

IoT for Field Operations – Artificial Lift and Autonomous Well

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Abstract

Digitalization of Well operations and Artificial Lift is one of the most important improvement levers for Upstream. There are still thousands of unattended or non optimized wells in the field, which are operated without connection to control rooms, without detailed knowledge about their health status and without possibilities to optimize operations.

With the presented IoT based Well Automation Concept, Analytics and Intelligence is moving close to the field where the Artificial Lifts are operating. A comprehensive and modular concept combines all components from power supply, smart automation, and Edge computing in one cabinet. The solution integrates in existing environments like SCADA systems and operational data stores as well as to Cloud systems. We're showing an approach, how operational data from the single well can be integrated, analyzed and put in context with existing engineering and reservoir data, thus implementing a comprehensive view of the asset.

The lecture shows a modern IoT based Concept that combines intelligence at the edge with an integrated operations approach that leverages Analytics and Artificial Intelligence in the backend systems, thus enabling the autonomous well. Important aspects like scalability, openness and security of the solution will be explained.