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 in every scenario in which you have deviated wells, from production drilling in shale plays to complex geology in mature fields. 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.

BENEFITS
DecisionSpace is uniquely positioned to provide a tool for interpreting horizontal wells within a single application capable of storing, visualizing and interpreting E&P data in order to generate a single dynamically updatable model of the subsurface. Horizontal Well Correlation is a place you can interpret horizontal wells using a model-based stratigraphic technique in Real Time, alongside all other relevant sub-surface data and as part of a multi-user integrated data management system.

HORIZONTAL WELL CORRELATION USE CASES
» It can be used to better interpret a library of post-drill wells to help improve the structural model of the reservoir and ultimately improve well planning.
» It can be used on a planned well to generate an expectation of the log responses when the well is drilled which helps to mitigate surprises during drilling.
» It can be used to help identify when the reservoir’s stratigraphy is no longer laterally continuous, giving sub-seismic insight into the stratigraphy of the reservoir.
» It can also be used during drilling to re-interpret the reservoir, and accordingly, the position of the well trajectory to help better ensure the well remains in the target zone.

KEY BENEFITS
» 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
» 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

KEY FEATURES
» User defined trajectory change simulation
» Visualization of well position uncertainty
» Rapid measuring and reporting of relevant information needed by directional drilling
» Editing in vertical and horizontal views
» Fault interpretation
» Seismic backdrop
» Rapid creation of well path section views
» Integration with Dynamic Frameworks to Fill

Figure 1: The Multiple Survey Plan display during geosteering enables users to view and compare well plans to original path to help visualize the difference.
Methodology

Horizontal Well Correlation takes the pre-existing log signatures of the reservoir and translates the log signature into True Stratigraphic Thickness, giving the user a complete and accurate understanding of the stratigraphy inside the reservoir. The reservoir signature is projected along the wellbore to show the expected log response for a laterally continuous reservoir. The user can correlate the LWD/MWD logs of the well with the projected reservoir signature to identify adjustments to the structural model of the reservoir and inconsistencies in the lateral continuity of the reservoir. By correlating the logs the user creates control points along the wellbore representing the top reservoir. These control points are automatically fed into Dynamic Frameworks to Fill to create a structural model that is continuously updated in Real Time.

Key Value
» Use of True Stratigraphic Thickness logic
» Uses Real Time LWD/MWD data
» Keeps Wellbore in target zone
» Co-located with subsurface data
» Integrated with seismic
» More accurate structural modelling
» Target line creating for look-ahead planning
» Fully integrated with DecisionSpace

Figure 2: Cursor tracking technology enables geosteers to maintain an accurate directional course.

SYSTEM AND SOFTWARE

Operating System
» Red Hat® Enterprise Linux®
» Microsoft® Windows®, 64-bit

Software Requirements
» OpenWorks®
» DecisionSpace® Base Module
» DecisionSpace® Geologic Interpretation Module
» DecisionSpace® Horizontal Well Correlation component

DecisionSpace® Horizontal Well Correlation enables the interpretation of all horizontal & deviated wells with a Real Time data link & updates to a dynamically updatable structural model. This allows for better Real Time directional drilling decisions & well planning.

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