Geomodeling 2017.3
Fully Integrated 3D Interpretation

GVERSE® Geomodeling

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GVERSE® Geomodeling offers an extensive integrated solution for subsurface Geological/Reservoir Modeling. Detailed analysis of the reservoir is always crucial prior to final consideration. With GVERSE Geomodeling, making an informed decision is much easier as this application supports numerous types of data sources for comprehensive understanding of the petroleum system components.

The integrated solution combines geological, geophysical, petrophysical, and engineering data in a single environment, with real-time 3D visualization of the developing geomodel that helps interpret the results from different domains of geosciences and formulate optimized and cost-effective solutions.

Coupled with 3D modeling, get the maximum out of our GSM feature – an efficient tool in handling complex linked structural and sequential geometries in a seamless environment.

Benefits

Real-time Integrated Visualization of Results
GVERSE Geomodeling provides an integrated real-time map view, cross section view, and 3D visualization of a developing geomodel. Integrate petrophysical, geophysical, drilling, and GIS data into the interpretation and observe real time effect on a comprehensive Geomodel.

Quick and Easy

As compared to traditional tools, GVERSE Geomodeling allows geoscientists to load and display large datasets with minimum time and effort required.

Flexibility

Features like the ability to quick pick on Main Map view, clipping of 3D gird, developing fence diagrams, and creating regions and groups for wells offer greater flexibility in Interpretation workflows. Docking windows and panels provide the freedom to arrange the workspace as desired and saving complete state of the workspace facilitates the user to resume the work from where they left off.

New Features R2017.3

Modern Easy to Use Graphical User Interface (GUI)

Application Window redesigned on Windows Presentation Foundation (WPF) for better usability and user experience.

Better docking support and Ribbon controls

Fault Aliasing in 3D View

Visualize the relationships between the named fault and unassigned faults in the 3D View. Use the tools available in the **Fault Aliasing** toolbar to alias unassigned faults to the named faults. You can use the **Fault Aliases** tool to select the unassigned faults and then use the **Save Aliases** tool to add them as aliases to the named fault. The relationship is instantly updated in the 3D View. The **Fault Aliasing** toolbar is available on top of the 3D View by default.
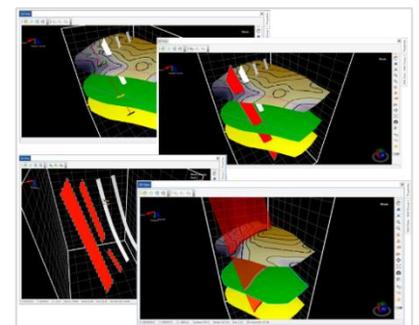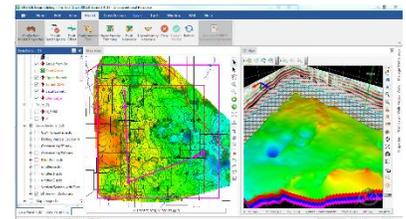

Microseismic Display and Animation

With Microseismic display in 3D View, analyze hydraulic fracturing stages, pressures, slurry and proppant characteristics, and corresponding seismic events in the treatment well. Select a well that has the Microseismic data, right click and choose **Show Microseismic** from the context menu to display microseismic events. To display the Microseismic Timeline dialog box, choose **Show Microseismic Timeline** option from the context menu of the selected well(s) in 3D View.
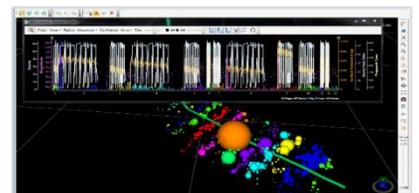

Improved Cross Sections list in 3D Panel

A list of all cross sections is available in Data Panel - 3D for better usability. Differentiating between open and close Cross Sections or Fences is easier with the help of cross section annotation symbols added next to open cross sections or fences. To view the list of cross sections in an interpretation, activate 3D View and expand the **Cross Sections** node in the **Data Panel – 3D.**
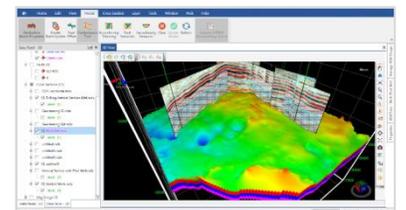
Picking Options Tools

Add, remove, or modify surface tops and fault cuts on wells in the 3D View, using the tools available on the **Picking Options** toolbar. The picking cursor, when placed on a well, displays the depth in MD and the curve value if a curve is applied on the well. You can also use the **Select** tool to click and drag a pick to change its depth. The **Picking Options** toolbar is available on top of the 3D View by default.
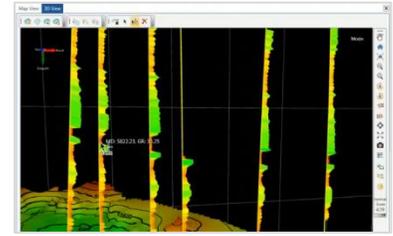
3D Cursor Tracking

Identify your position inside the model by tracking cursor in all views. Cursor tracking is available for 3D view, Map View, Fence, and Cross Section View. The 3D Cursor Tracking feature is toggled on or off by selecting View > 3D Cursor Tracking from the main application window**.**
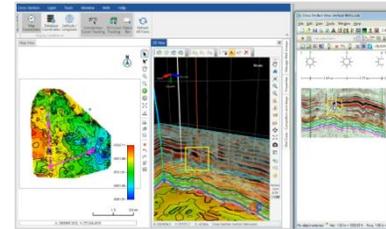
Optimize Geomodel

Update the geomodel by choosing to include or exclude specific wells to/from your interpretation without changing any settings. Simply add or remove wells in a geomodel from either of the views you are working in; Map View, 3D View, or Cross Section View. To remove well(s) from the geomodel; right-click the well(s) you want to remove and select **Remove Well(s) from Geomodel** from the context menu in Map View, or select **Remove Well from Geomodel** from the context menu in 3D/Cross Section View. To add a removed well back into the geomodel, choose **Add Well(s) in Geomodel** from the context-menu.

Calculate Wells Length and Percent in Zones

Determine the length and percentage of drilling wells within a target zone and save the calculations in ZoneManager or export the details in an ASCII file. To access the Calculate Well(s) In Zone dialog box, either select **Tools > Calculate** Well(s) In Zone option or right click the selected well(s) and choose Calculate Well(s) In Zone option from the context menu in Map/Cross Section View.

Key Features

Interpolation

Advance your understanding of the reservoir by analyzing different geological sections and identify lithofacies, stratigraphic sequences, and depositional trends from the logs. GVERSE Geomodeling offers multiple interpolation methods to help diagnose interplay between lithofacies, depositional trends as suggested by the log curve response.
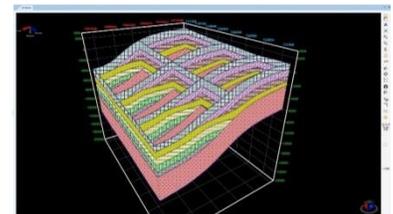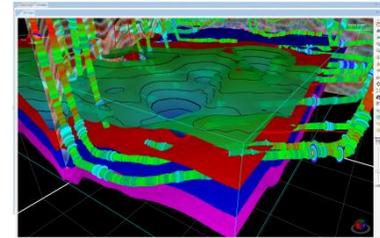
Fence

Construct a true Geomodel of the region by creating fence diagrams. This feature assists in construing and representing litho-stratigraphic relationship, pinchouts and truncations of units, unconformities, structural and stratigraphic traps and any other geological associations that exist in a region.
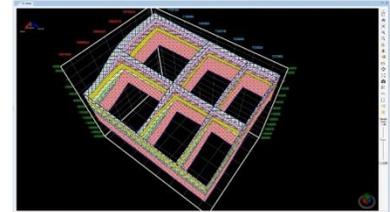

Considering importance of Petrophysics, our application facilitates in representing petrophysical modeling (porosity, saturation and geomechanics etc.) based on statistical methods. These petrophysical modeling results are used to populate the fence diagrams to comprehend and analyze general behavior of the reservoir and future prospects.

Fence over seismic

Justify the reservoir behavior by means of harmonizing acoustic impedance contrast with interpolated curve, lateral lithofacies variation, and relating structural geometries from both cross sections and seismic sections. Regional behavior of the reservoir can be quickly analyzed by applying co-blended Interpolated computed or raw curve responses over entire seismic.
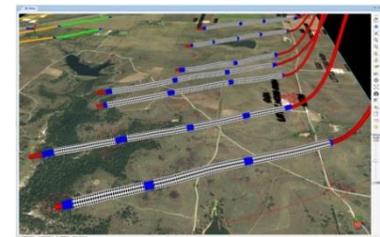

Clipping Planes

In a complex Geomodel, clipping plays a significant role in examining interrelationships and intrarelationships between surfaces and faults. Using GVERSE Geomodeling clipping tool, you can easily clip planes vertically or horizontally to keep a specific portion of the scene's geometry in focus and analyze trajectory of wells as they are drilled through Geomodel surfaces.

Integration

Observe the real time effect of topography and subsurface geology in your geomodel with tightly integratred and synchronous Map, CrossSection and 3D views. Designed for the geoscientists who work on integrated data sets that include petrophysical, geophysical, drilling, and GIS data, GVERSE Geomodeling introduces an integrated map, cross section, and 3D view of a geomodel which enables you to work in 2D or 3D views simultaneously. Using the Geo Surface Model tool, efficiently handle and update linked and complex geometries on all the views of GVERSE Geomodeling.
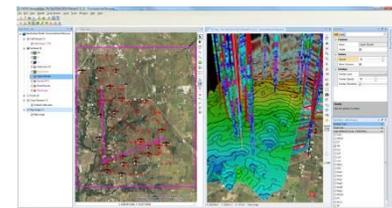
Perforation Postings

Display **Completion**, **Perforation Stage** and **Perforation** along the wellbore path in **3D View** to identify the productive zones of the targeted formations. Display of satellite image **along** the perforation data also helps to determine potential environmental hazards and plan areas for future prospect accordingly.

Requirements

The following sections list the system requirements for the GVERSE Geomodeling.

Software

The software that must be installed on the system running the application are as follows:

- GeoGraphix Discovery 2017.3
- LMKR License Management Tool 3.2 for GVERSE Geomodeling license

  The LMKR License Management Tool (LMT) must be installed to configure the license.

- Microsoft DirectX End-User Runtime (June 2010)
- Adobe Reader for selected help files (optional)

Operating System

To run the application, you need one of the following operating systems installed on your system:

- Windows® 7 Professional x64
- Windows® 7 Enterprise x64
- Windows® 7 Ultimate x64
- Windows® 10 Professional x64
- Windows® 10 Enterprise x64

Note: It is recommend to use the latest Microsoft® service packs and security patches. Geomodeling specifically requires Windows platform update KB2670838 installed on the machine, in case the operating system is Windows 7.

Hardware

The hardware requirements for this application are the same as the GeoGraphix hardware requirements.

Note: To run Geomodeling, it is recommended that an NVIDIA DirectX 11 compatible card be used. We recommend using the latest video drivers and Microsoft updates for your system.

Licenses

The following licenses are required to run the application:

- GeoGraphix Discovery 2017.3 license
- GVERSE Geomodeling 2017.3 license
  The GVERSE Geomodeling license is required to enable Model 3D view and Contours on Map view. Also note that FrameBuilder™ is part of the GVERSE Geomodeling license.

Note: Refer to the LMKR Customer Support Portal (http://support.lmkr.com/) for up-to-date information on the requirements.