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Becoming Aware of the Drilling Situation

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Overview

- Motivation
- Situation awareness
- Situation awareness on the rig floor
- Situation awareness in the RTOC
- DrillEdge:
 - Perception of situational elements
 - Supporting comprehension of the situation
 - Projecting the future status
 - Supporting decision making



Motivation



National Commission Offshore Drilling



"It is no longer acceptable to rely on a system that requires the right person to be looking at the right data at the right time and then to understand its significance in spite of simultaneous activities and other monitoring responsibilities."

"There is no apparent reason why more sophisticated, automated alarms and algorithms cannot be built into the display system to alert the driller and mudlogger when anomalies arise. These individuals sit for 12 hours at a time in front of these displays."



Situation Awareness





Overview





Situation Awareness on the Rig Floor



All Senses Help the Rig Crew to Become Aware of the Situation





Situation Awareness in the IOR



Manual Monitoring of Drilling Operations



Building a Mental Model of the Drilling Situation



DrillEdge: Percepting Situational Elements



Automated Recognition of Symptoms





Visual Verification of Recognized Symptoms





Situational Elements as Visualized in DrillEdge™



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DrillEdge: Supporting Situation Comprehension



Combining Information to Enhance the Comprehension



DrillEdge: Projecting Future Status



The Radar: The Right Information at the Right Time





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Case-Based Reasoning





Comparing Drilling Situations







Comparing Drilling Situations





Comparing Drilling Situations











DRILL**EDGE**™

Comparing Cases

Comparing Cases

Verdande Technology's Unique Real-Time CBR Cycle

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DrillEdge: Supporting Decisions

Providing Relevant Information

Providing Relevant Information

Thank you!

