Abstract

Smart Completions, Smart Wells and Now Smart Fields– Challenges Our Industry Face and How to Overcom

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The promise of fully automated and intelligent oil and gas fields is very tempting. Some envision turning reservoir management into an ultimate video game with engineers, scientists and managers sitting at their workstations in the office and guiding the hydrocarbon from the reservoir into the wellbore leaving almost nothing left behind. It all started with smart completions, and then came smart wells and now it has grown into the idea of smart fields. New hardware is manufactured and being improved routinely that can be placed downhole permanently and using fiber optics and wireless technology can send high frequency (almost real-time) data streams (pressure, temperature, flow rate, acoustic signals…) into the office. This high frequency data is dumped into data warehouses at a rate of terabytes per day.

Conferencias Distinguidas

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What are the challenges that our industry face in turning this data into information and then knowledge that can be utilized to make decisions and consequently turn the decisions into action? This needs to be accomplished through a robust feedback system in almost real-time. Where are the bottlenecks? Where can we look for solutions? How can they be implemented? Are we the only industry that has faced or is facing such challenges? To overcome these challenges we have to use the technology that others such as aerospace industry and the financial market have used in order to solve similar problems, successfully.

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