Thema
Drilling Operations Support and Analysis Service
The right information delivered at the right time

The Thema* drilling operations support and analysis service offers a unique workflow, connecting data and information from your rig-site resources with our experts and knowledge.

Delivered by Geoservices analysts, the service supports, analyzes, and maximizes performance of all elements in a drilling project—both at the rig site and the office.

Through real-time data replication, all data produced at the rig site (together with contextual information such as well architecture, mud details, and string data) are sent to the customer’s office.

Enhanced communication

A dedicated Geoservices Thema analyst based at the customer’s office integrates all downhole and surface data. The analyst then delivers analysis of the current well status and detailed reports direct to the customer.

In addition to communicating the real-time reports, the Geoservices analyst also feeds back conclusions, models, best-practice recommendations, and detailed analyses to the rig-based team ensuring that information reaches the right people, at the right time.

Benefits

- Real-time integrated information for effective decision making
- Proactive and informed responses to well challenges
- Effective multidisciplinary collaboration
- Extension of rig monitoring to the office
- Events, lessons learned, and cause analysis
- Advanced monitoring
- Faster information delivery
Drilling Efficiency and Optimization

Applications

**Thema Drilling Efficiency (DE) Panel**

The DE Panel takes real-time drillstring analysis further and contributes to the assessment of the wear and behavior of the drill bit. Add-on applications can be aligned with the DE Panel to provide a comprehensive drilling efficiency and optimization service—including vibration mitigation, mechanical specific energy (MSE) management, bit-wear interpretation, avoidance of low ROP, prevention of tools lost in hole, and monitoring of downhole conditions—entirely from the surface. Results are equivalent to those provided downhole.

DE Panel capabilities:

- Assessing the bottomhole assembly’s efficiency response to drilling parameter adjustments
- Monitoring and analysis of MSE through parameter correlation and various, easily accessible crossplots
- Analysis of combined surface and downhole measurements (when available)—particularly valuable in complex well conditions, extended reach drilling, and while performing coring operations

**Real-time add-on applications:**

- High-frequency data
- Vibration monitoring and alarms
- Imported third-party time data
Hole Cleaning

Applications

**Thema Hole Condition Monitoring (HCM) Panel**

Integration of data collected from the hole cleaning applications provides real-time information about the status of the well, addressing challenges that affect highly deviated wells and horizontal wells, such as stuck pipe, borehole integrity, and possible packoff.

HCM Panel capabilities:

- Lithology information for correlation of torque increase and excessive drag with formation
- Torque and drag (T&D) modeling
- Real-time drilling parameters correlated with information from the T&D model
- Real-time acquisition of T&D data through activity filtering
- Real-time rheology parameters display
- Display and correlation of dogleg severity and LWD data
- Monitoring and follow-up of back reaming and wiper trips

**Real-time add-on applications:**

<table>
<thead>
<tr>
<th>Cuttings flowmeter (CFM)</th>
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<td>Pickup and slack-off models</td>
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Thema Well Balance Monitoring and Analysis

Applications

Thema Well Surveillance Panel
Primary well control is the foundation of all drilling operations. The Thema well balance monitoring and analysis service applications are dedicated to the real-time monitoring and presentation of data pertaining to well equilibrium.

Well Surveillance Panel capabilities:
- Time-based log including display of hole gain and losses computations (from the optional FLAG* fluid loss and gain detection service), and graphic pit trend follow up (with alarms)
- Follow up of pumpoff gas magnitude and composition, with the ability to overlap and compare the causes of gas peaks
- Active, real-time monitoring and recording of trip speed and trip tank volumes and variations

Real-time add-on applications:
- Flowback monitoring
- Synchronized event display (SED)
- Fluid displacement monitoring (FDM)
- Synchronized data at bit
- FLAG fluid loss and gain detection service
- Real-time display LOT/FIT

Drilling Operations Support and Analysis Service
The Thema service delivers real-time integrated information for effective decision making, bringing measurable impact to overall drilling operation success.