

## RESEARCH AND DEVELOPMENT | DATA ALERTS

### Challenge

Detect and issue drilling team alerts in response to unusual variations in sensor data.

### Solution

Develop a series of algorithms that examine real-time WITSML data feeds and issue an alert when unusual conditions are encountered.

These algorithmic event agents improve safety and operations by increasing process understanding and data quality.

An event may occur when an imbalance between a load (e.g. RPM) and signal (e.g. torque) is unexpected, such as an increase in RPM and a decrease in torque. This prompts an effort to understand the cause of the event – such as the addition of a lubricating material.

Events agents are also useful in trouble-shooting data quality. This might occur when an event is noted but drilling operations experience no problems, indicating a sensor failure. For instance, when a pump stroke counter fails, it suggests a reduction of mudflow but SPP remains the same. As a result, an erroneous pack-off is indicated which can then be traced to a sensor problem.

