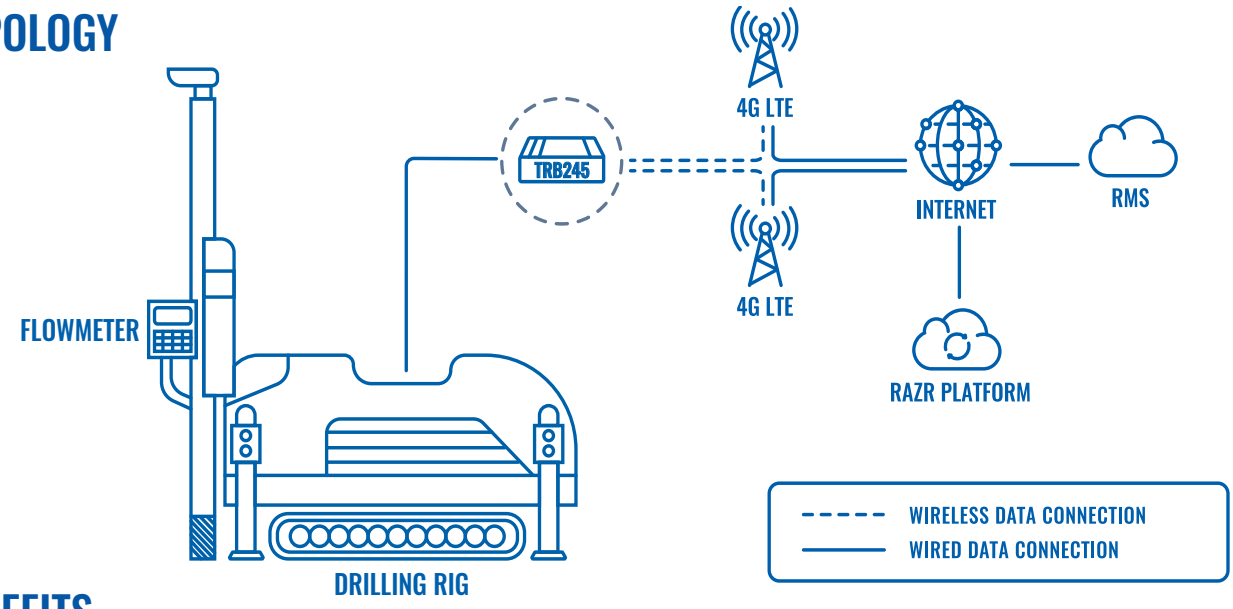
SOLUTION

The solution they came up with is a flowmeter installed inside the drilling rig, measuring the mud flow and immediately alerting when any deviations in hydrostatic pressure occur. The flowmeter then sends this data to a custom RAZR IoT cloud platform accessible remotely by a centralized control dashboard showing real-time drill rig parameters.

The communication between the flowmeter and the cloud platform is facilitated by our reliable heavy-duty workhorse: the TRB245 industrial gateway and its RS485 port. It provides a steady internet connection and ensures the connection will remain uninterrupted thanks to its dual SIM functionality and auto-failover feature.

Designed with sturdy aluminum housing for vibration resistance as well as compact size, the TRB245 was made for this exact type of rugged work environment. It can easily be installed inside the drill and withstand the constant vibrations of the drilling, as well as extreme temperatures. It is quite literally perfect for the job.

TOPOLOGY



BENEFITS

- TRB245's small and compact design makes it easy to fit into machinery with very little wiggle room, allowing for a wider range of applications.
- Encased with aluminum and designed to withstand the vibrations and extreme temperatures of an industrial work environment, the TRB245 is reliable even in adverse conditions.
- Modbus RTU and MQTT capabilities mean TRB245's internet connectivity is perfect for telemetry and sensory data conversion, and a built-in GNSS also makes it easily trackable.

WHY TELTONIKA NETWORKS?

RAZRLAB themselves put it best: "By combining Teltonika Telematics and Teltonika Networks products, we built multiple solutions that add immense value to our customers. Our drill rig monitoring application takes drilling activities to the next level.

"The TRB145, having Modbus RTU and MQTT communication capabilities and interfaced with flow and pressure sensors, was the ideal solution for facilitating a seamless application where telemetry and sensory data conversion into a single asset are paramount."