Jason Geoscience Workbench 8.4
RFS2 Release Notes

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Introduction

These release notes describe the new features and enhancements of JGW 8.4 for the Release for Services #1 of April 10, 2013. The main issues resolved in this version are also listed.

Warning: This document is for internal use only – not to be distributed to clients.

For instructions on installation of the software and system requirements, please refer to the Jason Installation Guide.

New in JGW

The new modules and features of JGW 8.4 are listed below.

New interpretation functionality

3D interpretation of horizons and faults is now available in JGW. Existing 2D interpretation has been improved with the addition of fault interpretation.

Horizon interpretation is possible in several modes, both in 2D (Section View) and 3D (3D View): Autotracking, Seed point mode, Line mode, and Continuous mode.

Auto-tracking includes a stop-at-fault feature.

3D horizon auto-tracking includes 3D region control and auto-gap function, as well as an auto-patch control for tracking around a spyplane.

Fault interpretation is available both in 2D (Section View) and 3D (3D View). Fault sticks are interpreted either as part of an existing fault or as unassigned sticks. Options to unassign and reassign sticks are available. In the 3D View, you can select fault sticks by clicking and dragging over the sticks you want to select.

Licensing for 2D horizon and fault interpretation are available in the base E+ package; 3D horizon and fault interpretation require an additional license.

Note that the 3D auto-tracker is designed for small to medium surveys. The horizon tracker, when initiated using the 3D mode from a single pick, only works if the mod file it uses for tracking fits into the remaining RAM on your workstation. This mode is also initiated when using the auto-fill mode after some initial horizon points have been
created. The workaround is to use the 3D Auto-Gap mode to track through your volume or to create a new working area.

Faults – New format and new tools

A new format for faults and three fault modules, Fault Manager, Fault Sticks Import, and Fault Sticks Export, are now available. The new data format represents both fault sticks and fault surfaces (.fault). Fault sticks are either imported from third-party software or EarthModel FT, or result from JGW fault interpretation. Fault surface interpolation methods are the same as those available in EarthModel FT, either cubic spline or 2.75 D algorithm. This helps to streamline the workflow for creating stratigraphic grids in the Jason suite. Map View, Section View, and 3D View can load and display faults from .fault files. The fault display attributes have been standardized between the three viewers.

With the new Fault Manager module, you can see fault domain (time or depth) and select a solid fault color for display purposes. You can also find how many fault sticks exist in a fault, which surface fitting method is currently being used, and what are the minimum and maximum values of a fault in either time or depth.

The Fault Sticks Import module imports ASCII-based fault files from external sources. Supported data format include line/CMP/Z or X/Y/Z based fault files in either time or depth. Optionally, a surface can be fitted to the sticks during import, using either a cubic spline or the 2.75 D algorithm.

The Fault Sticks Export module creates ASCII files containing the fault sticks either as line/CMP/Z or X/Y/Z. These can be imported in third-party software.

Both Fault Sticks Import and Fault Sticks Export modules support batch processes.

JGW version 8.3 stored faults as horizons within the JGW horizon file format. With this release the Fault Manager converts fault horizons into new fault files. To ensure full compatibility between versions, a tool is available to convert new fault files into old fault horizons.

VelMod TD Conversion has been enhanced to support .fault files in time-to-depth conversion and in assigning a TD relation (“TDC on the fly”). Time-depth conversion of fault data applies to the surface and/or the sticks.

Scatter data – New format and related enhancements

Scatter data is a new format introduced to represent sparse, ungridded data such as microseismic data. It is stored as a tab file that contains attributes such as fracking stage and amplitude, as well as X, Y, time, or depth. Scatter data can be loaded in Map View, Section
View, and 3D View and displayed with markers whose color, size, and shape are user-controlled.

VelMod TD Conversion has been enhanced to support scatter data in time-to-depth conversion and in assigning a TD relation (“TDC on the fly”).

The usertype list has been extended to support loading of microseismic data, including standard types for fracking stage and amplitude.

New 3D View

This release comes with a new 3D View. The JGW 8.3 Volume View had to be replaced to support 3D volume-based interpretation of horizons and faults.

The JGW supported datatypes that can be displayed in the new 3D View include:

- Well curves are rendered with lathes or colored cylinders around the well track. You can control the lathe’s scaling and color scale.
- Horizons are rendered in solid color with time/depth values. It is possible to drape an existing attribute onto the horizon.
- Faults are rendered in solid color or with time/depth values. Fault sticks and fault surfaces can be turned on and off independently.
- Seismic/property data is rendered on spyplanes or as volume, with user-controlled transparency.
- Solid model grids can be displayed along spyplanes or by using a fence display mode.
- Stratigraphic horizon files are displayed along stratal slices and spyplanes, optionally with grid cell boundaries.
- Scatter data is rendered with markers whose shape, size and color is user-controlled.

On-the-fly TD conversion was already implemented in Section View and Map View for data with an assigned time-depth relationship. This functionality was extended to the 3D View in this release.

The viewer now has several new mouse modes that include Select, Move, Interpret, Fault Stick Selector, and 3D Readout Cursor. The Interpret and Fault Stick Selector modes are new to this release.

Icons have been added for both new and existing functionality. Top/side/front view icons automatically move the view to that perspective. Others allow easy access to volume rendering, switch
between ribbon display modes for horizons and faults, toggle on and off the spyplane intersection, and control the vertical exaggeration. Keyboard shortcuts have been implemented for easy access to key functionality.

The 3D View shares a new configuration of other tools that are also found on the Section and Map views. These include the global, legend, data color and scale, cursor tracking, plot list, spyplane list, spyplane creation, interpretation, and snapshot functions.

An advanced caching mechanism was implemented to enhance performance in displaying the volume data (seismic/property and stratigraphic horizon files) and moving through it. You can specify a cache directory and clear it as needed. Files can be cached in batch mode in advance, before you need to display them.

Even faster than a cache on disk is a cache in RAM, provided enough RAM memory is available on the computer. A RAM Loader was implemented that allows loading into the RAM any volume data listed in the 3D View's plot list and displayed.

Note: this first release of the new 3D viewer does not include the following features available in the JGW 8.3 Volume View:

- **Tools:** Well Planning, Distance Calculator and Property Assignment (to map a seismic/property file on the surface of the horizon).
- **View:** Lighting controls and stereo mode, and multiple viewpoints (current version only saves and restores one viewpoint).

**ViewMaster – New module to support structural interpretation**

The new ViewMaster module provides a starting point for the new interpretation module, by coordinating interactions between the Map View, Section View, and 3D View:

- **ViewMaster** preserves shared contexts between the three viewers. The embedded viewers display the same horizons, faults, volumes, wells, scatter data, solid models, and stratigraphic horizon file data.
- The working area, the vertical zone, and the display attributes are consistent between viewers.
- Data is displayed along spyplanes that are also controlled from the ViewMaster. A spyplane is a general planar trace gate used to sample a planar slice through a data volume. Spyplanes can be inline, crossline, time/depth, arbitrary, segments (multiple arbitrary), well path, formation spyplane, or stratal slices from a stratigraphic horizon file.
• ViewMaster coordinates simultaneous picking of multiple faults and horizons and advancing spyplanes during interpretation. Faults and horizons interpreted in Section View or 3D View are automatically updated in the other embedded viewer displays, including Map View.

• ViewMaster allows for starting BodyChecking as embedded session. All data already loaded in ViewMaster are automatically available in BodyChecking, as well as the vertical gate and trace gate defined in ViewMaster.

New Seismic/Property Data Header Format

The caching mechanism implemented in the new 3D View uses the vertical gate of the seismic/property data. The header of the .mod files has been modified to include the minimum and maximum time (or depth) values of all traces. This information appears when inquiring a .mod file.

Any .mod file created with this JGW release will be generated with the new header format. The header of a file created with a previous JGW version will be automatically updated when loading the file into the 3D View. To upgrade all the .mod files of a project, a new function was added to the File Manager, Update Extent of Seismic/Property Files.

Full Waveform Modeling

The Full Waveform Modeling functionality is back in the Well Editor with a complete overhaul of the algorithm implementation. Full Waveform was removed from Jason 8v3 because the results did not compare well with other methods of making seismic synthetics in Well Editor, particularly in the presence of thin layers.

Internal only – Multi-volume data alignment

A new Multi-Volume Data Alignment module was implemented. Now data alignment can be performed on multiple volumes at the same time (mod or gather files) and in any one dimension (direction): inline, crossline, angle or offset, and file. For example, several partial stacks can be aligned in one run and you can also align Base and Monitor gathers for a 4D study.

Because all dimensions are taken into account together, time shifts are better estimated and the correlation volume is better constraint. User interaction and careful bookkeeping are greatly reduced.
Major usability enhancements

JGW’s general usability has been improved significantly, and enhancements are described in this section.

Launcher reorganization and icons

The modules in the Jason launcher have been reorganized to follow a workflow-oriented organization that spans from project management and data loading to inversion.

Several icons have been redesigned and other created for modules. Tooltips appear when a cursor hovers over icons. Modules can still be accessed via menu options.

Icons are organized in toolbars that can be split and docked. You can move them around to your preferred settings and this configuration will be saved for when you next open the Jason launcher.

Icons associated with datatypes, such as wells and horizons, have been redesigned and new icons added where necessary. Each datatype has a unique icon that is used throughout the viewers.

File selection

The File Selection application has been reorganized to Windows standards. Data files are listed with a time stamp and window sizes adapt to contents. Filtering and sorting options have been improved. Only relevant files are listed with sub-directories of files that correspond to defined filter options.

This new application supports all JGW data file formats, including JGW projects, solid models, and StatMod MC and RockMod realizations.

The file selection window indicates the file’s native domain and whether a TD relationship has been assigned to it.

Data Color and Scale, Axis Editing

The Edit Axis and the Edit Data Color and Scale dialog boxes have been redesigned. You can now link only a subset of datatypes present in the same class.

The Color Editor now supports the display of data histograms. A new point-based opacity control mechanism allows you to select one or more points and move them across the colors. This opacity ‘curve’ can also be bulk shifted to create new visual effects. Colors can be adjusted across data values using either a cyclic or shift-type behavior mechanism. The cyclic function rotates all colors across the values.
while the shift behavior moves a single color. A colored marker can be added to the color scale and moved; data points corresponding to that value are highlighted in the viewers.

Legends and display controls

The usability of the legends has been greatly improved:

- The legend panel can be docked and undocked.
- When you double-click on the legend numbers, the Data Color and Scale Editor opens.
- Duplicate items have been removed from Crossplots and Histogram legends. This is particularly noticeable when fitting pdfs.
- Cleaner fonts have been selected for displaying item names.
- A new highlighting option is available. When a display contains several panels and several legends, and the cursor is hovered over the display, a legend corresponding to the panel is highlighted.

Well tracks, tops, and log display control dialog boxes have been standardized between viewers. This change includes a common vocabulary.

Project management

A new tool was implemented to examine a project’s coordinates and locate errors such as multiple XY mappings for a survey.

Enhanced Visualization

All viewers

Enhancements common to all viewers are listed below.

- A vertical gate can now be saved in a viewer and retrieved by a different viewer (such as ViewMaster, Section View, or 3D View). In addition to defining a vertical gate with constant time/depth values or horizons, it is now possible to use multiple consecutive layers of a solid model.
- When loading a stratigraphic horizon file into a viewer, you can select the layers to be displayed. You can also make this selection in the Display Attributes window of the loaded file.
- When displaying a stratigraphic horizon file, the grid can be displayed with cell property values.

- To be more consistent with the display of stratigraphic horizon files, solid models are displayed as grid cells. They are no longer displayed using the “wall paper drawing.” Grid cells and grid lines can be painted with layer colors, and the thickness of the layer boundaries can be controlled.

- Cursor tracking is now implemented between 3D View, Section View, Map View, Well Log View, and Well Editor. It can be switched off at any time.

- The Trace gate display in Map View and Section View has been enhanced. All trace gates can be displayed on the map, and the display attributes are controlled by the user.

- A new option allows for selecting a user-defined multi-panel layout.

**Section View**

In addition to the enhancements required to support new fault and scatter data formats, the following improvements were made to Section View:

- A separate max distance for display onto a section has been implemented for wells, faults, and scatter data.

- An icon for aspect ratio has been added to switch between a fixed scale and unscaled display. This feature will minimize geometric differences between views and is most valuable during fault interpretation workflows. This icon applies the manual trace scaling as defined in **Global Settings > Trace Scaling Settings**.

- It is now possible to change the horizon selected for flattening a Section View display without having to close the Horizon Flattening window. JW.ROT.2003124163755

**Map View**

In addition to the enhancements required to support new fault and scatter data formats, the following improvements have been made to Map View:

- Solid model grids can be displayed in Map View.

- Direct input of stratigraphic horizon files was implemented.

- A Region Editor was added to replace the previous Polygon Editor. The Region Editor performs the same function as the Polygon Editor, but also provides the ability to be used as an inclusive
constraint on the horizon auto-tracking controls. The Polygon Editor is now only used within the Crossplots and Histograms module.

- Contours - An icon for creating a contour set was added to the right hand side of each panel in a multi-panel session.

Enhancements to Wells and Wavelets

Well Editor

The Snap Tops to Horizons functionality has been reinstalled in Well Editor for fine-tuning the TD relationship.

When creating a TD-relation based on the sonic log, you have to define a TD calibration pair. This step is now easier with the capability to click in the well panel to define the depth value and click in one of the seismic panels to define the time value.

Improved Analysis and Quantitative Interpretation

Crossplots and histograms

Support of stratigraphic horizon files (SHFs) in Crossplots and Histograms has been completed by using SHFs as discriminators.

A new icon is available for range editing options. After range editing is completed, you can exit the editing mode while keeping the range bars on the Crossplots and Histograms display, as well as the highlighting in related viewers.

Icons were added for usability, to access the crossplot layout, switch between time and depth, and between crossplot and/or histogram display modes.

The right-click menu options have been cleaned up to show only relevant options.

BodyChecking

BodyChecking has been integrated into ViewMaster as an embedded application and interacts directly with the 3D View. The embedded version inherits wells and property data available from the ViewMaster session. It also returns its results seamlessly to a ViewMaster session, thereby reducing user effort.
BodyChecking is still available as a standalone module that allows for editing and running batch jobs to apply the same criteria to different input files. This is particularly useful when you want to compare the BodyChecking results on several RockTrace runs with different inversion parameters.

In addition to the integration into ViewMaster, interface usability has been improved.

**FunctionMod – Support for stratigraphic horizon files**

Stratigraphic horizon files can now be used in any expression similar to the .mod format. For instance, you can compute Net Pay horizons from geostatistical inversion results without having to regrid stratigraphic horizon files to mod files. Resampling would potentially destroy the connectivity and stratigraphic information obtained from StatMod MC/RockMod. Table files generated in the Vertical Lithology Probability Editor (StatMod MC or RockMod) can be used as input in the new Stratigraphic Calculations mode to create 3D trends based on 1D vertical trends created in the Vertical Lithology Probability Editor.

Note that stratigraphic horizon files are not supported in the Advanced Calculations mode.

Various changes have been made to the FunctionMod interface to improve its usability:

- It is now possible to click directly in a cell of the Variables and Parameters table to make the assignments.
- Menu entries and dialog window titles are consistent.

**AVO Attributes Extraction**

The AVO Attributes Extraction module has been reorganized into three main windows: Session Setup, AVO Extraction Settings, and Generate. This organization follows the standard workflow: Input files and parameters are defined in the Session Setup window. All calculation parameters are set in the AVO Extraction Settings window. Calculation is started in the Generate window.

Datatypes of the extracted AVO attributes are changed. Average Stack is now stored with type Seismic, and Intercept and Gradient now have their unique datatypes. This allows for instance to apply BodyChecking directly on Intercept and Gradient volumes generated with the AVO Attributes Extraction module.

**Backus averaging in Well Manager**

The approach to effective medium was revisited in JGW 8.3, and Backus averaging was placed under user control in Well Editor. In this
module only one well could be processed at a time. Backus averaging is also available in the Well Manager and you can process several wells together.

Internal only – Geometric attributes on stratigraphic horizon files

Computation of geometric attributes, such as Dip and Azimuth, is now available for stratigraphic horizon files. The computation is done per microlayer, and the result is stored in a new stratigraphic horizon file.

Gather conditioning

The Gather Conditioning module features a new version of Uniseis library that includes the original GFLAT and MCPU processing capabilities.

Enhancements to Earth Modeling

Multi-Attributes Well Interpolation (MAWI)

The Multi Attributes Well Interpolation module was reorganized into three main windows: Session Setup, Edit Parameters, and Generate. This organization follows the standard workflow: Input files are defined in the Session Setup window. The calculation parameters are set in the Edit Parameters window. Calculation is started in the Generate window.

You can now select different attribute horizons for different layers of the solid model.

VelMod Time-Depth Conversion

VelMod Time Depth conversion module was enhanced to support the new fault and scatter data formats.

Time-depth conversion of fault data applies to the surface and/or the sticks.

Enhancements to Deterministic inversion

InverTrace Basic

Based on feedback received from users, a few changes were made to InverTrace Basic:
• User interface has been reorganized and parameters have been renamed.

• Default settings for the QC displays have been improved to match user requirements.

• Full bandwidth output cannot be generated if an explicit trend has not been defined in the Session Setup window. This will prevent the creation of inaccurate absolute inversions that will not tie future wells.

• You can no longer define trend horizons (for soft spatial constraints) without having defined a trend model.

• Displays of the QCs are limited to the time gate defined in the Session Setup. Note that the computation was performed using the correct time gate; only the display was not limited to this time gate.

Enhancements to Geostatistical inversion
(StatMod MC and RockMod)

Facies modeling

The creation and usage of multi-level facies has been improved. The amount of user interaction during setup has been decreased. You can create new lithology datatypes directly from the StatMod MC/RockMod user interface. Also additional levels can be created and removed as needed without having to recreate the whole multi-level tree. The lithology simulator can now be docked to the multi-level tree window.

Variogram modeling of a discrete property containing only two facies has been simplified. You only have to specify one single variogram model for the two types.

The Vertical Lithology Probability (VLP) trend editor has been enhanced to work on stratigraphic horizon files instead of just well logs. This improvement streamlines the critical QC comparing the posterior proportions in the volume of inverted facies with the prior trends imposed on the model. Tables created in the VLP utility can be used in FunctionMod to populate a stratigraphic horizon file (new stratigraphic mode for computations). Most of the panels of the VLP editor can now be docked or undocked.

The computation of experimental variograms on horizon data has been sped up by several orders of magnitude when the horizon contains undefined values. Data transforms associated with the experimental variogram calculations were simplified.
Streamlined QCs

QC tools have been added that check for the consistency of input data. It checks for the presence of undefined values in the seismic data or in the 3D probability trends prior to the run, and consistency between prior discrete probability trends and well logs, avoiding an artificial bull’s eye.

A new QC mode is available that allows for the following:

- QC plots displayed when hovering with the mouse in the Mode window (Simulation, Inversion, or Cosimulation) corresponding to the realization being QCed
- Quick access to the html page of a run
- Quick access to the automatically generated Map View, Section View, and Well Log View QC sessions. As part of the effort for improved QCs, the default settings of these QC sessions were improved.
- QC mode is available only for single realizations.

All information about the run (settings and QCs) is recorded in the index.html page. This page was reorganized and more sub-pages were added:

- List of wells used per property - The page contains the following information: for each property and for each requested interval, the list of wells specified and the number of measurements that were found per well.
- All messages (info, warning, and error) from the new centralized internal logging system are stored in the message.html page for future reference.

Backus averaging

A rigorous Backus averaging method resamples elastic properties when upscaling from stratigraphic sampling to seismic sampling.

Performance and convergence improvement

Performance has been improved by optimizing processes, such as the proposal of modifications in the MCMC algorithm in the presence of seismic and the use of AverageBelief (used in 4D studies).

For small size runs (where the number of traces in the trace gate is lower than 2000), intermediate checkpoints are eliminated, significantly decreasing run time. The trade-off is that the run can only be restarted from the beginning if it fails.
Convergence of Jason’s MCMC algorithm has been enhanced in two key areas: the posterior facies distribution better honors the prior distribution of the facies and the imprint of the seismic data has been mitigated. This appears in all results in projects where the seismic did not cover the full extent of the tracegate.

User interface enhancements

The Quick Property Setup does not reset the selection made in the Seismic Inversion Parameters dialog box. This eases standard usage of the functionality where you may decide for a slightly different parameterization, but wish to keep the seismic and wavelet file selection unchanged.

Errors and warnings are now communicated to the JGW error system and displayed in a standard pop-up window.

Usability changes were made to the embedded viewers (Crossplots and Histograms and Variogram View), including the following:

- The Accept/Reject buttons were replaced by OK/Cancel.
- Options that are not used in Variogram View were removed both in the menu bars and in the right-click context menus.

The window where Seismic Parameters are defined was simplified and reorganized:

- The P-velocity model is now defined in a separate tab. The tab is disabled if neither TDC nor Ray Tracing is needed for the current run.
- The partial stack volumes are identified with labels instead of numbers.
- You can now select several seismic volumes (.mod files) at the same time.

Usability changes were made in the Edit Arithmetic Property window:

- Expressions were enhanced by adding the square root function (sqrt). Also, the lt and eq operators were renamed into lessThan and equals.
- The list of properties that can be used in the expression was simplified.

The Generate Results dialog box was reorganized and the available options improved:
• Random seed is now generated automatically with a random number generator instead of previous series of integers. Value can still be changed by user.

• It is now possible to directly generate multiple realization QCs as part of the run, rather than as a separate step. By default, this option is automatically selected if multiple realizations have been selected.

The Cosimulation run is easier to set up:

• Edit Cosimulation Property window has been reorganized with tabs.

• Default naming of output directories is more logical.

Other usability improvements include the following:

• The blind/constraint well selection dialog box was redesigned. Sample Data and Well Conditioning were divided into different tabs. Well conditioning is divided into blind and constraint wells.

• The Restart functionality, previously available via scripting only, is now accessible via the user interface.

• A solid model (by default the one selected in Session Setup) is now required to extract pseudo-logs, or compute Net2Gross on an existing realization. This has been implemented to increase compatibility with realizations generated by older versions.

### Issues resolved

The performance of various modules has been improved. Also many error and warning messages were rewritten to better explain errors and warnings and how to resolve them. The most significant issues that were resolved in this release are listed below.

<table>
<thead>
<tr>
<th>General</th>
<th>Issue resolved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usertype list</td>
<td>Types added to the default usertype list are now automatically added to the usertype list of a project when a project is upgraded to a new version.</td>
</tr>
<tr>
<td>Progress bar</td>
<td>&quot;Windows is not responding&quot; message no longer displays when you click on the progress bar while a process was running. This problem would occur on the Windows 7 platform only.</td>
</tr>
<tr>
<td>Color Scale</td>
<td>The scale on a property is no longer adjusted when changing the color scale and then using the Reset to Default option in the Color Scale Editor.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visualization</th>
<th>Issue resolved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend</td>
<td>Checkmarks of the probability color scale are now properly displayed.</td>
</tr>
</tbody>
</table>
### Issues resolved

<table>
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<tr>
<th>Map View</th>
<th>Map View no longer causes a crash when a snapshot is taken of a display with contours.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map View</td>
<td>The results of volumetric calculations are now shown in the bottom-right corner of the display instead of the middle of the display. You can now move the annotation without having to open the Edit Annotation window.</td>
</tr>
<tr>
<td>Map View</td>
<td>Area fill now properly accounts for different skips in different panels of a Map View display.</td>
</tr>
<tr>
<td>Map View</td>
<td>The Copy/Paste Plot List option now works properly with stratigraphic horizon files.</td>
</tr>
<tr>
<td>Map View</td>
<td>When retrieving a Map View session containing stratigraphic horizon file, data is shown properly.</td>
</tr>
<tr>
<td>Section View</td>
<td>Clicking on the scroll bar between the slider bar and the end arrow now moves the display 90% of the displayed area. This is useful when interpreting. If a user interprets to within 10% of the end of the current display, when he clicks to scroll &quot;one page&quot; he can still see the last point he picked.</td>
</tr>
<tr>
<td>Section View</td>
<td>Stratigraphic horizon files displayed over disconnected segments of a trace gate are no longer shown as connected over the segment boundaries.</td>
</tr>
</tbody>
</table>

### Analysis

<table>
<thead>
<tr>
<th>Crossplots and Histograms</th>
<th>When in Crossplots and Histograms mode, zoom is correctly synchronized between histogram panels and crossplot panels.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossplots and Histograms</td>
<td>Master Plot Control no longer fails when both wells and a lithotype are selected as Color and Plot Elements axes. The display was not properly altered according to the plot elements toggled on and off.</td>
</tr>
<tr>
<td>Crossplots and Histograms</td>
<td>The module no longer crashes when fitting a pdf in a crossplot containing two identical logs (where the correlation between the two logs was 1).</td>
</tr>
<tr>
<td>Crossplots and Histograms</td>
<td>When using the option to output seismic/property data within a polygon, data that were UNDEF in the original files were interpolated. This is no longer an issue.</td>
</tr>
<tr>
<td>Crossplots and Histograms</td>
<td>When switching the plot type from Crossplots and Histograms to Histograms, the colors of the data selected as plot element are no longer arbitrarily changed.</td>
</tr>
<tr>
<td>Crossplots and Histograms</td>
<td>When adding fits to properties per lithotype (or per well), the regression line is now displayed using the same color as the respective sample data being fitted.</td>
</tr>
<tr>
<td>FFP</td>
<td>When working with a subset of lithotypes contained in the selected lithology, the &lt;litho&gt;_FFP color scale contains all original lithotypes. Previously when you edited the color scale in the QC plots, an exception would occur.</td>
</tr>
<tr>
<td>AVO Attributes Extraction</td>
<td>The output of conditioned gathers no longer produces traces with a shift of one trace.</td>
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<tr>
<td>AVO Attributes Extraction</td>
<td>Saving conditioned gathers with a defined mute no longer takes up excessive disk space.</td>
</tr>
<tr>
<td>MAWI</td>
<td>Temporary stratigraphic horizon files are now removed from the output directory at the end of the run.</td>
</tr>
<tr>
<td>Processing Toolkit</td>
<td>It is now possible to apply trend balancing to more than one.</td>
</tr>
<tr>
<td>Analysis</td>
<td>Issue resolved</td>
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<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Seismic/Property file</td>
<td>A vertical gate defined by horizons.</td>
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<tr>
<td>Gather Conditioning</td>
<td>Temporary files are now stored in the project directory and removed at the end</td>
</tr>
<tr>
<td></td>
<td>of the run. The default /tmp directory is no longer overfilled.</td>
</tr>
<tr>
<td>Gather Conditioning</td>
<td>Existing index files are now recognized and do not need to be recreated.</td>
</tr>
<tr>
<td>FunctionMod</td>
<td>The default output data format for Seismic/property calculation has been set to</td>
</tr>
<tr>
<td></td>
<td>32 flot.</td>
</tr>
<tr>
<td>FunctionMod</td>
<td>The option Import 6vX transform was obsolete and has been removed from the File</td>
</tr>
<tr>
<td></td>
<td>menu.</td>
</tr>
<tr>
<td>FunctionMod</td>
<td>The shift function now properly assumes that the shift value is provided in</td>
</tr>
<tr>
<td></td>
<td>project units instead of SI units.</td>
</tr>
<tr>
<td>FunctionMod</td>
<td>Trigonometric functions now properly assume the units of the angle input and</td>
</tr>
<tr>
<td></td>
<td>output to be in project units and not radians.</td>
</tr>
<tr>
<td>FunctionMod</td>
<td>The predefined function Correlation now returns values between -1 and 1.</td>
</tr>
<tr>
<td>FunctionMod</td>
<td>When using a saved trace gate in the calculations, the name of the trace gate</td>
</tr>
<tr>
<td></td>
<td>is displayed instead of its parameters (line, CMP, increments).</td>
</tr>
<tr>
<td>Resampling from stratigraphic</td>
<td>Some spikes could appear when resampling a faulted stratigraphic horizon file</td>
</tr>
<tr>
<td>to model file</td>
<td>to a mod file. This is no longer an issue.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Earth Modeling</th>
<th>Issue resolved</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAWI</td>
<td>All temporary files are now removed from the output directory at the end of the</td>
</tr>
<tr>
<td></td>
<td>run.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deterministic Inversion</th>
<th>Issue resolved</th>
</tr>
</thead>
<tbody>
<tr>
<td>RockTrace</td>
<td>RockTrace no longer throws an exception when you optimize the SVD uncertainty</td>
</tr>
<tr>
<td></td>
<td>and the SVD threshold simultaneously.</td>
</tr>
<tr>
<td>RockTrace</td>
<td>You can no longer edit a trend when one is not defined. A warning is issued.</td>
</tr>
<tr>
<td>InverTrace Basic</td>
<td>You can now remove a trend model from the Session Setup. Before you could</td>
</tr>
<tr>
<td></td>
<td>change only to another file.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geostatistical Inversion</th>
<th>Issue resolved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode windows</td>
<td>List of wells used as sample, blind, or constraint wells are displayed in a</td>
</tr>
<tr>
<td></td>
<td>tool tip. Previously tool tips were illegible when the list was long.</td>
</tr>
<tr>
<td>Mode windows</td>
<td>You can no longer copy continuous properties defined within a discrete property</td>
</tr>
<tr>
<td></td>
<td>when the source and the destination layers do not contain the same discrete</td>
</tr>
<tr>
<td></td>
<td>property types. This would cause a crash.</td>
</tr>
<tr>
<td>Data files</td>
<td>Non-physical values are no longer accepted in files used as data files, such</td>
</tr>
<tr>
<td></td>
<td>as proportion trends, velocities for ray tracing, and varying noise volumes.</td>
</tr>
<tr>
<td></td>
<td>An error is now issued. Proportion trends and noise volumes</td>
</tr>
<tr>
<td><strong>Issues resolved</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>**must be positive; P-velocities must be in the range 10-10,000 m/s, and S-velocities must be in the range sqrt(0.5)<em>10-sqrt(0.5)<em>10,000 m/s.</em></em></td>
<td></td>
</tr>
<tr>
<td><strong>Pdf setting</strong></td>
<td>When fitting the pdf of a continuous property, the fitted standard deviation cannot be 0 anymore, even when all sample data points have the same value. This would cause a crash of the Variogram View.</td>
</tr>
<tr>
<td><strong>Variogram View</strong></td>
<td>Experimental horizontal variogram computed on a horizon of type ‘none’ will now display in the Variogram View.</td>
</tr>
<tr>
<td><strong>Variogram View</strong></td>
<td>Crosshair is now displayed in either the vertical panel or lateral panel(s) but not both simultaneously as there is no link between the two. It is shared between the two lateral panels if the anisotropy option is selected.</td>
</tr>
<tr>
<td><strong>Multi-level property</strong></td>
<td>All levels of the multi-level tree are now checked for required variogram stencils prior to starting the run.</td>
</tr>
<tr>
<td><strong>Multiple realizations</strong></td>
<td>When running multiple realizations, a copy of the session file is now stored in each realization directory.</td>
</tr>
<tr>
<td><strong>Seismic Parameters</strong></td>
<td>The user interface now enforces the seismic and wavelet to have the same sample interval. This also applies to the varying noise if selected.</td>
</tr>
<tr>
<td><strong>Vertical Lithology Probability Editor</strong></td>
<td>You can now model lithology types in the Vertical Lithology Probability Editor that are not present in the selected wells.</td>
</tr>
<tr>
<td><strong>Cosimulation</strong></td>
<td>QC plots are now generated when cosimulating a property using a .mod file as secondary property.</td>
</tr>
<tr>
<td><strong>Arithmetic property</strong></td>
<td>Arithmetic expressions can now handle user type names containing apostrophes, such as Poisson’s ratio.</td>
</tr>
<tr>
<td><strong>Stencil library</strong></td>
<td>The size of the stencil library has been significantly decreased, due to improvements made to the stencils. Note that stencils generated with JGW 8.3 are supported in JGW 8.4.</td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>Selection of properties in Utilities options (well log extraction, post run statistics) is now based on the stratigraphic horizon file name instead of the property type.</td>
</tr>
<tr>
<td><strong>Views QC session</strong></td>
<td>In the automatically generated Well Log View and Section View sessions, the display is now set up so that the ranges of datatypes ‘_in’ and ‘_out’ are linked.</td>
</tr>
<tr>
<td><strong>Inversion</strong></td>
<td>In some specific instances, slight algorithmic biases could in principle result in geometric patterns visible on multi-realization statistics.</td>
</tr>
<tr>
<td><strong>Simulation</strong></td>
<td>Accuracy of the initialization for simulation realizations has been improved.</td>
</tr>
<tr>
<td><strong>Well Constraints</strong></td>
<td>Propagation of the well constraints is improved when properties are defined with trend and residuals.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Other modules</strong></th>
<th><strong>Issue resolved</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>My License Packages</strong></td>
<td>The window now includes information about the software version for each license.</td>
</tr>
<tr>
<td><strong>Repair</strong></td>
<td>The Repair Incomplete File option now restores the .mhd file if it is missing and regenerates the extent information in the file header.</td>
</tr>
<tr>
<td><strong>Section View</strong></td>
<td>Gather horizons are not supported in JGW. To avoid confusion, it is not possible to input gathers while interpreting faults and horizons. Similarly, it is not possible to start the interpretation if you are displaying gathers.</td>
</tr>
<tr>
<td><strong>Gather Data</strong></td>
<td>The definition of depth gather data can now be edited.</td>
</tr>
<tr>
<td><strong>Create/Edit Tables</strong></td>
<td>It is now possible to remove more than one column from a table.</td>
</tr>
</tbody>
</table>
Project compatibility

With the exception of the conditions below, the 8.4 version is fully compatible with Jason 8.3. However, we recommend making a backup of the project before running 8.4 on any of your projects.

For StatMod MC and RockMod:

- Batch scripts that run with 8.3 can also be run with 8.4 and session files generated with 8.3 can be used in 8.4.
- Some utilities can now run on realizations generated with older versions: QCs -> Multiple Realizations, QCs-> Discrete Property Proportions, QCs -> Net to Gross Horizons, and Utilities -> Wells Logs -> Extract Pseudologs from Realizations
- A few utilities will still only run on realizations generated with 8.4: the QC mode and QCs -> Prior and Posterior Pdfs.

Planned and actual retirement

Planned retirement

Jason 8.4 will be the last version where the following functionality will be supported:

- Link to Landmark 2003
- Link to GeoFrame 4.2 and 4.3
- DevKit: Fortran API (C++ API will continue)

Please contact your local support office if this is an issue.

Actual retirement

The following operating systems and modules are no longer supported:

- 32 bit Linux operating system
- StatMod MC and RockMod on 32bit Windows operating systems.
• StatMod Analysis and StatMod Modeling. With the new functionality added to StatMod MC/RockMod, support of the StatMod Analysis and StatMod Modeling modules has been discontinued.

Contact

Jason provides software support to users with a valid maintenance and support agreement.

For software support, please submit a request online to the Jason office nearest you.

For general information, please send a request via our contact page.
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