NOV Digital Services

KAIZEN
Intelligent Drilling Optimizer

KAIZEN™ is a drilling optimization application that has continuous learning capabilities enabling it to provide proactive drilling dysfunction mitigation and maximize ROP and MSE optimization. Employing Artificial Intelligence, it continuously evaluates drilling performance based on current wellbore conditions, compares it to offset well data, and detects environmental changes. This approach enables KAIZEN to instantly respond to changing conditions and provide optimal WOB and RPM set points.

To learn more about how KAIZEN can help you improve your drilling performance, contact your local M/D Totco™ representative.

Reduced NPT and equipment damage	Improved wellbore quality	Reduced well delivery time	Reduced well cost

Features

Smarter with every foot drilled
Continuously learns wellbore conditions and related impacts of RPM and WOB on dysfunction and ROP

More than MSE
Digital Twin models and Machine Learning algorithms ensure set points applied are considering all wellbore dynamics including:
- Identifying drilling dysfunction and proactively mitigating stick-slip, bit bounce, axial and torsional oscillations
- Avoiding drillstring natural frequencies to minimize drilling dysfunction
- Real-time distributed stress analysis to check for buckling and over stress, and torque and drag

On demand Response Tuning
Enables adjustment to tune performance towards ROP or MSE

Applications

Advisory mode
Sends recommended RPM and WOB setpoints for the driller to implement

Closed loop mode
Sends calculated setpoints directly to the autodriller

In Closed Loop mode, KAIZEN consistently achieves a higher level of performance than in Advisory Mode by continuously and automatically adjusting setpoints.

Minimum Software Requirements
- Closed Loop Mode - NOVOS 3.3.6
- Advisory Mode - RigSense 3.5

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