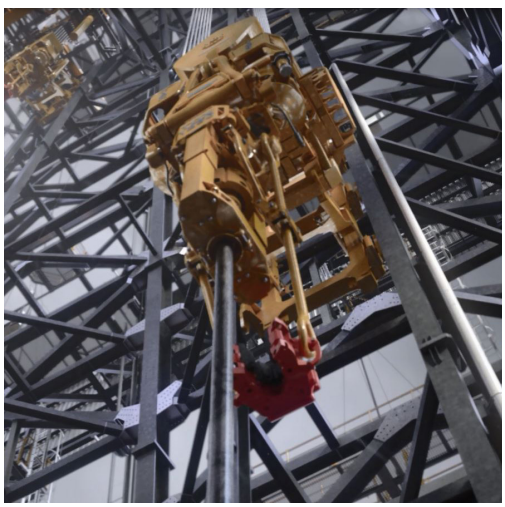
Auto driller technology

Maintaining smooth downhole dynamics

Downhole data advances rig floor surface automation and drilling efficiency

As the industry moves toward real-time downhole broadband networks, we learn more about drilling mechanics and the relationship between surface and downhole dynamics. We now understand that downhole dynamics need to be taken into account when controlling machines on surface. With the introduction of wired pipe, the industry is now able to perform true closed-loop control using high speed downhole Weight-on-Bit (WOB) feedback.

Pairing the axial dynamics with a torsional model minimizes downhole vibrations such as stick slip, lateral and axial vibrations. Reducing these vibrations decreases bit wear, reduces BHA failures and places less stress on drill pipe and drilling machines. Automating surface machines with downhole models enhances the drilling process with better consistency and gap reduction from new to experienced drillers.



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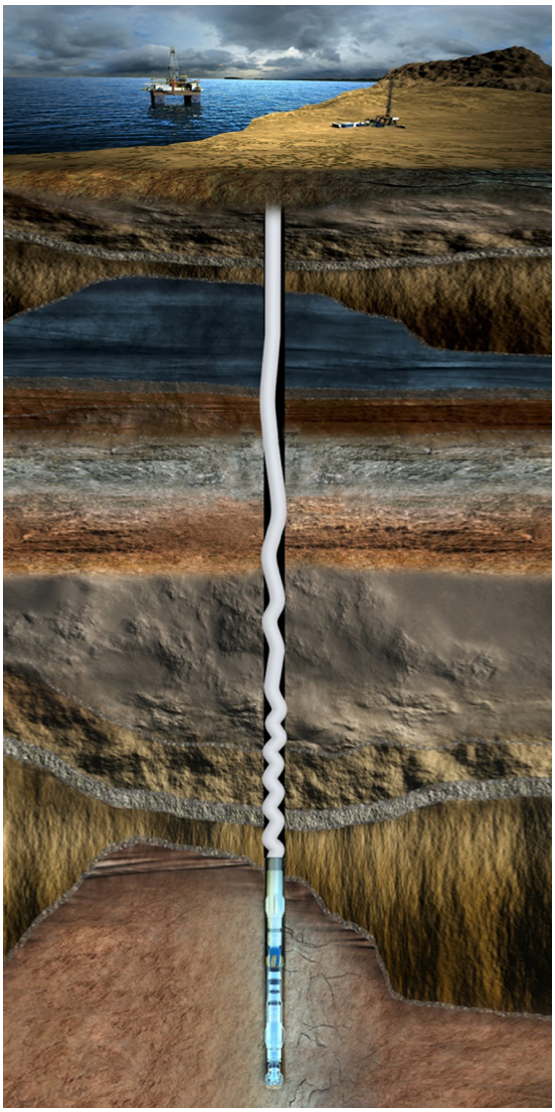
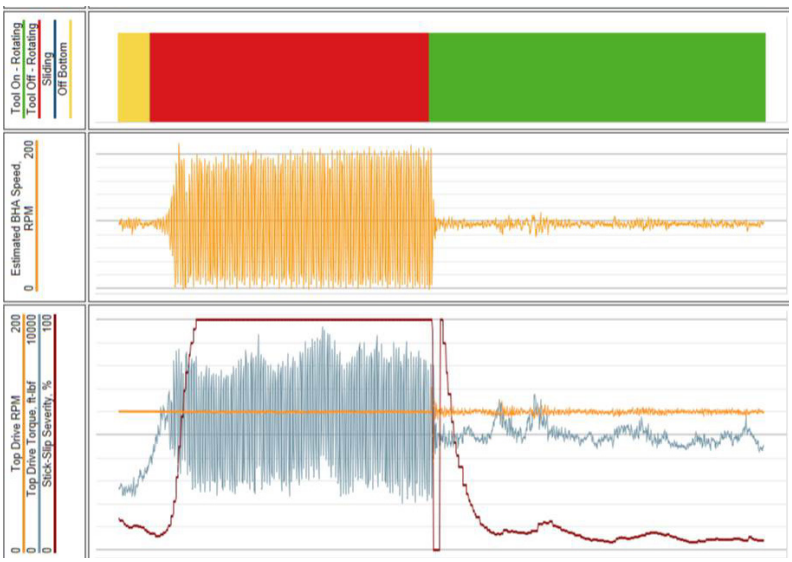


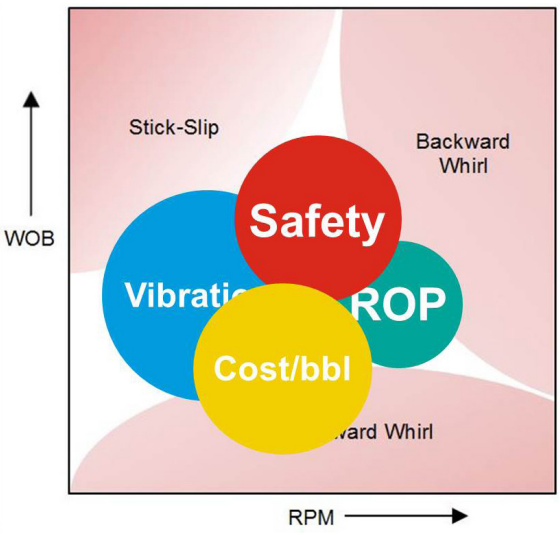
Key features

- Minimize downhole vibration by controlling surface WOB and RPM
- Detects, prevents and mitigates stick-slip
- Dynamic models quantify severity of downhole vibrations
- Dynamic models auto tune Rig Control System
- Accurately estimates downhole bit/BHA speed
- Wired pipe enabled closed-loop downhole weight controller
- True downhole control of WOB ensures your limits never exceeds

Benefits

- Saves significant time with reduced probability of early bit trips due to vibrations
- Increased ROP with Stick-slip and Auto Driller technology
- Saves wear and tear on bits, BHA, drill string and top drive
- More gentle control of machines reduces maintenance





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