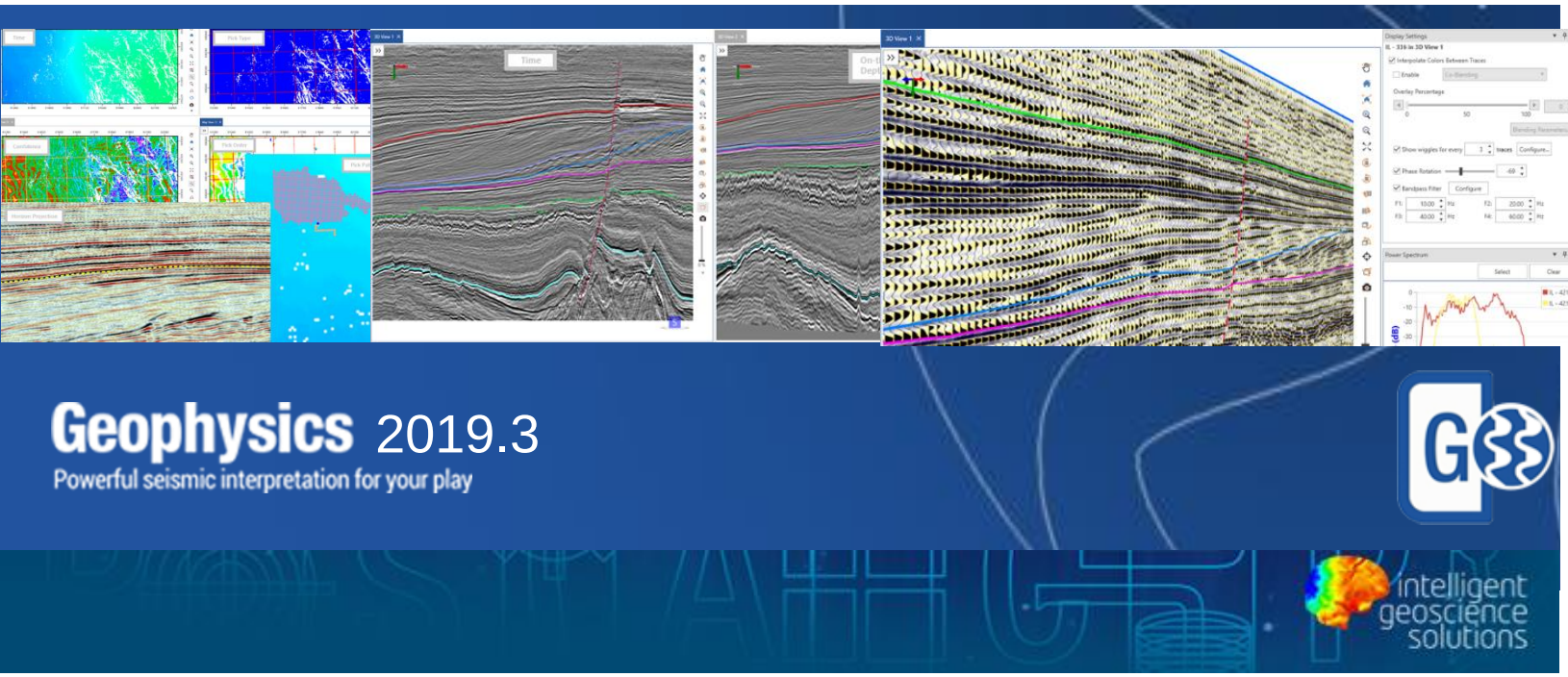

GVERSE® Geophysics

Seismic Interpretation Software

A powerful 2D and 3D seismic interpretation system for rapid prospect generation.

GVERSE® Geophysics software is a fully integrated 2D and 3D seismic interpretation system that provides a full range of fit-for-purpose interpretation capabilities, attribute analysis and mapping tools. Whether exploring complex structural areas or looking for subtle stratigraphic traps, today's geoscientist can use the many tools of GVERSE Geophysics to solve these otherwise challenging problems.

Key Benefits

Full Integration

Maximize your investment with full integration between our geological, geophysical and mapping tools. Access most everyday workflows within the base package & license.

Superior Visualization

Gain deeper insights into subsurface structures and data in our specialized 2D & 3D viewers.

Speed & Performance

Work with large seismic files and hundreds of thousands of wells without compromising performance even on off-the-shelf hardware.

Accuracy & Reliability

Make quick, accurate structural or stratigraphic interpretations with an extensive toolset for horizon, fault and geobody interpretation.

On-The-Fly Attributes

Obtain a better understanding of your seismic data with on-the-fly attribute computation.

Ease of Use

Leverage a simple, intuitive UI to focus solely on making decisions that matter.

Key Features

1. Seismic Interpretation

In-Depth Horizon Interpretation

Access multiple picking modes to mark picks & track horizons across multiple 2D & 3D surveys.

- QC features like confidence, pick order, pick type & pick relationships.
- Multi-Z horizon picking for 2D data.
- Snapping, smoothing, merging, dip & azimuth calculations and other operations.

Rapid Fault Picking & Analysis

Detect automatically or pick manually with flexible tools for vertical, horizontal & 3D displays.

- Rose diagrams for faster analysis & decisions.
- Correlation windows & fault projection to assist picking in noisy data.
- Fault polygons & heave calculations.

Geobody Analysis

Pick structures on volumes. Interpolate seeds or track signatures to extract geobodies from seismic.

- Calculate volumetrics, map thicknesses, convert to horizons, compute attributes.
- Drape data on geobodies or show intersections on sections.
- Create layers to bring geobodies to other GeoGraphix apps.

Integrated Well Top Picking

Add new or adjust existing picks for formation tops and fault cuts in a well directly from the geophysics app. View & interact with multiple observations for each formation or fault in a well.

Time-Depth Workflows

Comprehensive Synthetic Modeling

Simplified synthetic workflows in SynView – an integrated editor with no extra license required.

- Adjust & update synthetic with undo-redo in SynView or in 3D.
- Create & edit wavelets or extract from seismic.

- Calibrate, estimate, process & edit input curves.
- Drift, correlation & spectrum analyses. Calculate optimum time & phase shifts.
- Work with deviated wells.

Robust, Reliable Depth Conversion

Experience fast & reliable depth conversion with options suitable for all conversion requirements.

- Half-a-dozen types of velocity models including ability to use velocity cubes as models.
- Unique 3 component horizons & comprehensive conversion options.
- Dynamic depth conversion to keep backdrops in GVERSE Geomodeling up to date.
- Depth Mode to instantly convert time scenes to depth.
- Variety of velocity QC tools.

Data Management & Visualization

Effortless Data Management

Perform rapid interpretation in large 2D, 3D or combination projects with our 64-bit architecture. Versatile SEG-Y readers built to handle most commonly encountered scenarios.

Interactive Mistie Analysis

Easily balance 2D, 3D and 2D-3D datasets and auto-calculate phase, gain & time relationships.

- Add, edit & search shifts in a single location.
- Import and export shift values.
- Interactive line balancing to match lines quickly & easily.

Blazing Fast 3D

Use an engine built for subsurface data to view your seismic, wells and other data in 3D. The LOD format does not compromise performance even with very large seismic files. Voxels, blending, selective transparency and other advanced features let you visualize structures for deeper insights and better decisions for your play.

Versatile Seismic & Well Displays

Feature rich vertical, horizontal & three-dimensional seismic viewers with detailed well data posting.

- Load data into RAM for faster visualization.
- Wiggles, power spectrums, phase rotation, filters & other processing tools.
- Default color palettes based on data type.
- Display wellbores, tops & observations, well logs, production data, microseismic and more.

Interpret, Analyze & Map

Attribute & Surface Calculations

Compute attributes with multiple options in an easy to use interface.

- Flexible windowing options.

- Integration with Zone Manager.
- Surface-to-surface calculations.
- Extract seismic data at well locations.

Crossplot Seismic, Attributes & Logs

Create scatter plots for seismic, surfaces and well logs for insight into relationships between data.

- Crossplots for sections, horizons, wells or volumes.
- Select and display anomalies on maps & 3D.
- Complete annotation toolset.

Intelligent Facies Classification

Use the power of machine learning and neural networks to classify facies on horizons with automatic waveform classification by a self-organizing maps algorithm.

Indigenous Mapping Capability

Fulfill most of your mapping needs with a built-in mapping framework or leverage the full capabilities of our mapping tools with seamless integration with GeoAtlas.

- Multiple base maps with unique set of display parameters and color palettes.
- Comprehensive gridding and contouring options for maps and surfaces.
- Export or import layers to and from other GeoGraphix apps.

Ease of Use & True Mobility

Leverage the latest in technology to minimize your learning curve and focus on what's important. No more digging through tons of menus and dialogs to find what you are looking for. A true multi-screen, ribbon-based interface puts everything you need right in front of you. GVERSE Geophysics supports remote, desktop and mobile environments to accommodate some of the industry's largest regional projects while reducing the need for IT support.

What's New in 2019.3

1. Create End-to-End Synthetic Seismograms

- Create and edit synthetic seismograms in a sleek new interface.
- Work with deviated wells.
- Extract wavelets from 2D & 3D seismic data.
- Create averaged wavelets by combining multiple wavelets.
- View and compare seismic power spectrum with wavelets.
- Save wavelets at project level and access across interpretations.
- Apply processing to input logs.
- Estimate sonic from density and vice versa.
- Calibrate sonic log with checkshots and other T-D tables.
- Edit synthetic with multi-point stretch squeeze and auto-align functions.
- Save complete edit history in database to undo/redo edits anytime.

- QC edits with interval velocity and drift curve plots.
- Add custom track to view any available well log.
- Restore wavelets or input logs if removed from database.

Do More with Geobodies

- Map geobody thickness and surfaces.
- Create layers for geobody thickness or surfaces.
- Extract amplitudes within geobodies.
- Convert geobodies to horizons.
- View depth-converted geobodies in virtual Depth Mode.
- Edit seed picks on sections.
- Limit geobody tracking between two horizons.

Detect Faults Automatically

- Generate reusable fault information volumes for seismic surveys.
- Auto-pick segments or surfaces with a single click.
- Create fault surfaces in bulk for all faults detected in a seismic volume.
- Use rose diagram to analyze faults.
- Clean up clutter in a scene with interactive merging, deleting & visibility controls.

Utilize More Interpretation Tools

- Classify facies on horizons using an AI powered SOM waveform classification.
- Fill gaps in 3D correlated horizons in one click.
- Access all horizon operations directly in 3D view.
- Project faults on unpicked sections to assist manual picking.
- Select multiple faults segments for batch unassign, reassign or delete.
- Split a single fault segment into multiple segments.
- Save each fault as a separate file in bulk exports.

Crossplot Volumes and Attributes

- Create scatter plots for seismic volumes, attribute surfaces & well data.
- Plot at seismic sections, horizons, well locations or the entire volume.
- Highlight interesting data with a complete annotation toolset.
- View anomalies on maps and 3D.
- Save and share crossplots.

Build More Velocity Models

- Create velocity model from seismic velocities.
- Calibrate seismic-based velocity model with existing well control.
- Incorporate multiple observations in horizon-formation based velocity model.
- Build more reliable models with improvements in our triangulation algorithms.

Pick and Edit Well Tops

- Add or adjust formation tops and faults cuts picks in wells.
- View and interact with multiple observations for formation and faults picks.

Balance 2D Lines with Ease

- Add, edit and search shifts for all 2D lines in a single location
- Import and export shift values to and from ASCII files.
- Use a revamped interactive line balancing tool to quickly match lines.

Visualize Even More in 3D

- View attribute surfaces at source window locations.
- Display well microseismic data.
- View multiple observations for formation picks.
- Make features pop with a new lighting interface.
- Sync vertical and horizontal seismic windows with 3D displays.
- Set default vertical exaggeration for 3D scenes.
- Access navigation controls on the redesigned nav bar directly in your scene.

Improve Efficiency

- Minimize mis-clicks with color-coded action labels on all warning messages.
- Get more control on default palettes for all data types, including seismic data versions.
- Read start times directly from traces headers when loading 2D seismic lines.
- Sort formation annotation list by name or associated horizon.
- Control vertical exaggeration by ratio on seismic displays.
- Control well display by UWI or name.
- Follow well bore when creating well-to-well arblines.
- Take pictures of power spectra for your presentations.
- Select multiple 2D lines to export directly from map.
- Find faults for reassigning to faster with a redesigned menu.
- Access features in a redesigned “Home” ribbon.
- And a lot of performance and stability enhancements and bug fixes.

Requirements

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

Hardware

Minimum

- 2.4 GHz 64-bit processor
- 8 GB RAM
- Any DirectX 11.1 capable card comparable with Nvidia® GeForce GTX 430 with 1GB VRAM. DirectX is not shipped with GeoGraphix 2019.1. You must download and install it separately.
- 1366 x 768 screen resolution

Recommended

- Quad 3.2 GHz 64-bit processor
- 32 GB RAM
- Any DirectX 11.1 capable card comparable with Nvidia® GeForce GTX 1060 with 6GB VRAM. DirectX is not shipped with GeoGraphix 2019.1. You must download and install it separately.
- Solid state hard disk (SSD)
- 1920 x 1080 screen resolution

Licenses

The following licenses are required to run the software:

- GeoGraphix license version 2019.2
- GVERSE® Geophysics license version 2019.2