

# Global Offshore Drilling Provider Rowan Companies Increases Efficiencies through IoT Solution

## The Customer

Rowan Companies (Rowan) is a global provider of offshore contract drilling services. Its fleet operates in the United States Gulf of Mexico, the United Kingdom and Norwegian sectors of the North Sea, the Middle East, and Trinidad. It includes four ultra-deepwater drillships and 25 jack-up rigs. For more than 90 years, Rowan has provided safe, reliable and efficient drilling services to its clients.

## The Challenge: Maintaining Remote Drilling Services Without a Distributed, Real-Time Data Architecture

Rowan's offshore drillships can be located in remote parts of the world where intermittent satellite connectivity—along with network latency and bandwidth issues—make communication with onshore support very difficult. Without access to real-time data, offshore crews operate with a limited capacity for remote support.

Upcoming regulatory changes further emphasized the need for Rowan to implement a streaming strategy. In 2019, the Bureau of Safety and Environmental Enforcement (BSEE) will require offshore drillers to monitor safety-critical equipment in real-time and archive the data at an onshore facility—making it even more urgent that Rowan solve any connectivity challenges with a long-term, scalable solution.

"These new regulations certainly posed a challenge to our organization, but at the same time, they also presented a meaningful opportunity," says Olivier Lhommet, Director, Operations Applications at Rowan. "We realized that we would be able to use this data acquisition for advanced intelligence, including analytics and maintenance."

## The Mission: An IoT Solution to Seamlessly Connect Data from Sea to Shore

Recognizing the need for reliable offshore-to-onshore connectivity for global, near real-time data access and advanced scalability, the Rowan team worked to develop a competitive strategy that would capitalize on the Internet of Things (IoT). This initiative began with identifying fundamental technologies to fuel the IoT effort.

Rowan sought an all-encompassing solution that could easily and securely get information to shore and speak to various industrial control systems (ICS). Additionally, they needed a scalable solution to expand to other rigs in the near future.

"We're always looking for new ways to leverage insights to be even more efficient," says Lhommet. "We knew there had to be a better way to bring data to the onshore teams, which would allow us to increase the collective expertise available to support safer and more efficient operations."

After evaluating several offerings, Rowan found that many solutions were restricted in the amount of data they could pull from various pieces of equipment and/or transfer to land. The company found a solution for its IoT strategy in [Hortonworks Data Platform \(HDP®\)](#), [Hortonworks DataFlow \(HDF™\)](#) and Kepware's [IoT Gateway for KEPServerEX®](#). Used together, these software tools provide Rowan a complete IoT solution that supplies seamless data connectivity for near real-time monitoring, troubleshooting, diagnostics and performance measurement.

Rowan utilizes the Manufacturing and WITS suites for KEPServerEX to connect various ICS. These systems include the blowout preventer (BOP) control system, drilling systems and power generation systems. By leveraging the IoT Gateway advanced plug-in, Rowan reliably collects real-time industrial data from the multiple systems and instantly streams it into HDF, which Rowan has set up to prioritize, compress and encrypt data before storing it locally.

"After seeing how well the Hortonworks tools worked with the IoT Gateway, it was easy to move forward with this decision," says Lhommet. "The offerings and expertise provided by Hortonworks have enabled us to efficiently accomplish our goals. The ability to seamlessly stream into HDF, and HDF's ability to get the information in the hands of those who need it most, allows us to focus on analyzing the data to make informed decisions."

### The Results: Near Real-Time Transmission Windows

Rowan implemented the Hortonworks and Kepware solutions on its first drillship in less than 90 days, utilizing 3,200 tags and 50 kilobytes of bandwidth. Rowan plans to expand this implementation across 25 rigs. When complete, the solution will utilize up to 10,000 tags and 150 kilobytes of bandwidth.

"The idea that we'd be able to deploy this solution on 25 rigs within six months seemed unfathomable to me," says Lhommet. "However, given the ease in our first deployment, we're confident that we'll be bearing the fruits of this larger implementation on the timeline we've proposed."

### Conclusion

Rowan can now remotely monitor certain conditions, some of which are critical. With predictive analytics and maintenance forecasting, Rowan expects to reduce downtime and alleviate future troubleshooting trips to the rigs. In addition, Rowan will be able to comply with the important BSEE regulations going into effect in 2019.

Kepware is a software development business of PTC Inc. located in Portland, Maine. Kepware provides a portfolio of software solutions to help businesses connect diverse automation devices and software applications and enable the Industrial Internet of Things. From plant floor to wellsite to windfarm, Kepware serves a wide range of customers in a variety of vertical markets including Manufacturing, Oil & Gas, Building Automation, Power & Utilities, and more. Established in 1995 and now distributed in more than 100 countries, Kepware's software solutions help thousands of businesses improve operations and decision making.

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### Organization:

Rowan is a global provider of contract drilling services with a fleet of 27 mobile offshore drilling units, composed of 23 self-elevating jack-up rigs and four ultra-deepwater drillships. The Company's fleet operates worldwide, including the United States Gulf of Mexico, the United Kingdom and Norwegian sectors of the North Sea, the Middle East, and Trinidad.

### Solution:

KEPServerEX®

- IoT Gateway advanced plug-in
- Manufacturing Suite
- WITS Suite

Hortonworks Data Platform (HDP®)  
Hortonworks DataFlow (HDF™)

### Organization Impacts & Benefits

- Increased ability to securely and reliably transfer data from offshore to onshore teams
- Enabled the real-time monitoring, troubleshooting, diagnostics and performance measurement of rigs—regardless of location
- Provided scalability for future deployments