NOVOS cuts weight-to-weight times in half for reliable efficiency gains

Proven process automation platform significantly shortens well delivery times and improves consistency across diverse drilling applications

Background

Drilling campaigns demand safer, more consistent, and more cost-effective well delivery. While experienced drilling crews can optimize performance on individual wells, sustaining those gains across an entire campaign is difficult. Operators are increasingly turning to automation of repeatable tasks to standardize performance and replicate their best well outcomes across every well.

Results

Weight-to-weight time, the duration between when a drill bit stops drilling to make a connection and when it resumes drilling, is a critical measure of drilling efficiency and cost. Across multiple drilling applications, NOVOS consistently reduces these times, while driving continuous performance improvements.

During a 29-well land campaign, NOVOS was the rig's exclusive process automation system, reducing the weighted average weight-to-weight time by more than 45% as operations progressed from well to well **(Figure 1)**. An increase in connection times on one well that did not fully utilize NOVOS further validated the platform's impact.

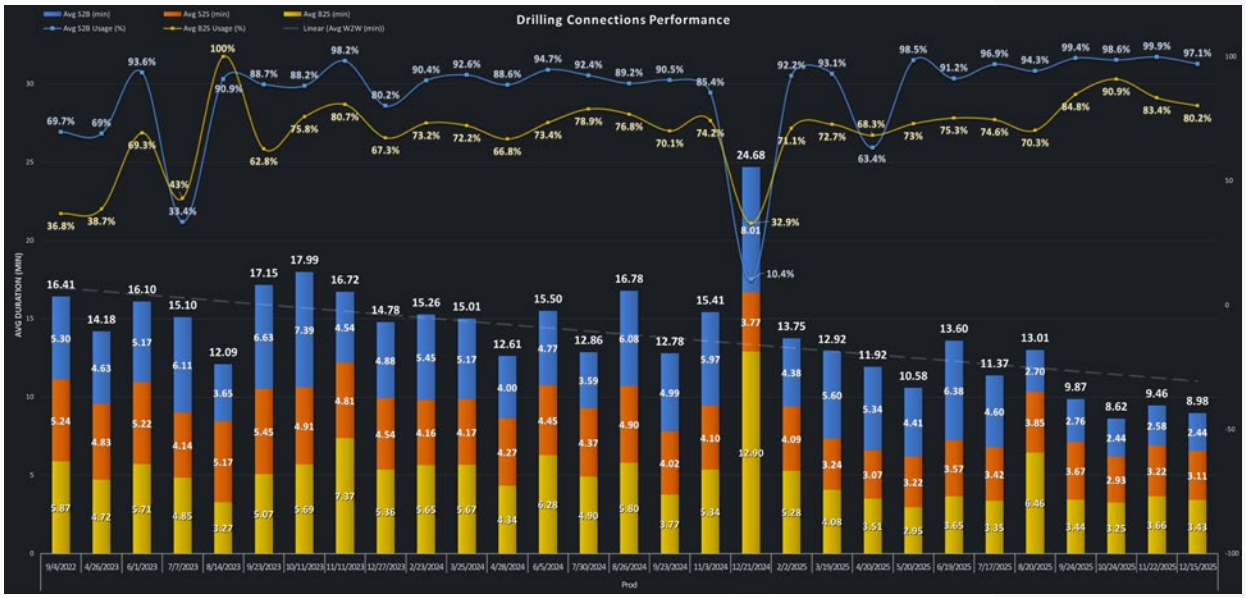

Figure 1: A drilling rig running only the NOVOS platform saw a 45% reduction in weight-to-weight times over the course of drilling 29 wells.

Case study facts

Across all drilling applications, operators using NOVOS achieved:

- 10-15% faster well delivery from start to finish
- 50% reduction in weight-to-weight times
- Up to 10X return on investment within 1-2 years

Solution

For more than a decade, the NOVOS™ automation system from NOV has been the industry's leading architecture and process automation platform. NOVOS connects rig equipment and third-party applications into a single standardized system, enabling seamless interoperability between applications and easier adoption across fleets. Deployed on more than 150 rigs and supporting a wide range of third-party apps, NOVOS automates repetitive drilling tasks to improve safety, reduce variability, and deliver consistent performance—independent of crew experience.

Further efficiencies were achieved offshore by integrating NOVOS with the Multi Machine Control (MMC) automated pipe-handling system. The combined automation ecosystem reduced weight-to-weight times by 66%, outperforming standalone solutions **(Figure 2)**.

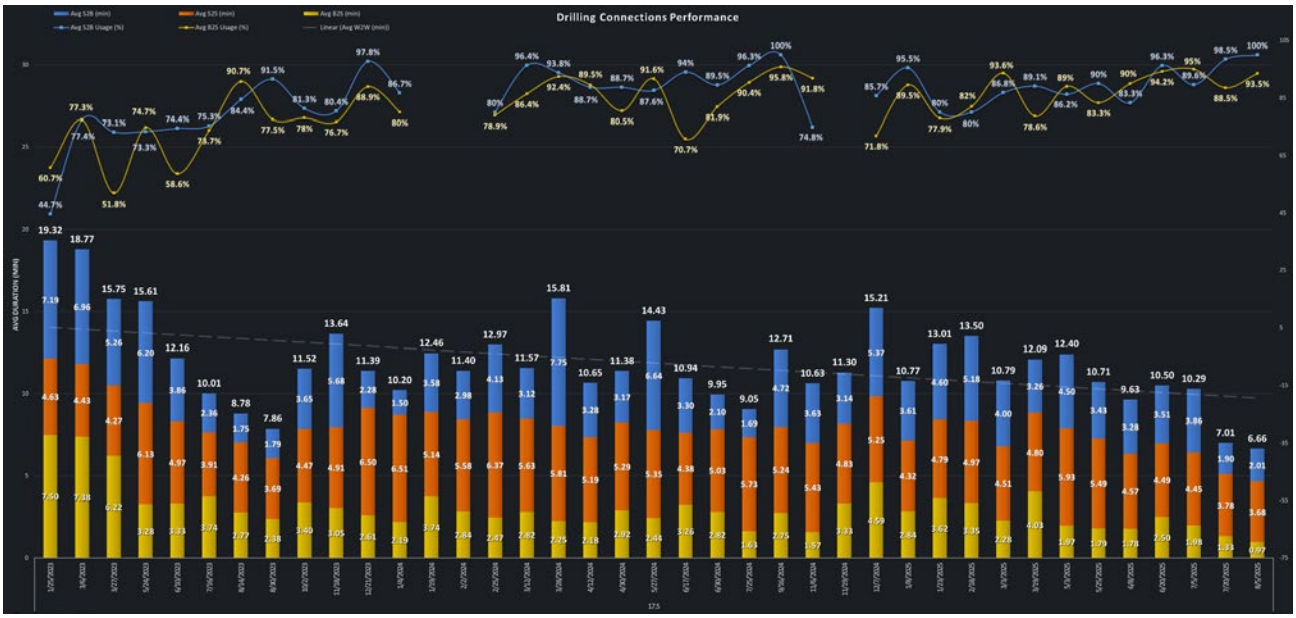

Figure 2: Combining the NOVOS platform with the MMC automated pipe-handling platform on this offshore drilling operation resulted in a 66% reduction in weight-to-weight times.

These improvements translate directly to faster drilling. In one onshore well, the NOVOS platform contributed to drilling the well 20% faster than the target time **(Figure 3)**. This equated to saving approximately seven days through improved connection performance, enhanced operations consistency, and integration with advanced optimization tools like the Kaizen™ Intelligent Drilling Optimizer.

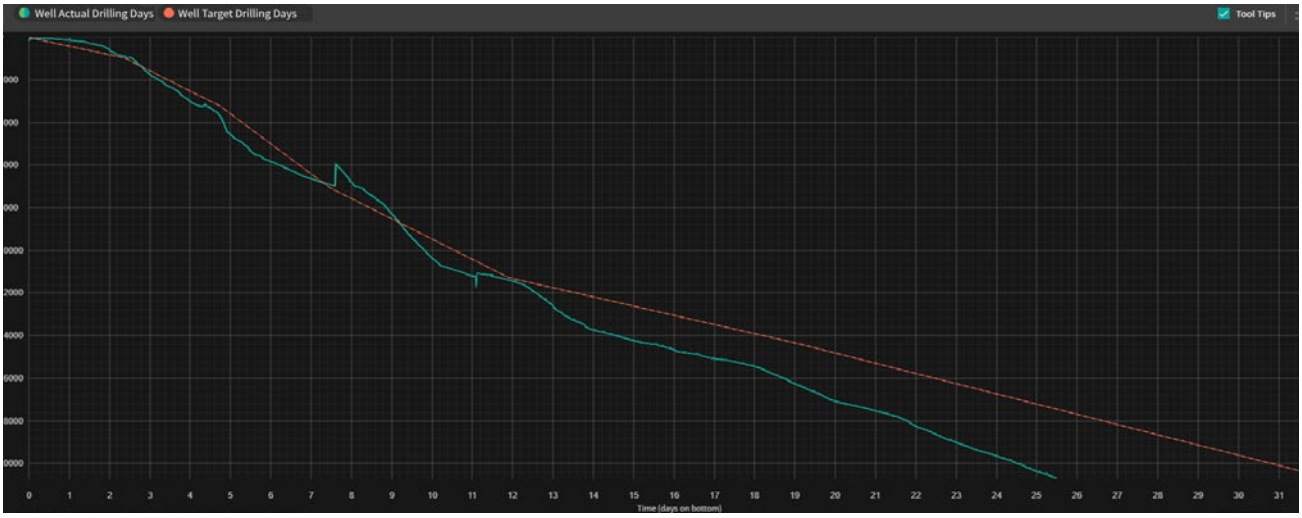

Figure 3: NOVOS delivered significant savings in on-bottom time while drilling this onshore well, contributing to a 20% savings in drilling days.