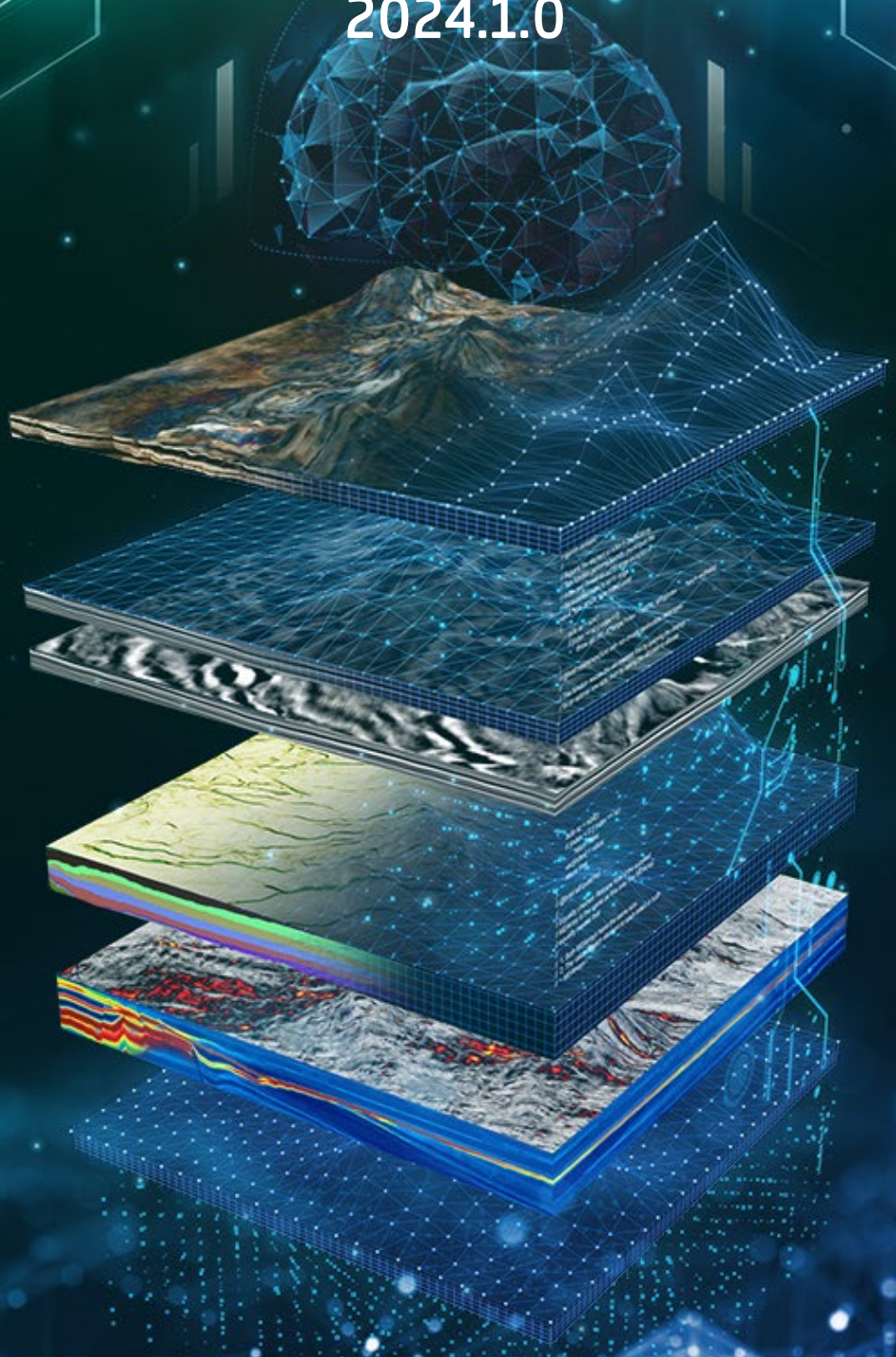
PALEOSCAN™ 2024

Global Seismic Interpretation Platform

2024.1.0



RELEASE NOTES

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PaleoScan™ 2024.1.0

PaleoScan™ is a new generation of seismic interpretation software, where geoscientists build a geological model while interpreting seismic volumes.

In this new release, the main developments are focused on:

- The implementation of a **Viewer Layout**, aimed at customizing 2D viewers, e.g., setting scale styles, changing fonts, adding legends, to promote results in reports and publications.
- Continuing our focus on reservoir characterization and offering optimal outputs for simulation, we developed a new workflow to apply **Well Marker-Horizon 0-offsets**. This workflow relies on a series of tools allowing us to maintain the accuracy of the interpretation reflected in our the RGT model ('Best Horizon Match'), to review the resolution of the targeted Horizons ('Horizon Resampling'), to cancel the vertical mistie between a Marker and its associated Horizon ('Fit Horizon with Marker'), and create watertight Horizons ('Fit Horizon with Faults').
- A new interface called the '**AI Gateway**' is now available to unleash the potential of AI on a server or cloud environment through the execution of embedded microservices and home-made scripts. We are launching this new add-on with the integration of the 'AI FaultAssist', dedicated to the automatic detection of faults. More microservices will come.
- The introduction of the **Custom Workflows** tool allows the creation of dynamic toolbars associated with a specific task or objective, or aligning with a user's preference. This new interface uses the existing tools and features of PaleoScan™.
- We continue to refine our analysis tools with, for instance, enhancements to the **Waveform Classification.** It is now possible to classify and map on Horizons based on the frequency, envelope, phase, and sweetness values of a volume. Additionally, classification can be performed on an Area of Interest (AOI) using Cultures or Polylines, with the option for classification smoothing.
- The **Licensing Management**, both at the opening of PaleoScan and once in the application, has been improved to be more invisible to users: the License Manager now handles the license server connection more smoothly; the extensions available in the license can be controlled through the Extension Manager and the activation of the extensions when using dedicated tools is silent for less interference in the users' workflow.

This document lists all the new features and upgrades implemented in PaleoScan™ 2024.1.0. A detailed description of each tool can be found in the "User Guide" or on the web site (www.eliis-geo.com).

New Features & Improvements

Marker-Horizon Zero-Offset & Vectorial Mapping

Feature	Description
Best Horizon Match	Inspired by the 'Marker QC Table', this new tool allows creating Horizons as near as possible from a series of well markers from the RGT model. Minimization methods are used to get the value of the RGT model offering the nearest position from a series of marker.
Horizon Resampling	An answer to the problem of Horizon's disk size and inadequate spatial resolution, this tool allows the user to undersample and oversample to obtain the desired optimal Horizon spatial resolution.
Fit Horizon to Markers	In complement to the 'Best Horizon Match', a new wizard allows applying a distortion on Horizons to obtain a strict 0-offset between the Horizon and associated Well Markers. The wizard permits customizing the radius of the distortion and QCing its impact interactively.
Erase Horizon around Faults	This tool enables instant erasing of a horizon around a fault network or a specific fault, within a radius determined by the user.
Fit Horizon with Faults	This tool is developed to create watertight Horizons on the fly, accurately aligned with a fault network opened in 3D. This tool allows as well smoothing of a horizon while keeping its fit to the fault network.
Surgical Horizon Eraser	This tool allows erasing/cleaning a horizon on the targeted fault block while preserving the fit to faults on the opposite fault block. The tool permits more accurate QC of the Horizon alignment with a fault network.

Viewer Layout

Feature	Description
Viewer Layout	A new dedicated set of widgets is available to customize the layout of the 2D Viewers (Horizon, Horizon Stack, InLine, XLine, Time-Slice) to easily and systematically reuse layout templates into reports and publications. The design of tools such as the orientation symbol or scales can be edited, and legends can be added to answer in an adapted way to compliment publication requirements.

Gateway and AI FaultAssist

Feature	Description
Gateway	A new functionality, the 'AI Gateway', is implemented in the PaleoScan™ interface, giving access to a series of embedded and home-made microservices that can take advantage of the power of your server hardware or cloud environment to execute demanding processes.
AI FaultAssist	Associated with the Gateway, our first embedded microservice, the 'AI FaultAssist', now offers the possibility to rely on AI algorithms to boost the automatization of the fault detection from a seismic volume.

Waveform Classification

Feature	Description
Waveform Classification	New this year, Horizon data can be classified within a Polygon/Culture to focus on an Area Of Interest to reveal fine facies variations or highlight geological objects. On top of the Amplitude, classification can now be performed based on the Envelope, Phase, Frequency, and Sweetness based on seismic trace attributes. Additionally, classification between horizons allows detailed geological analysis. Post-classification smoothing reduces noise and enhances map quality.

Licensing and Extensions

Feature	Description
License Manager	The License Manager (being displayed prior accessing PaleoScan™) now allows a more seamless connection to the available licenses through a smoother license server communication and clearer error messages when a license cannot be reached.
Extension Management	An 'Extension Manager' has been implemented to choose the extensions to be used by default in PaleoScan™, to manage the licenses in use and the number of seat available per extension. The Extension Manager also gathers the former 'What's new?' and 'Contact' sections, and includes a synthetic summary of the content of the core version of PaleoScan™ and of each extension.
Automatic Extension Activation	For a more seamless experience, tools pertaining to specific extensions (e.g., 'Strati Viewer', pertaining to 'Advanced Seismic Interpretation') now appear ungrayed if such extension is available in the subscribed license. The corresponding extensions

	get automatically activated when clicking on the tools as long as the number of maximum seats for the extension is not reached.
New Name for 'Advanced Interpretation' Extension	To avoid confusion with acronym 'AI', we renamed the former extension 'Advanced Interpretation' 'Advanced Seismic Interpretation'.

Others

Feature	Description
Read native VDS format	PaleoScan™ can now read volumes in native VDS format. While PaleoScan™ can use these VDS Volumes to compute any attribute or derived Volumes, for now, it keeps producing Volumes exclusively in PaleoScan format while in a project.
Udomore Interoperability	New Push/Pull tools are now available in the context menus of Horizons, Cultures, Polylines, Markers and Location Points (Project Browser) to easily transfer these items back and forth from PaleoScan™ to Udomore (from Seisquare) and vice versa. This interoperability with Udomore aims at offering a way to assess interpretation or depth conversion uncertainty for instance.
Metadata	A new feature located in the 'Properties' section, the 'Metadata' tab includes a set of useful information regarding 3D Horizons and Horizon Stacks, 3D Fault Sets, 3D Model-Grids, and Geobodies. Some of the information is generated automatically and noneditable ('Created on', 'Last modified on' and 'Size'), while others can be edited by the user upon need ('Comment', 'Confidence factor' and 'Status'). The metadata helps contextualize database items and facilitates data sorting and organization in a cloud-storage environment.
Horizon Mapped Data Transfer	A new tool, the 'Horizon Data Mapping Transfer' is now available in the 'Horizon' toolbar and allows transferring a data mapped on a source Horizon to a target Horizon. This functionality works for Horizons having a lateral intersection and is also possible across different vertical domains (i.e., between TWT and Depth).
AFE Improvements	The interface of the Automatic Fault Extraction workflow has been restructured to better distinguish the 3 steps of the workflow and the parameters relative to each step. The first step was enhanced and now offers choosing between classical structural attributes to derive the Fault Plane volume. The Fault Thinning step (2nd step) is now limited to one single optimized method to simplify the parametrization.
2D Fault Set in 2D Model-Grid	Faults, under the form of a Fault Set, can be included at the creation of the 2D Model-Grid to constrain the interpretation, ensuring patches are not wrongly auto-propagated across faults. Both 3D and 2D Fault Sets can be included in the 2D Model-Grid. Additionally, the 2D Marked Only Faulted RGT model can now be computed, creating a model based on the geometry of marked horizons considering the faults.
3D object intersection Optimization	The 'Ignore T/D' that was applied on each 3D object intersection with a 2D volume viewer is now applied directly in the viewer window. This modification reduces the necessary calculation time and grants much smoother navigation in volume viewers when an enormous number of 3D object intersections are displayed (especially dense fault networks).
High Resolution Colour Bars Compatibility	PaleoScan™ now handles 12-bit RGB colour palette (1984 colours) on top of only 256 before. This is a significant enhancement for the display if indexed

	colour bars (e.g., for the display of objects derived from RGB blendings and saved on one single channel).
Custom Workflow	A new interface allows users to construct customized workflows consisting of the actions/tools in the default existing PaleoScan™ modules. The created workflows are then added to PaleoScan's module pull-down menu.

Maintenance

Module	Description
Indexed Color Horizon Stack	The wrongly shown error message 'The file is corrupted' when creating an indexed color horizon stack is no longer displayed.
AVO	The gradient and Intercept parameters are no longer reversed.
Model-Grid	Fix of the error during horizon export from the Model-Grid Horizon List in the following formats: Charisma, Kingdom, and Geoframe (IESX).
	The name of the horizon now appears normally in the exported horizon file (Geoframe format) exported from the Horizon List of a Model-Grid.
	The RGT Model preview type can now be changed even when 2D Preview is off.
3D Model-Grid	Contour lines do not get removed anymore once a patch is deleted in the Horizon Viewer of the Model-Grid.
2D Model-Grid	Fix of the crash when toggling the options of the 2D Model-Grid (test parameters, 2D RGT model review, grid). Safety checks were added for further security.
	Fix of the crash when creating 2D Horizon Stacks from a 2D Model-Grid Horizon List.
Watertight Model	Fix of the crash when deactivating the 'Advanced Seismic Interpretation' license after cutting short a Watertight Model calculation.
2D Line	Fix of the issue of inconsistent layer intersection with 2D line sets. Layer intersections with 2D line sets are always displayed now.
	Fix of the issue of the absence of the well trajectories and logs present in the 3D Objects List.
Real-Time Attribute	Fix of a display inconsistency when saving a Real-Time Attribute as a Volume.
Trace AGC Calculation	Changed the default window size of the attribute, increased acceptable window size values, and optimized the equation used.

Geobody creation	The freeze encountered when launching geobody creation without a picked polygon is fixed. Geobody extraction is strictly inhibited if no polygon is selected.
Polyline	The polyline's name in the Properties window is no longer cleared when inserting a Polyline on a Horizon Viewer.
Horizon Stack	Fix of the Horizon Stack corruption that used to happen after canceling the data uncompressing process.
Well editing table	Fix of the crash encountered when using incompatible data as input for the well table.
Contouring and Isoline	Cancelation of the link between the Contouring and Isoline parameters (of Horizons and Horizon Stacks).
Volume Merging	Resolution of the problem of PaleoScan using the default temporary file path instead of the chosen one, which resulted in failed calculations.
Filling color	Switch from 'selection color' to 'Filling color' for better consistency and to avoid confusion.
Faults	The number of unsaved faults is now properly reported in the Message Window.
Sculpted 3D Cube	Optimized 3D display and navigation inside the 3D Viewer when creating Sculpted 3D Cubes between Horizons.
Well Log display	Log Curve display on 2D Lines and 3D seismic is fixed, renamed 'Left/Right' and 'Right/Left' to 'Symmetric Left' and 'Symmetric Right', respectively.

Licensing

PaleoScan™ 2024.1.0 can be downloaded from the Eliis web site. A personal user account is required. If you do not have a login and password to access to the Eliis extranet, you can apply for one by completing this form.

Eliis provides you a free 30-day temporary license to evaluate PaleoScan™ 2024. The temporary license will give you full access to the software with all add-on modules.

Project Compatibility

The PaleoScan™ platform is compatible with all PaleoScan™ projects.

Forward compatibility:
Projects saved with previous versions of PaleoScan™ can be updated to PaleoScan™ 2024.1.0 when the projects are being loaded:

- At the project opening, an update related to the well database is recommended to take full advantage of the new features.

A project update in 2024.1.0 may be necessary to benefit from the full capacity of the new Viewer Layout.

Backward compatibility:
Projects created with PaleoScan™ 2024.1.0 can also be opened with previous versions. However, some new objects or object properties might not be readable by earlier versions:

- Sessions saved in PaleoScan™ 2024.1.0 (cannot be restored),
- Horizons fitted to markers and faults, because these Horizons are vectorized,
- Customized toolbars (for custom workflows),
- Layout templates, and saved top views,
- HD colour bars (1984 colours).

Hardware Requirements

PaleoScan™ is a Microsoft Windows® stand-alone software, running on PC equipped with a 64-bit processor with the minimum requirements equivalent to the below mentioned items:

- Minimum system configuration
  - RAM: 16 GB
  - CPU: 4-core / 6-core
  - Graphic card: ATI ® Radeon / NVidia ® GeForce 512Mo
  - OS: 64-bit Windows® 10 / 11
  - Storage Drive: Hard disk with fast rotational speed (> 7200 rpm)
- Recommended system configuration
  - RAM: 64 GB
  - CPU: 8-core / 16-core (or single-core CPU can boost the computing speed)
  - Graphic card: 2 GB NVIDIA® / ATI® graphic card
  - OS: 64-bit Windows® 10 / 11
  - Storage Drive: latest-generation SSD