IADC DEC Q2 2026 Tech Forum,
"The One Rig Approach: Driving Peak Performance Through Interoperability"

Tuesday, 2 June, 8:30am-12:05pm
*Venue: **Noble**, 2101 CityWest Blvd Suite 600, Houston, TX 77042*

The IADC DEC's Q2 tech forum seeks to establish a rigorous and shared understanding of the current state of data interoperability within the drilling industry, encompassing an assessment of existing contributions, established frameworks and the technical and commercial gaps that remain. Central to the mandate is the collaborative identification of viable strategies, best architectural practices and actionable next steps toward the adoption of open, contractor-neutral, vendor-neutral and standards-based interoperability, an approach that is increasingly recognized as the necessary foundation for the responsible and effective integration of emerging technologies into drilling operations.

Special thanks to our event host Noble!

Agenda

08.30-08.45 Welcome – Matt Isbell, DEC Chairman; facility and safety briefing – Noble; introduction to event – Kenza Ait and Mohamed Elshabrawy, DEC Board members

08.45-09.05 **"From Fleet Homogeneity to Global Interoperability: An Architectural Approach to the One Rig Vision,"** Paul Landrio, H&P

H&P has historically benefited from a high degree of interoperability across its U.S. land fleet through intentional standardization of rig equipment, control systems, and technology enablement platforms. While this homogeneity enabled consistent deployment and integration of digital and automation technologies at scale, recent fleet expansion and modernization efforts have introduced new challenges common across the industry: heterogeneous rig designs, diverse control systems, and contract-specific technology environments.

Rather than pursuing point-to-point integrations or proprietary solutions, H&P has taken a deliberate architectural approach to interoperability; one that emphasizes deploy-once technology models, hardware abstraction, and containerized integrations capable of running consistently across different rig configurations. In parallel, modernization of edge compute and controls infrastructure has enabled tighter coupling between real-time operational data at the wellsite and governed cloud connectivity for monitoring, management, and continuous improvement.

A critical component of this approach is data consistency. As drilling workflows increasingly rely on real-time optimization and closed-loop automation, time-delayed and vendor-specific data streams limit the ability to act at the speed of operations. H&P's ongoing efforts focus on normalizing and structuring data as close to the source as possible, at the edge, while maintaining flexibility for operators, service companies, and technology partners to consume and act on that data using standard interfaces.

Through active participation in industry collaboration forums, including leadership

contributions within the DWIS community, H&P is helping advance early proposals for secure, vendor-neutral API specifications supporting use cases such as RSS downlinking and real-time drilling optimization. These efforts represent an initial step toward a more open interoperability model, one that supports automation performance requirements while reducing integration friction and expanding technology choice. This presentation will share lessons learned from transitioning between homogeneous and heterogeneous rig environments, outline architectural principles applicable across contractors and operators, and discuss how edge-enabled, standards-based interoperability can serve as a practical foundation for the industry's One Rig vision, without prescribing specific products or proprietary implementations.

09.05-09.25 "**Managing Control Handoffs Between Rig and Cloud,"** William Fox, Corva
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Over the last three years, Corva has engaged with several drilling contractors on how best to manage hand-offs between the drilling rig's control system and remote cloud-based automation tools. While there is no single "right way," several best practices are emerging. This presentation will cover the following:
1. Safety protocols between rig and cloud including timeouts, HMI limits and tool limits based on manufacturer's specifications
2. Seamless hand-off between rig automation routines, such as the back to bottom procedure and cloud software
3. Hierarchy of action for dysfunction mitigation, examples including WOB overshoot and stick slip
4. The necessity of indicating which system is in control and telling the driller and other members of the team what the system is doing at any particular time
5. Managing who has control – what changes if the onsite representative and driller are not able to manage the automation directly?

09.25-09.45 "**Demonstration of the D-WIS Interoperability Framework Applied to Autonomous Drilling Operations,"** Benoit Daireaux, NORCE
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D-WIS is a subcommittee of SPE DSATS whose objective is to facilitate the integration of drilling automation and monitoring systems on the rig. An integration layer has been developed that resides between the external systems (advisors, acquisition systems, contextual data sources) and the automated drilling control system (ADCS). It standardizes the interaction between the many components involved during drilling operations, from data discovery and exchange to role definitions using digital rig action plans.

The framework was recently demonstrated on a real test-rig where several advisors seamlessly collaborated (i.e. without prior knowledge of each other) to conduct drilling operations. The test also demonstrated a full-scale installation of the applicability of the framework to advanced operations, since it enabled autonomous drilling by online decision making and dynamic replanning of the sequence of operations needed to drill the section.
The presentation will first provide an overview of the D-WIS interoperability infrastructure, reviewing the different components, and explain how those were used during the interoperability and autonomous drilling test.

09.45-10.05 "**How Platforms Are Reshaping Drilling Automation,"** Arima Ayanambakkam and Brandon Rosler, Nabors Industries
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This presentation discusses how a purpose-built platform architecture serves as a key differentiator in drilling systems, not merely connecting equipment but fundamentally extending machine functions beyond their original design intent. Through standardized interfaces and abstraction layers, the platform transforms rigid, siloed machines into composable building blocks that support new workflows and capabilities without hardware redesign.

Modern drilling operations demand more than standalone machines; they demand ecosystems. As the industry moves toward autonomous and semi-autonomous operations, interoperability emerges as a critical enabler, and the platform is what makes it possible. The discussion examines the role of the platform in enabling the integration of third-party applications, process automation functions and drill floor automation sequences, allowing operators to orchestrate complex tasks across multi-vendor equipment from a unified environment. We consider the broader implications for scalability, vendor-agnostic operations and the ability of drilling contractors to adopt emerging technologies with reduced integration effort.

10.05-10.20 Coffee Break

10.20-10.40 "Building a Data Quality Foundation for AI-Ready Drilling," Rob Blue, Juniper
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The drilling industry is moving toward automated rig systems, real-time advisory tools and directional automation. But these systems share a dependency that often falls through the cracks: The upstream data must be complete, consistent and correct.

This presentation covers an automated data quality system deployed across active wells in US unconventional basins. The system runs 29 deterministic checks daily across 7 weighted categories, including WITSML connectivity, survey completeness and sourcing, BHA component records, and loaded well plans. These are the same inputs that directional systems, steering tools and real-time advisories consume. If any are missing or stale, the downstream system has no way of knowing.

Replacing manual spot-checks with consistent automated inspection yielded immediate impact: Full-portfolio evaluation dropped from 6-7 hours to under 3 minutes, and time to identify data quality issues shrank from up to a week to less than an hour. At this scale, previously hidden gaps emerged: real-time feeds not connected on active wells, surveys sourced through low-fidelity paths, and incomplete BHA records. Not because data standards are lacking, but because consistent application across a growing portfolio isn't humanly sustainable.

The presentation covers specific examples, the design principles that make the system trustworthy (deterministic, auditable, no silent failures), and why getting this layer right is a prerequisite for any automation built on top of it.

10.40-11.00 **"Interoperability Framework for Drilling Automation Systems,"** Samba Ba and Gerardo Hernandez, SLB

Drilling automation has progressed from isolated control loops to increasingly sophisticated, data driven systems. It is difficult for all companies to agree to a standard way of working; however, if each player develops their solutions with this interoperability in mind, the benefit is having a framework on each layer of the drilling automation process.

This presentation talks about a layered interoperability framework that unifies rig equipment, domain intelligence, downhole systems and emerging agentic AI into an autonomous well construction process.

The first layer focuses on surface equipment automation. Rig OEMs have the expertise to control their equipment. Their automation layer should be flexible to accommodate different signals a protocols that enable the orchestration of drilling automation.

The second layer relies on companies that provide expertise on each drilling domain, such as parameters optimization and envelope protection. The focus should be on developing and refining their physics models to provide accurate representation of the real world, and working with the rig OEMs on the best data models so these insights can be used by the surface equipment automation layer.

The third layer addresses downhole tool integration. By incorporating downhole measurements, this layer enables closed-loop directional control. Standardized data exchange allows real-time downhole measurements to directly influence surface control decisions when combined with the context modeled by the drilling domain layer.

The fourth and higher layer introduces agentic AI capable of interpreting natural language instructions and translating them into actionable inputs for the automation framework.

Together these four layers establish a scalable vendor-agnostic interoperability framework that transforms discrete automation solutions into an integrated high-performing well construction system.

11.00-12.00 **Interoperability Panel: One Drilling Contractor's Perspective, moderated by Kenza Ait, Nabors**
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- Brennan Landry, Project Manager, Horizon56
- Drew Ryser, Technology Project Manager, Noble
- Paul Sullivan, Innovation Portfolio Manager, Noble
- Danielle Chrun, Senior Reliability Analyst, Noble
- Dustin Stringer, Global HSE Director, Noble
- Bernardo Braunstein, Manager Operational Technology Data, Noble

12.00 Adjournment & Networking Lunch (provided by Noble)