DecisionSpace® Dynamic Frameworks to Fill® Software

OVERVIEW

DecisionSpace® Geoscience suite provides a full range of integrated interpretation, mapping and modeling technologies. A next generation interpretation and mapping system, Dynamic Frameworks to Fill® workflow is at the core of Landmark integration strategy. Its underlying technology elegantly integrates surface and fault data from geology and geophysics and automatically generates fault polygons ‘on the fly’ as part of the interpretation and mapping process.

As such, Dynamic Frameworks to Fill workflow is the industry’s only system that allows interpreters to dynamically and iteratively validate their multi-surface frameworks (maps or models) during the interpretation process. When the interpretation is completed the fully validated 3D framework is immediately available for use in 3D (geocellular) earth modeling applications. Dynamically updateable frameworks are utilized within DecisionSpace Geosciences suite for many critically important workflows including: horizon mapping/framework construction, velocity modeling, well-top mapping via conformance technology (see below), geosteering and volumetric applications.

BENEFITS

Framework-based interpretation workflows help interpreters identify and fix problems while they are interpreting. This eliminates rework and improves prospect and development mapping accuracy. Dynamically updateable frameworks (and reservoir properties) allow inputs from new wells to be immediately incorporated, which keeps the overall geologic model evergreen and ready for successive workflows. All this can be accomplished in a multi-user environment, where one framework can be updated and used by multiple geoscientists simultaneously. The result is efficient, collaborative, and trustworthy models.

KEY BENEFITS

» Collaborative and efficient models
» Confidence in results
» Seamless integration into other workflows

KEY FEATURES

» Multi-surface, framework-based interpretation supports ‘on the fly’ validation while working
» Automatic updating with edits or new data
» Conformance technology projects well tops onto seismic
» Automatic updating, while interpreting eliminates rework and substantially improves overall map accuracy and efficiency
» Structural framework used to generate and maintain updated velocity model

Figure 1: Dynamic Frameworks to Fill® is a part of many workflows enabled by Landmark products

“Frameworks is a game changer.”
E&P CHIEF GEOcientIST

“It’s the best seismic interpretation QC tool in the industry and it’s amazing how much quicker I can pick horizons.”
SEISMIC INTERPRETER
FEATURES

Dynamic Frameworks to Fill® Technology
High-resolution sealed frameworks can be built quickly using tops, seismic, and fault offsetting and conformance technology. The shared framework is dynamically updated as interpretations change and/or new data are added. Presentation-quality maps for all layers and properties become a byproduct of the sealed framework and can be created in minutes without manual fault-polygon digitizing and re-gridding.

Dynamic Frameworks to Fill® workflow is ‘Interpreter Friendly’
Interpreters highly value how frameworks-based interpretation significantly accelerates interpretation speed, while simultaneously improving map accuracy and eliminating rework. A key aspect of Dynamic Frameworks to Fill workflow is its automatic, dynamic updateability which lends itself to faster and more accurate interpretations.

Conformance Mapping – Using Seismic Horizons to Guide Poorly-Imaged Top Reservoir Surfaces
Conformance mapping leverages a classic concept in geology which asserts that in the vast majority of cases formation thicknesses tend to vary very slowly as compared to structural variability. When this assumption is believed to be valid (and there are exceptions worth noting), you can use surfaces that are well-sampled horizontally (e.g., seismic surfaces) to guide the mapping of surfaces with poor horizontal sampling (e.g., well top surfaces). The software then automatically constructs thickness isochores between the two surfaces and adds this thickness grid (downwards for top-down conformance and upwards for bottom-up conformance) to the guiding surface to model the well top surface.

Framework-Based Volumetrics
Explorationists need a quick and accurate methodology for calculating reserves on mapped prospects. Dynamic Frameworks to Fill workflow uses its 3D topology engine to create solid-body compartments where calculations of both gross rock volumes and full oil (or gas) in place can be made. These methods represent significant improvements in accuracy and usability over traditional ‘slicing’ methods or thickness grids.

SYSTEM AND SOFTWARE

Operating Systems
- Red Hat® Enterprise Linux® Workstation 7.4, 64 bit
- Microsoft® Windows® 7, 64 bit

Software Requirements
- OpenWorks® 5000.10.7
- DecisionSpace® Base module
- DecisionSpace® GIS component for GIS workflows