

The Intelligent Oil Field and Advanced Production Automation - The Challenge

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Abstract

Here's the challenge: Oil and gas companies have assets distributed across thousands of square miles. Pumping and processing equipment and mobile assets must be monitored for optimal performance and production. Volumes of streaming data come from every aspect of operations, and are tracked and stored daily. Multiple IT and operations technologies are applied to make sense of the data – often in real-time. Duplicate analytical systems operating in separate parts of the business and with partial data are commonplace. The daily challenge is to rationalize and make sense of the information in both time and space, providing the when and where analytics necessary to prevent losses and maximize profits – for today and tomorrow. Many producers are capitalizing on early successes in advanced well control and real-time monitoring. And many have engaged in a major 'Digital Field' initiative. Combining both proven and leading-edge technologies, the Advanced Field Monitoring template is providing a powerful tool for well and facilities performance monitoring and optimization. This paper presents the concept of the Performance Production Monitoring (PPM). There are many challenges and overcoming many of these challenges can only be achieved with the addition of advanced Production Automation Technology to meet the market requirements and maintain profitability. The oil and gas industry's leading producers are looking to increase the efficiency of each dollar, hour and revenue cycle. Real-time information provides the foundation for producers striving to maximize efficiency and increase production. The intelligent oilfield is about more than data. It uses advanced technologies to analyze raw data coming out of oilfields and turn it into meaningful information that experts can use to improve production, reduce costs and streamline operations. The technology of future advanced automation systems will consist of analytics, knowledge based systems, expert systems, artificial intelligence, robotics, wireless technology and machine vision. These systems will be intelligent with smart instruments and will be connected seamlessly to real time global communications systems. They will impact the owner operator's capability to achieve operational effectiveness and profitability across the complete supply chain.

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