DecisionSpace® Horizontal Well Correlation Software

OVERVIEW

DecisionSpace® Horizontal Well Correlation software is designed to give onshore and offshore operators real-time subsurface intelligence to better optimize their drilling programs. This approach is beneficial given the importance of unconventional production and its associated increase in lateral well drilling. DecisionSpace Horizontal Well Correlation software, a component of the DecisionSpace Geosciences suite, brings together critical LWD/MWD data from both the horizontal and vertical segments of the well along with nearby offset wells to better understand stratigraphic boundaries and the ideal well path.

Operators can ensure their drilling activity stays within the desired high-producing zone by understanding precise wellbore position while simultaneously leveraging a real-time 3D subsurface model that is dynamically updated through the application. Unique geosteering workflows are also enabled with the application, so that if trajectory adjustments are required, they can be done instantaneously and have a look-ahead drilling plan generated to stay in the zone.

DecisionSpace Horizontal Well Correlation software provides additional geologic formation understanding through advanced integrated field visualization that allows users to overlay seismic data, horizon and fault interpretations, as well as "look-ahead" plans.

BENEFITS

**DecisionSpace Geosteering Mobile Enables Geosteering Anywhere, Anytime**

The industry-leading Geosteering Mobile solution offers the same, complete Horizontal Well Correlation workflow on a tablet device. This mobility fits well with the on-call expectations for geosteerers. Many must be on call 24/7 due to the criticalness of the wellbore staying in the sweet spot. This mobile option enables the geosteering to quickly interpret new log data on the fly as it becomes available, without having to access the full software suite as well as quickly request changes to the borehole’s position.

KEY VALUE

» First industry mobile solution that dynamically updates Dynamic Frameworks to Fill® sealed model while drilling
» Interactive horizontal log correlation tool utilizes real-time MWD/LWD data
» Integrated with DecisionSpace Well Planning software for automatic well plan updates while drilling
» Keeps wellbore in zone
» Data access onsite/offsite
» No file import or export
» Better decisions from latest data
» Target line creation for look-ahead well planning and geosteering
» Built on the DecisionSpace platform
Maximize a Lateral Well Program’s Operational Efficiency
DecisionSpace Horizontal Well Correlation module provides a vital capability to help increase the maximum reservoir contact of active lateral drilling, which ultimately delivers better results in unconventional plays, including improved production, reduction in required wells, and streamlined operations.

Improved Geosteering Accuracy
To maximize production, the well must contact the most productive reservoir zones and remain in that zone while drilling. Given the thin beds and small margin for error in unconventional plays, an accurate subsurface model is critical when even small deviations along the wellbore can move the drill bit out of the pay zone. DecisionSpace Horizontal Well Correlation module can improve geosteering accuracy by providing a dynamically updated subsurface model based on real-time LWD/MWD data, all available offset wells, and seismic data. In the DecisionSpace Geosciences suite, the 3D subsurface model and seismic backdrop provide a look-ahead view to anticipate fault crossings or dip changes.

High Resolution Subsurface Understanding
By correlating the predicted curve with offset wells and actual LWD/MWD data, DecisionSpace Horizontal Well Correlation module creates detailed interwell XYZ control points. Picking any of these detailed control points dynamically updates the subsurface model consisting of related surfaces, well and fault picks, to synchronize modeled surfaces with the latest real-time well data. These interpreted control points act as guiding interpretation for filling gaps between offset wells with new subsurface information, including dip variations, pinch-outs, or faults, all of which can be interpreted in the well correlation for an optimal subsurface understanding.

FEATURES

Interactive Horizontal Well-log Correlation
The software facilitates interactive correlations between a predicted curve and realtime LWD measurements in the visual context of interpreted surfaces and seismic data. The interactive workflow can provide a better understanding of the stratigraphic position of the drilling well.

Type Logs in True Stratigraphic Thickness
DecisionSpace Horizontal Well Correlation module creates Type Logs in True Stratigraphic Thickness (TST) to improve correlation accuracy. The curves are based on the proximity of the wellbore to a mapped structural surface using Landmark’s Dynamic Frameworks to Fill® topology engine.
Cross-domain Integration/Visualization

The DecisionSpace Horizontal Well Correlation geosteering workflow leverages the DecisionSpace Geosciences software’s unified 1D/2D/3D viewing and interpretation workspace. Integrated 3D seismic interpretation, full geologic mapping, and wellplanning capabilities ensure more accurate geosteering workflows. The OpenWorks® database’s multi-user data management, coupled with real-time connections, facilitates timely feedback between rig and office.

On-the-fly Synchronized Well Plans and Subsurface Models

As new correlations are made, the Dynamic Frameworks to Fill workflow triggers an automatic update to the subsurface model and maps. Even while drilling, subsurface models and maps remain consistent with the latest data, helping to stay in the most productive zones. This helps operators to correlate the actively drilling well to offset wells in order to predict and dynamically update the structural framework.

“Look-ahead” Geosteering

DecisionSpace Horizontal Well Correlation, coupled directly with Dynamic Framework to Fill’s 3D model updating, provides a look-ahead well-planning capability that more accurately locates the current position of the bit and predicts the stratigraphic placement of the wellbore along its current trajectory.

Look-ahead geosteering can help minimize unnecessary sidetracking and assists in planning development with an optimized number of wells.
SOFTWARE REQUIREMENTS
» OpenWorks 5000.10.3.01
» DecisionSpace® Base module
» DecisionSpace® Geologic Interpretation component
» DecisionSpace® Horizontal Well Correlation component

SUPPORTED OPERATING SYSTEMS
» Red Hat® Enterprise Linux®
» Workstation 5.3, 64 bit
» Windows® 7,64-bit
» iOS Tablet and “DSIS license” for DecisionSpace Geosteering Mobile only

Integration with Well Planning
DecisionSpace Horizontal Well Correlation utilizes award-winning DecisionSpace Well Planning technology to display wellbore uncertainty and directional survey information. The Target Line creation and reporting feature allows team members to draw a desired target wellbore trajectory line. Target Lines are drawn using the TD-to-Point or Two-Point mode and can be edited for wellbore look-ahead azimuth and look-ahead distance.

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Surface Apparent Dip Report
The Surface Apparent Dip Report organizes the calculated dip and the distance between surface segments using the well picks and the control points. The data, presented in a tabular format, can be organized to view trends and update the structural model or well plan data.

Fault Interpretation
Faults can be interpreted, adjusted, and extrapolated on-the-fly during geosteering. Once interpreted, faults can be modeled in 3D immediately within Dynamic Frameworks to Fill to accurately predict the subsurface geology.

DecisionSpace Horizontal Well Correlation and Geosteering Mobile increase geosteering accuracy and efficiency. DecisionSpace Geosteering platform makes it easy to geosteer anytime, anywhere.

Landmark offers solutions to help you deliver on your business strategies. For questions or to contact your Landmark representative, visit us at www.landmark.solutions.