

Halliburton Deploys Virtual Remote Managed Pressure Drilling Services for First Time for Brazilian Operator

OUTSTANDING SERVICE QUALITY IMPROVES OFFSHORE DEEP WATER PROJECT

BRAZIL

CHALLENGE

- » Implement real-time virtual remote tracking system to monitor offshore deep water drilling project
- » Provide improved quality of service compared to previous service providers

SOLUTION

- » Digital twin which encompasses the entire control environment
- » Provide experienced team to analyze critical offshore well situations from remote onshore station
- » Review operational sequences based on well-planning meetings focused on applying lessons learned and best practices

RESULT

- » Successfully addressed critical operational situations encountered
- » Service quality increased by 50% with respect to certainty of execution
- » Increased confidence and focus of onboard operators, improving decision making
- » Aided continuous improvement process in terms of safety, performance, and cost
- » Adapted to operator's future remote operation needs

OVERVIEW

The Brazilian oil setting is driven by technology through a major operator in Brazil that continues to lead the digitization process. By investing in advanced digital technologies, the objective is to optimize operations and summon partners and suppliers in the search for solutions aligned with areas of technological innovation. The focus is on minimizing personnel risk, reducing costs, and enabling faster response times. This approach ensures the safety of individuals, streamlines expenses, and allows for swift decision-making and action when needed.

As part of this strategy, suppliers are positioned as central elements to help ensure competitiveness, security, and future value generation. The operator drives its suppliers to use innovative solutions in Brazil and abroad for testing and validation in real application environments to meet challenges and identify technologies with elevated potential for implementation and value generation.

Recently, the operator partnered with Halliburton's Managed Pressure Services (MPS) team for the first deployment of remote managed pressure drilling (MPD) operations. While this type of operation has been performed previously by competing service providers, Halliburton delivered an elevated quality of service during critical operational situations, potentially helping secure future remote operations projects for this operator.



CHALLENGE

The operator partnered with Halliburton to implement a real-time operations tracking system for a well in one of its primary deep water projects. This system needed to monitor drilling operations from onshore base stations to help minimize risks associated with the human cognitive factor onboard offshore platforms. This type of technology has been widely used on offshore platforms by this operator in other areas and has proven fundamental to ensuring operational efficiency and personnel safety.

SOLUTION

One of the keys to the Halliburton solution is the creation of a digital twin which encompasses the entire control environment – all essential operational data, as well as critical control and configuration data – readily accessible in the event of any rig issues or even simulations. The digital twin serves as a valuable tool, providing a virtual representation of the operation onboard and its associated control systems, enabling operators to monitor and manage operations more efficiently and make informed decisions based on real-time data. This ensures that comprehensive information is available to effectively address and resolve any potential problems that may arise during the operation, improving operational efficiency and optimizing the overall performance of the well.

Additional aspects of the solution included event recognition through smart alarms, reviewing operational sequences based on well planning meetings focused on applying lessons learned and best practices, following up on cost-optimization initiatives and risk analysis, reviewing software settings critical to MPD operations, intervention of the offshore system in the event of necessary troubleshooting, and improved communication between the operations team and the strategic decision-making team.

RESULT

During this project, various operational situations were encountered that required intensified attention and were successfully addressed, such as dynamic pore pressure testing, severe losses, riser gas, low depletion zones in the middle of the drilling phase, and even drilling/mud rollover guided only by the GBSetsPoint™ real-time hydraulics model because of PWD tool failure.

Overall, service quality was increased by 50% with respect to certainty of execution. Halliburton's solution increased the confidence and focus of onboard operators, generating value to the operator with respect to accurate decision-making, ultimately aiding the continuous improvement process in terms of safety, performance, and cost.

Lastly, because this type of service will be required on future projects, this effort was a means for Halliburton to adapt to the operator's future remote operations needs.

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