

# SOFTWARE RELEASE NOTES

PRO 2017.1



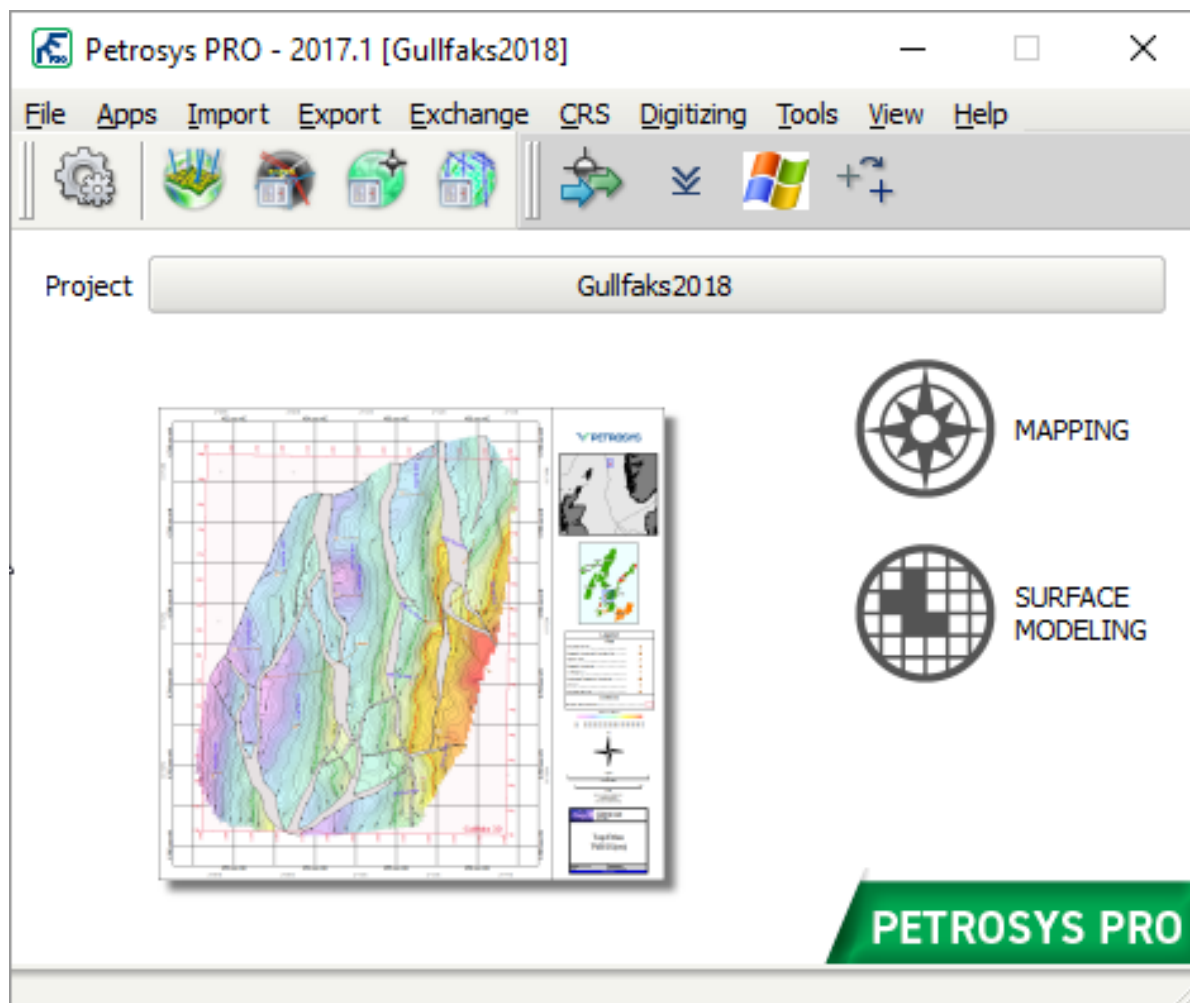
**PETROSYS PRO**

Featuring not only a new name and new look & feel but a huge advance in how corporate mapping standards are applied across regions. Petrosys PRO 2017 also features significant upgrades to the Gridding and Contouring, integration with Decision Space Geoscience and many other valuable enhancements.

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## Fresh, Contemporary Petrosys Launcher

Focusing on Petrosys core mapping modelling, the launcher has been re-vamped to have a clean look. The SDF, WDF, Culture file and 3D Viewer still appear on their own toolbar and icons can also be added to the custom toolbar. The map thumbnail is an alternative way to access the project selector.



[TaskId: 68287]

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## Map Templates Significantly Improve the Efficiency of Map Creation

Map Templates (the replacement for Map Sheets) allow the Style, the Extent and the Page Size & Scale of a map to be distinct. This allows a set of corporate standard 'styles' to be created. Users can then apply these styles to any 'Extent' and to any 'Page setup and Scale' as needed. Thus, the workflow to create a map is significantly shortened and the concept of Mapping Standards can be more easily implemented.

Larger organisations will likely make use of the new permissions settings where they can share and optionally enforce a set of standard styles on users. Other organisations can opt not to share styles such that Petrosys PRO will work similarly to the current version, where styles are saved at the project level

[TaskId: 51042]



Figure 1: This particular style is well suited to 'PowerPoint' presentations. It contains both geographic and projected coordinates on the inside of the map border as well as a dynamic location map, scale bar and north arrow

Figure 2: The user has applied the corporate standard style to their structure map in the North Sea. A colour bar has also been displayed. No style alterations were needed.

Figure 3: The user has applied the corporate standard style to their structure map offshore Kazakhstan. In addition to the colour bar, the user has also rotated the extent by 70°. No style alterations were needed.

Figure 1

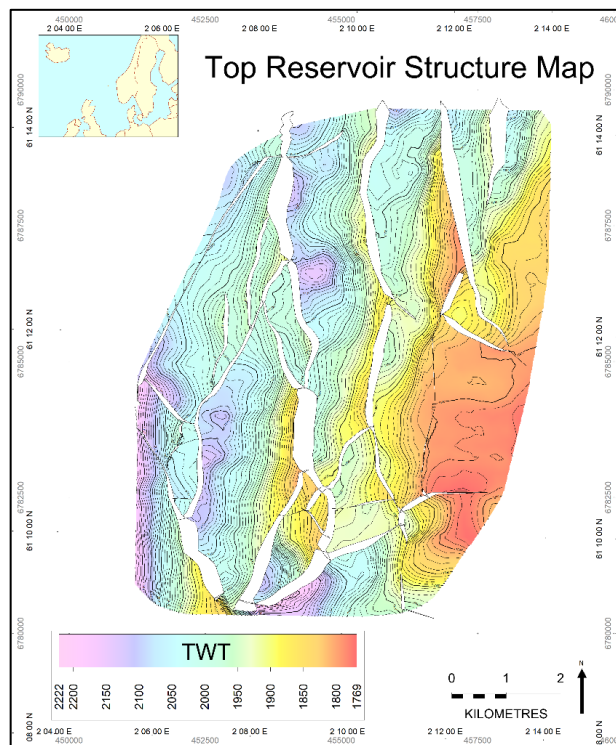


Figure 2

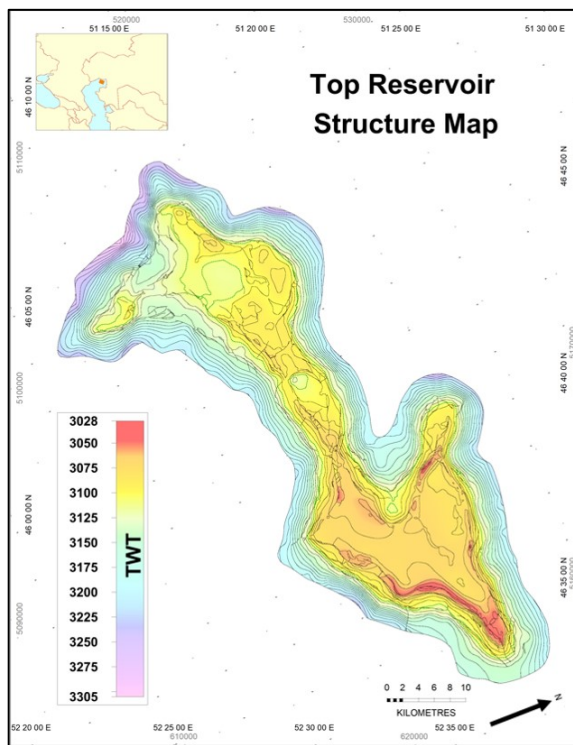
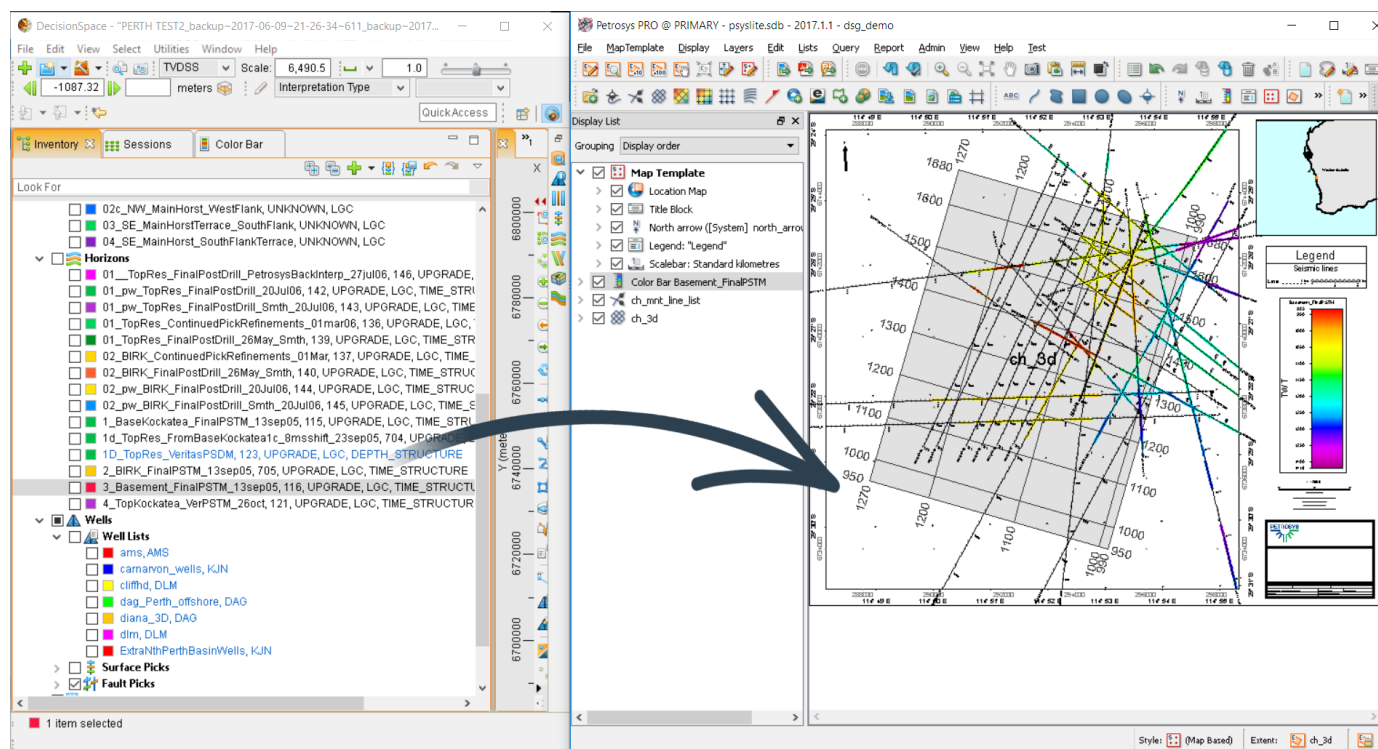


Figure 3

## DecisionSpace Geoscience Drag and Drop Integration

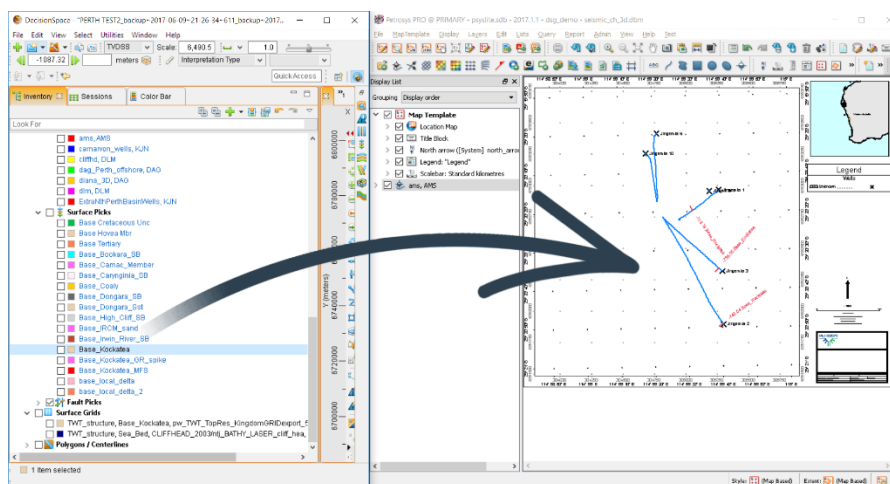
OpenWorks data can be now displayed in Petrosys by dragging and dropping support items from Landmark's popular DecisionSpace Geosciences application. Drag an item from the DSG Inventory view and drop it on to the Petrosys map canvas or Surface Modelling data input dialog.



Above: Dragging and dropping 3D Bin Grids and 2D Seismic navigation and interpretation into the Petrosys map.

Supported data types include:

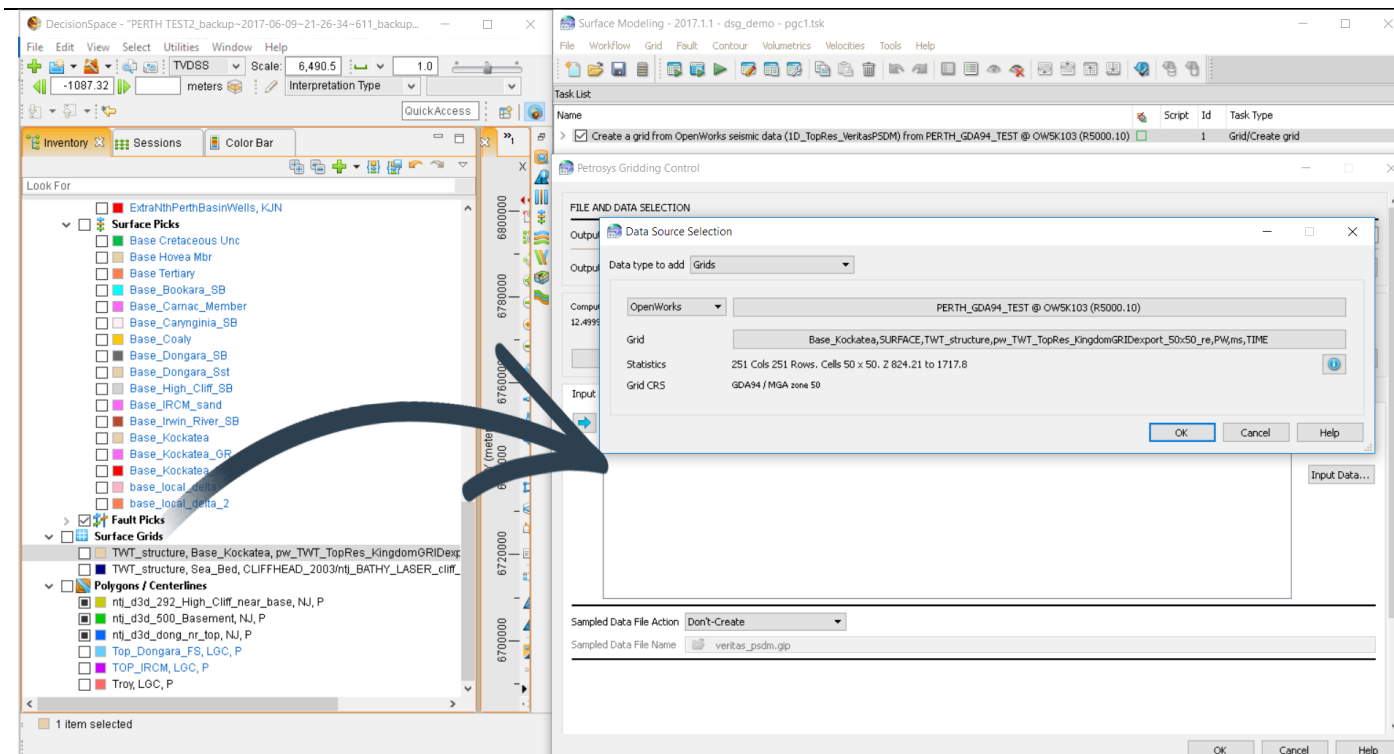
- Wells Lists
- Surface Picks
- 2D Line Lists
- 3D Surveys
- 2D and 3D Horizons
- Surface Grids
- Mapping Polygon sets
- Fault sticks



Above: Dragging and dropping formation tops to display along the well path.

This new feature provides a faster and more intuitive experience for users of the DecisionSpace Geosciences application. Saving time by avoiding searching for data through menu-based dialogues.

Supported on both Linux and Windows.



Above: Dragging and dropping a surface grid into the Petrosys Gridding data selection dialog as an input data source.

[TaskId: 27167]

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## Contour and Interpolation Improvements

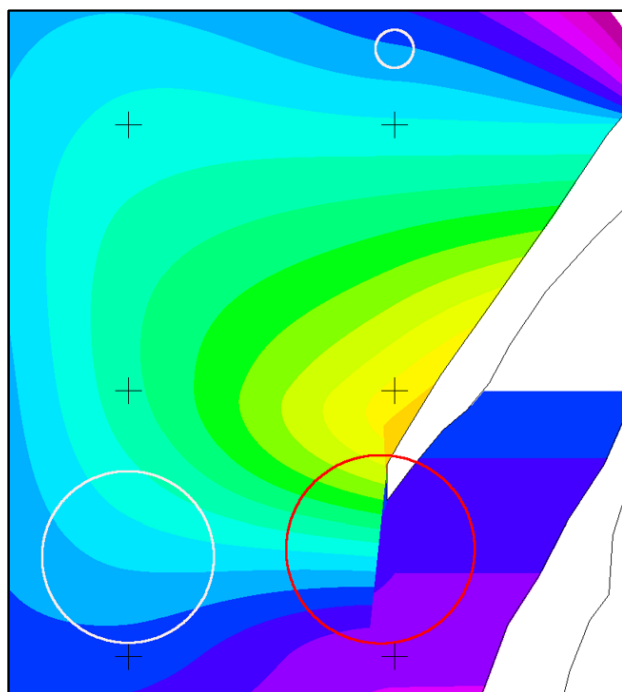
Contouring and interpolation of contours in cells surrounding faults has been improved to provide

- Better definition of surfaces with shadow areas and discontinuities around faults (no more refraction affects).
- Better definition of contours in flat areas when grids are clipped to min/max values (no more ring contours generated).
- Improved contouring around faults to prevent crossing contours
- No discontinuities in interpolation over cells edges
- Better stitching of interpolation across polygons and faults

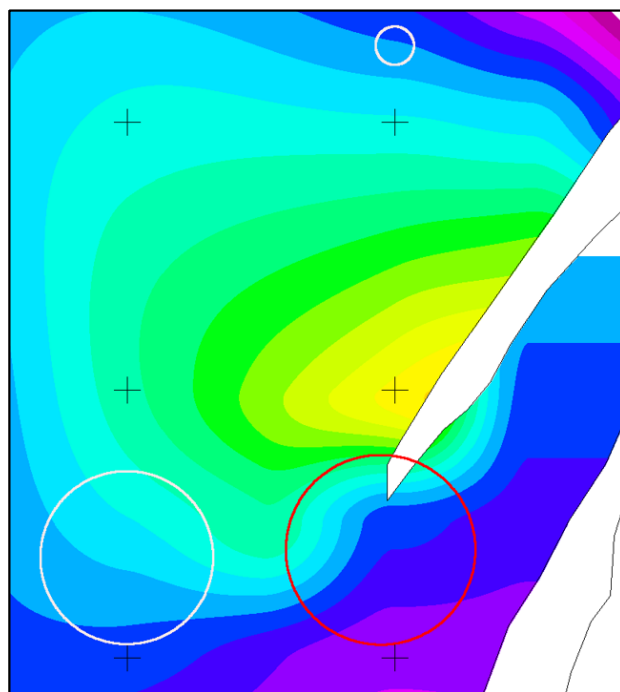
Below are some examples of improvements showing the display in 17.8 versions of Petrosys on the left and the new contour/interpolation rendering in Petrosys PRO 2017.1. All displays use the same grid displayed in each version of the software.

### Shadow area improvements

Refraction of surface at the end of the fault is now better interpolated and a more continuous surface is rendered (see area in red circle).



Petrosys 17.8

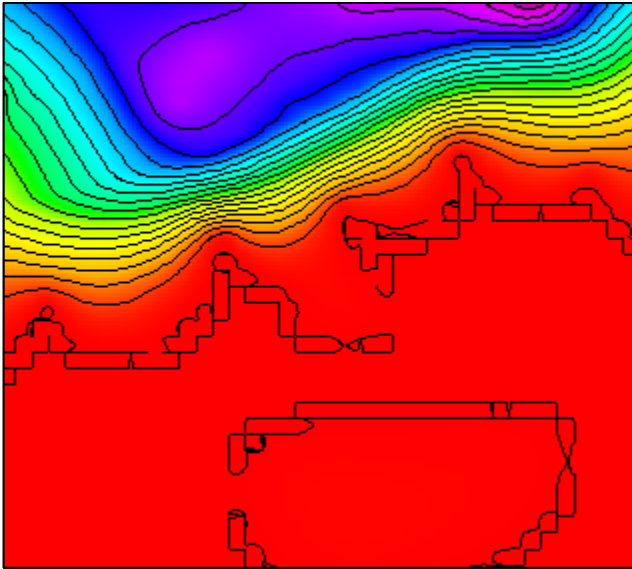


Petrosys PRO 2017.1

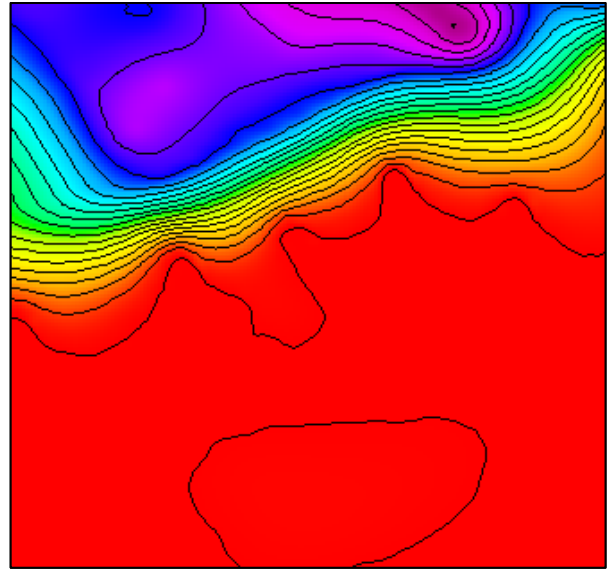
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## Contouring around flat areas

The contour rendering in areas of flat structure are now rendered in a way that prevents the looping contours and a smooth continuous contour is now displayed.



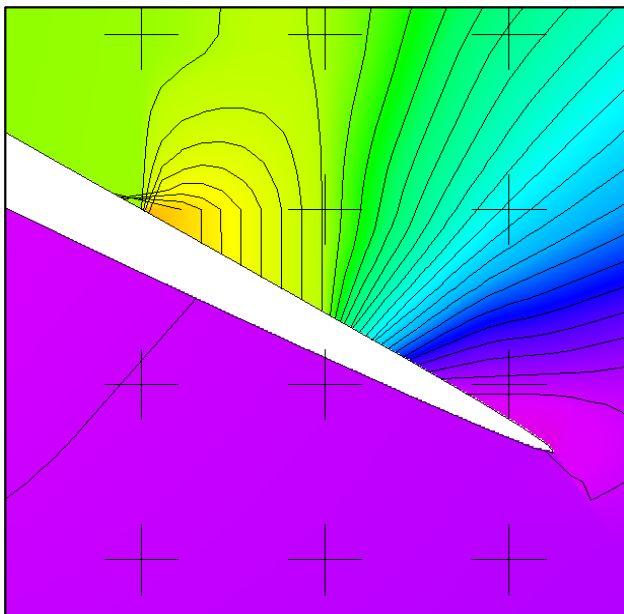
Petrosys 17.8



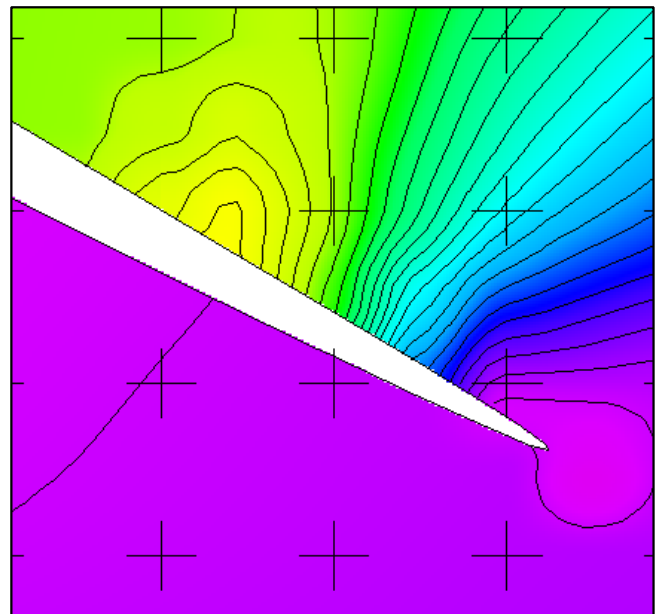
Petrosys PRO 2017.1

## Improved contouring/interpolation around faults

Where contours previously overlapped and crossed over when coming into faults with a missing node, improvements now remove crossing contours and better render cells missing nodes to generate a smoother surface and contours.



Petrosys 17.8

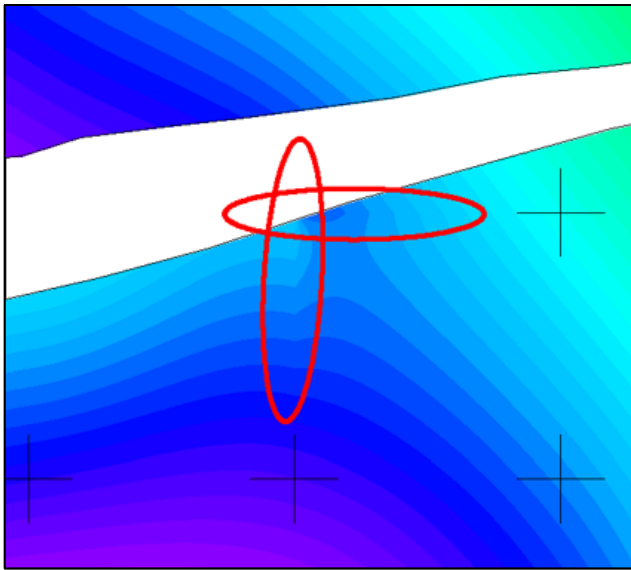


Petrosys PRO 2017.1

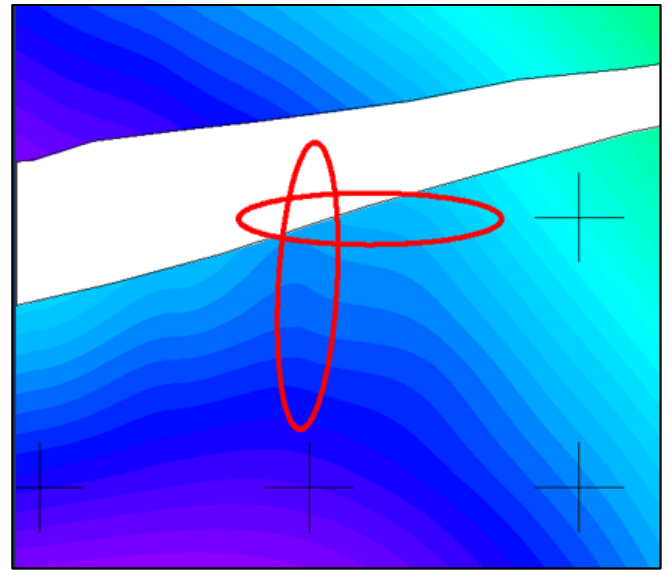


### Improved interpolation over cell edges

Where nodes are missing at fault or polygon edges, better interpolation is now used to smooth out the surface for better contour and surface rendering.



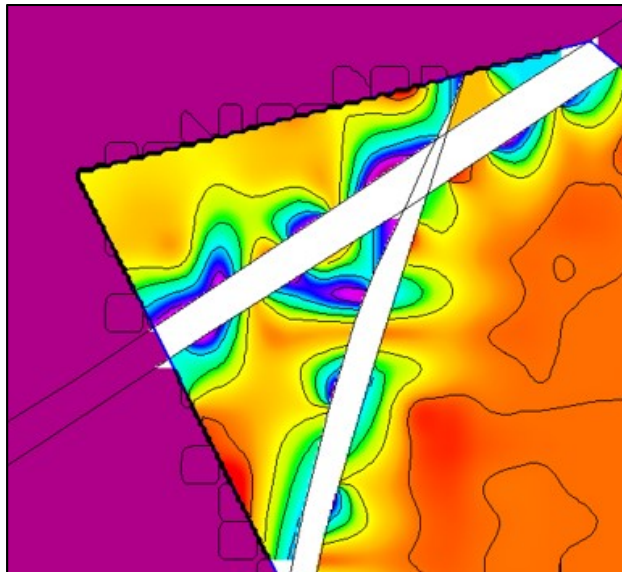
Petrosys 17.8



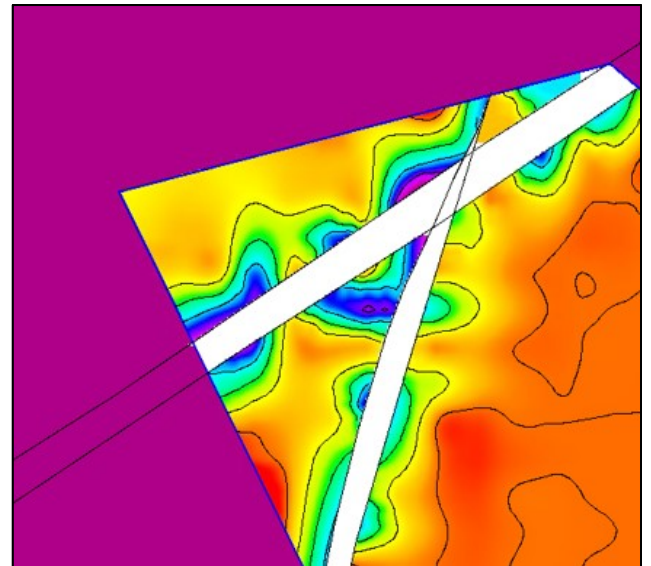
Petrosys PRO 2017.1

### Improved interpolation across polygons and faults when clipping to set values

Where a grid is clipped using a polygon and a set value outside of the polygon, ringing contours and edge effects are now not generated when displaying the contours in mapping



Petrosys 17.8



Petrosys PRO 2017.1

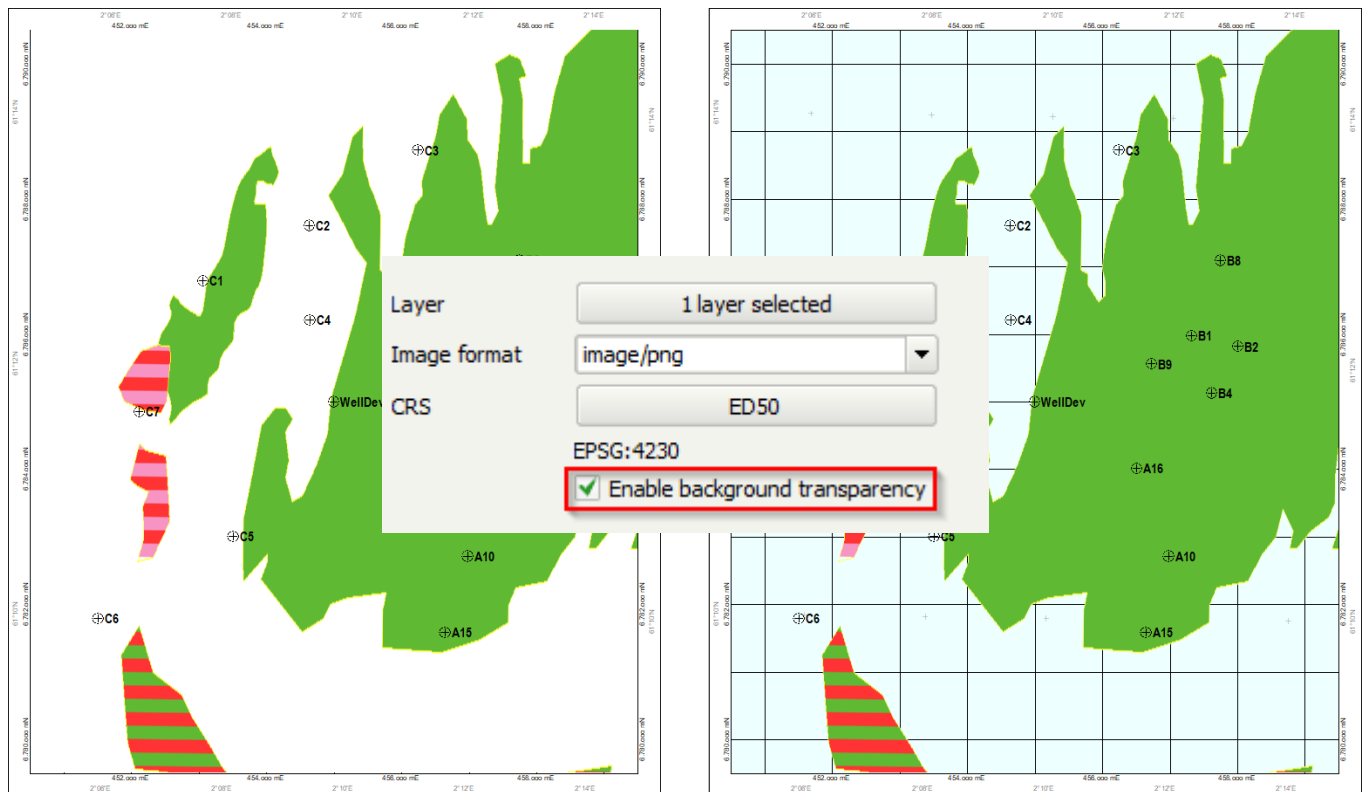
[TaskId: 64184]



## WMS – New Transparency Option

Users can now set the background of a WMS to be transparent rather than an opaque raster.

An opaque background often obscured other useful data, or necessitated a map base display to get a well-defined map border.



[TaskId: 63643]

## Direct Gridding of Third-party Grids

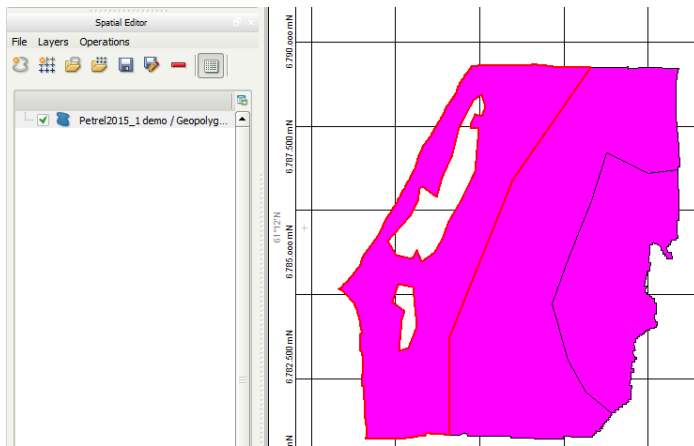
Grids available from supported 3rd party connections can now be used directly as gridding input.

Instant access to a third-party data type without the need to import to a Petrosys grid format first. Particularly useful for combining non-overlapping grids from different applications and for improving the quality of third-party grids produced from sparse data sources.



[TaskId: 19576]

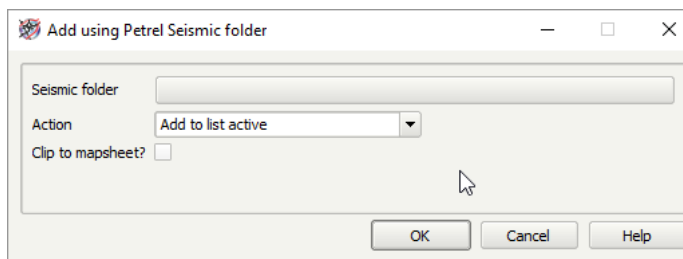
## Petrel GeoPolygon Support



Petrel uses geopolygons for closed polygons with holes and attributes suitable for cultural data and risk evaluation maps. Geopolygons are now supported for display in mapping; they can be edited with the spatial editor and the spatial data translator can write them out to other data-types, or write suitable datatypes to geopolygons in Petrel.

[TaskId: 61147]

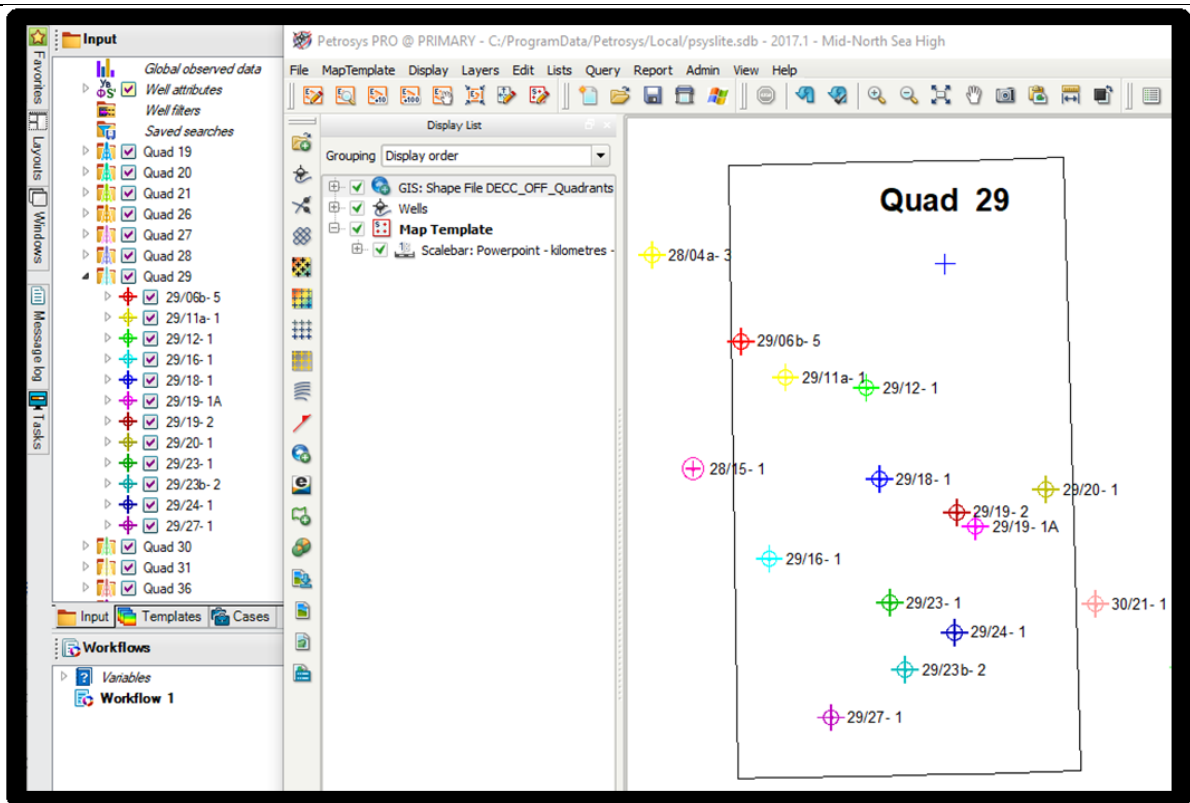
## Petrel – 2D Seismic Folder Filter in Lists



Petrosys Lists menu now supports Petrel 2D Seismic folders to filter data.

The subset of lines can then be saved as a line selection file for display and gridding.

[TaskId: 47853]



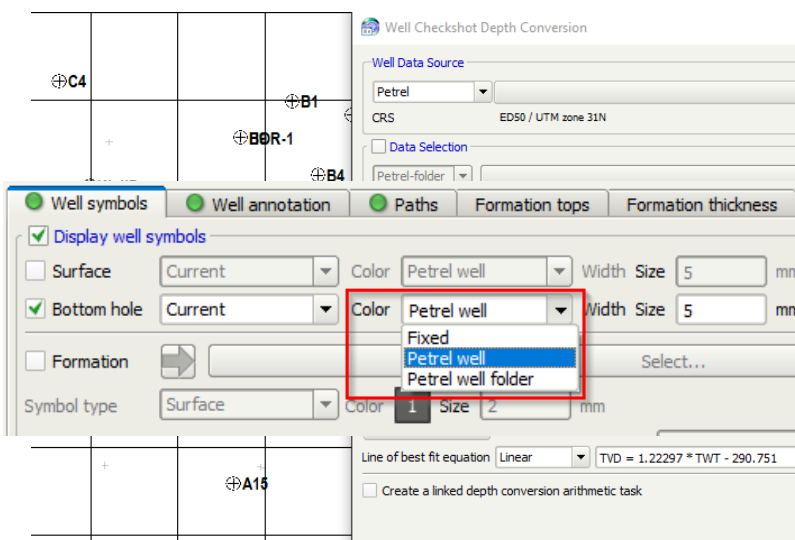
## Petrel Well Coloring Supported in Mapping

In Petrel, the color can be set for a specific well, a wells folder, or formation. Petrosys well display now allows the Petrel color to be selected and displayed. Petrel users are often familiar with the color used in their project and would like them replicated with no effort when mapping in Petrosys..

[TaskId: 64657/67426]

## Well Check-Shot Depth Conversion – Highlighted Well Flashes on Map

When a well is selected in the well check-shot depth conversion spreadsheet, it will automatically flash red in the map window if currently displayed. This applies to 3rd party data sources, but does not include the WDF.



[TaskId: 61535]

## Cross-Validation Added to Well Time Depth Trend Conversion

Well Name	TWT	TVDSS	Pseudo-Velocity	Easting	Northing	TVDSS Grid	Delta TVDSS Grid	TVDSS Estimate	Delta TVDSS Estimate	R2 Estimate(Current R2=0.716543)
A10	1601.36	-1766.96	2206.83	457215.47	6782674.59	-1768.78	-1.82	-1769.52	-0.73	0.66
A15	1684.34	-1872.67	2223.63	456658.36	6781508.1	-1845.59	27.08	-1841.13	4.46	0.71
A16	1642.29	-1823.25	2220.37	456512.65	6784031.41	-1806.26	16.99	-1801.89	4.37	0.69
B2	1667.59	-1828.82	2193.36	458442.82	6785839.99	-1829.82	-1.01	-1830.03	-0.2	0.69
B7	1836.3	-1745.3	1900.89	454950.9	6784779.82	-1995	-249.7	-2018.53	-23.54	0.99
B8	1744.76	-1932.15	2214.81	457773.11	6787153.4	-1903.6	28.55	-1900.93	2.68	0.72
B9	1707.74	-1880.28	2202.06	456715.91	6785546.78	-1867.85	12.43	-1866.23	1.62	0.71
C1	1893.17	-2059.26	2175.46	453139.15	6786788.35	-2053.98	5.28	-2053.22	0.75	0.7
C2	1881.9	-2069.37	2199.24	454795.27	6787607.12	-2042.15	27.23	-2038.7	3.45	0.7
C3	1889.52	-2063.64	2184.3	456379.92	6788724.75	-2050.13	13.5	-2048.28	1.85	0.7
C4	1926.56	-2126.46	2207.51	454990.71	6786210.63	-2089.41	37.05	-2082	7.41	0.68
C5	1841.3	-2017.76	2191.66	453568.49	6783001.8	-2000.12	17.64	-1998.53	1.59	0.71
C6	1936.07	-2142.46	2213.2	451503.8	6781788.24	-2099.61	42.85	-2090.15	9.46	0.68
C7	1891.94	-2096.09	2215.81	452298.83	6784852.47	-2052.68	43.41	-2046.63	6.05	0.7

☒ Cross validation report

Cross validation is a powerful well QC technique which has been available when creating a grid for several versions.

The technique involves automatically re-running a gridding workflow with each well removed in turn. A report is generated, showing the user which wells are having an unusual effect on the output grid, identifying a change in parameters & algorithm or re-interpretation may be needed.

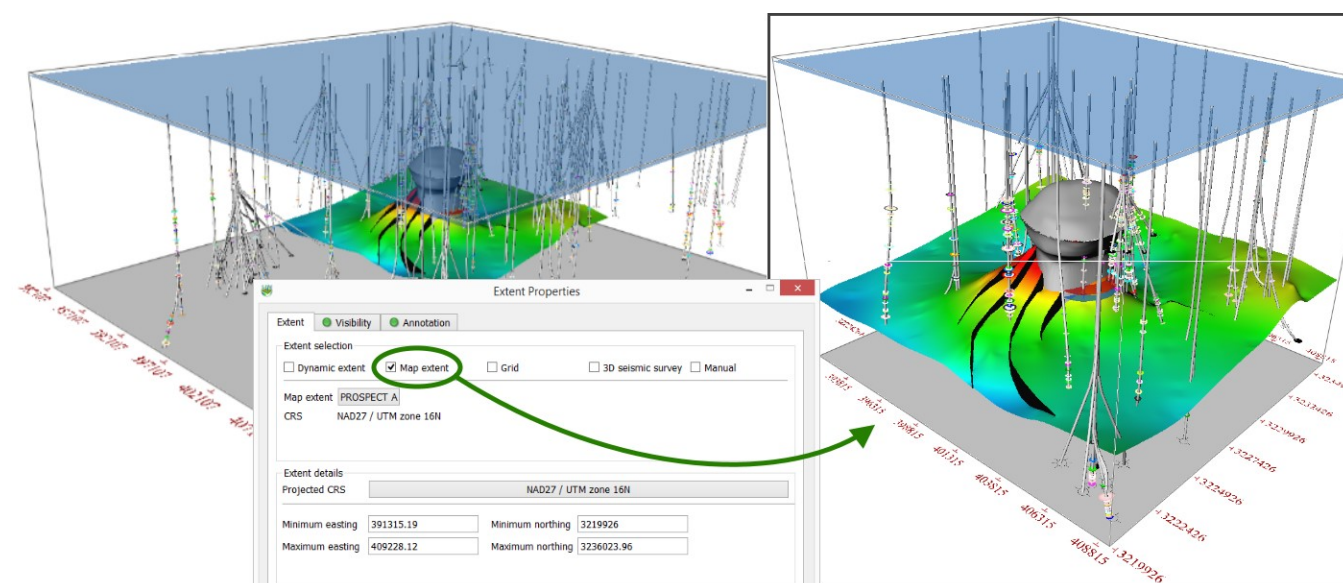
In Petrosys PRO 2017.1 this powerful technique has been extended to Well Time Depth Trend Conversion. By toggling this option on, the user can easily identify if any well picks or areas of their TWT grid are causing an unusual effect on the output depth grid.

Here, for example, excluding the B7 well alone will shift the  $R^2$  correlation from its current value of 0.716543 to 0.99. This indicates the B7 well alone is having an unusual effect on the time/depth correlation and its interpretation ought to be examined.

TaskId: 61179]

## 3D Viewer Bounding Box Extents

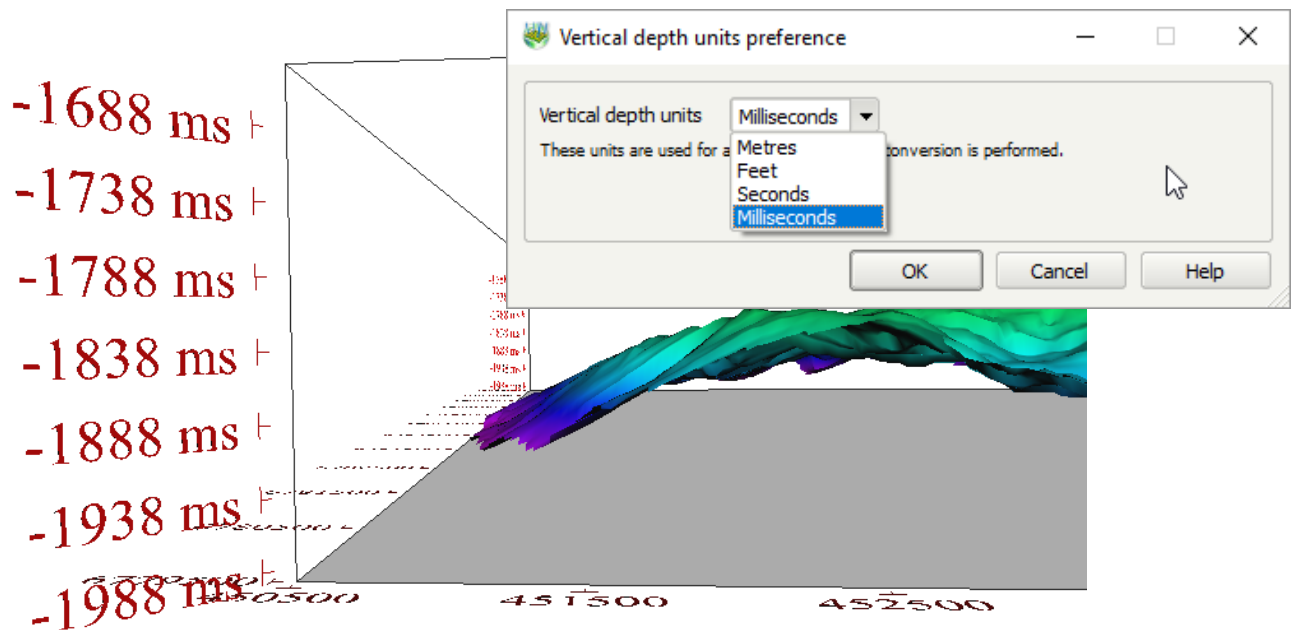
A new option **Extent** is available in the 3D viewer (Extent/Select). This option allows users to select static bounding borders in the XY plane to limit the amount of data being loaded and rendered in the 3D viewer. Available extents selections include 'Dynamic extent', 'Map extent', 'Grid', '3D seismic survey' and 'Manual'. Users can also increase the extent by 10% or by 100%.



[TaskId: 17311]

## 3D Viewer – Time Units Available for Z-Axis Annotation

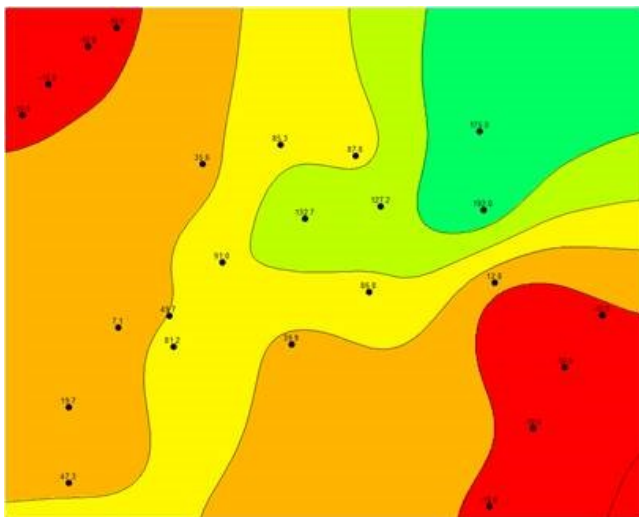
In the 3D viewer, time units (seconds and milliseconds) can now be chosen to annotate the Z-value axis. Changing the units does not perform depth conversion.



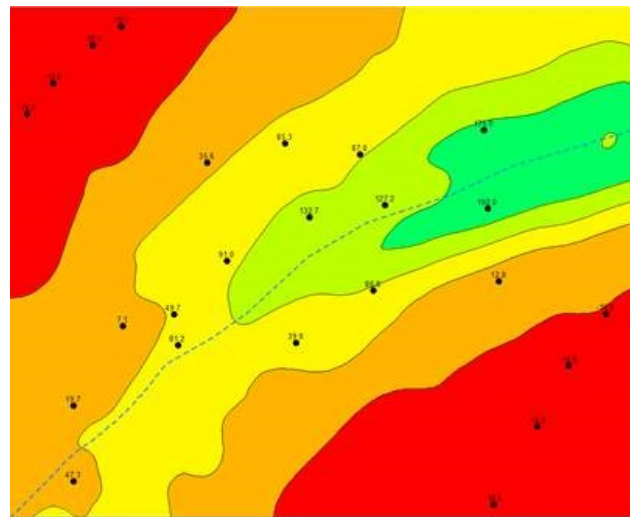
[TaskId: 17583]

## Bias Gridding Algorithm Improvements

The algorithm for Bias-Grid and Bias-Polyline gridding has been improved. Substantial online help is available and, by refining the input parameters, results matching user expectations are produced.



Standard gridding



Channel accentuated by Bias-polyline gridding

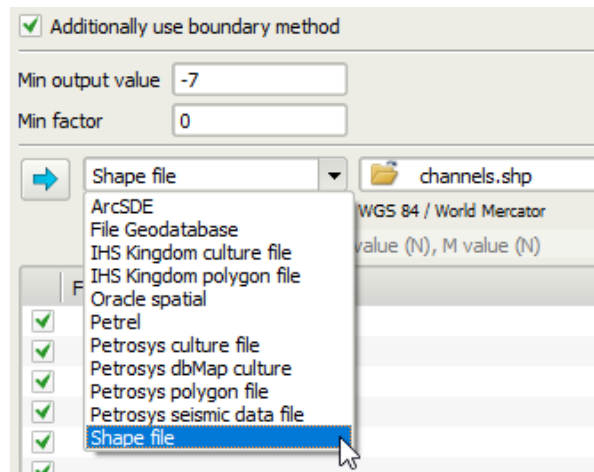
[TaskId: 34686]

## Additional Line Types Available to Control Bias Polyline Gridding

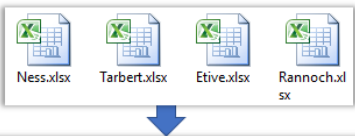
Bias polyline needs an input line type. This has been extended from Petrosys Culture file lines to all normal line types e.g. shapefiles, geodatabases etc.

In combination with the Spatial Editor, digitising control lines to a shapefile is now quick and easy.

{TaskId: 39526}



## Spreadsheet Looping in Surface Modeling



	A	B	C	D	E	F	G
1	Well name	Latitude	Longitude	TVDSS (m)	Porosity	Saturation	Vshale
2	34/10-1	61.17967801	2.212131	1833	0.202467	0.401131	0.4281
3	34/10-12	61.15741401	2.106033	2176	0.196804	0.399946	0.42692
4	34/10-3	61.21380601	2.198236	1978	0.203112	0.40223	0.45399
5	34/10-34	61.21783101	2.13463	2171	0.201142	0.404272	0.4585
6	34/10-41	61.23176101	2.09508	2785			
7	34/10-45	61.20275801			0.202707	0.404095	0.4471
8	34/10-46	61.17610601			0.20801	0.417222	0.44625
9	34/10-5	61.19037501			0.206245	0.414722	0.46468
10	34/10-6	61.24363601					
11	34/10-8	61.16653601			0.205947	0.418085	0.42949

☐ Ness Vshale.gri  
☐ Ness Porosity.gri  
☐ Ness Saturation.gri  
☐ Tarbert Saturation.gri  
☐ Tarbert Vshale.gri  
☐ Tarbert Porosity.gri  
☐ Etive Saturation.gri  
☐ Etive Vshale.gri  
☐ Etive Porosity.gri  
☐ Rannoch Vshale.gri  
☐ Rannoch Saturation.gri  
☐ Rannoch Porosity.gri

In Surface Modelling, Excel spreadsheets can be used in looping and scripting. A workflow can loop over a series of Workbooks and/or a series of columns within the Workbook.

Lots of data comes in spreadsheets and it is common to have many variables - z-values, petrophysical parameters etc. in columns in the same spreadsheet. A loop can replace many workflow steps.

{TaskId: 66135/66536}



# Detailed Release Notes Summary PRO 2017.1

## Enhancements

### *3D Viewer - General*

- [17311](#) Restrict 3D display to user specified bounding box
- [39596](#) Added View-All functionality
- [63592](#) Indicate activity by displaying message in the status bar when displaying map files

### *3D Viewer - Visualization*

- [17583](#) Added milliseconds and seconds to vertical units
- [40802](#) Point data symbol size were not automatically calculated

### *Application - General*

- [60781](#) Support for Red Hat Enterprise Linux 5 ceased
- [66844](#) All Windows executable and shared libraries now digitally signed
- [66952](#) File tool bar includes an icon to open the file explorer application in the current project directory

### *Application - User Interface*

- [62772](#) Shortcut keys for Cut/Copy/Paste/Undo/Redo options are now listed in menus

### *Connections, Import and Export*

- [48084](#) Seismic import to SDF screen - added filtering options and a refresh button to fetch data
- [66306](#) Large text file sizes now supported for various SDF import/export options
- [51363](#) Text stacking velocity format matching improved
- [45182](#) CGM Output - Support added for writing CGM using 24bit RGB alpha raster
- [45192](#) CGM Reader - Support for reading CGM 24bit RGB colors
- [63318](#) ps\_well\_path\_tvd dbMap SQL functions no longer require a map sheet
- [55397](#) Stacking velocity text file format updated for western 2D format to have coordinates defined

### *Connections, Import and Export - Esri*

- [58209](#) Compressed file geodatabases are now supported

### *Connections, Import and Export - Excel*

- [48553](#) Performance of reading data from xlsx files on Linux significantly improved

### *Connections, Import and Export - GeoFrame*

- [41736](#) Discontinued support for GeoFrame 4.4 and 4.5
- [51041](#) Replaced the use of IESX with GeoFrame when using 3D Seismic Bin Grid

### *Connections, Import and Export - OpenWorks*

- [63984](#) Added support to drag-and-drop data from DecisionSpace Geosciences to Petrosys Mapping and Surface Modeling
- [30446](#) All SeisWorks functionality has been migrated to use OpenWorks connections
- [25369](#) Added support for accessing shift data directly from OpenWorks
- [66004](#) Discontinued support for OpenWorks R5000.0, R5000.1 and R5000.3 connections

### *Connections, Import and Export - Paradigm-Epos*

- [65902](#) Discontinued support for Paradigm 2011.3, 14, 14.1 & 15 on Linux and Windows

### *Connections, Import and Export - Petrel*

- [62139](#) Added support for exporting grids to Petrel from domains other than Time and Depth
- [61147](#) Added support for Petrel Geopolygons

### *Connections, Import and Export - SEG Y*

- [61409](#) Added 2D SEG Y format with shotpoint number at CDP Ensemble number (byte 21-24)
- [57122](#) Mismatched 2D SEG Y files now give warning
- [56610](#) SEG Y format detection has been enhanced to consider additional byte ranges for shot-point data

### *Coordinate Reference Systems*

[61456](#) Support added for Cylindrical Equal Area; Lambert 2SP (Belgium) and Mollweide projection methods

## *Mapping - Editors*

[47853](#) Added Petrel folder data selection filter to 2D seismic line edit list

## *Mapping - General*

[51974](#) Display/Grid/Colorfill and Display/3D Seismic Surface/Colorfill layers have picking enabled by default

[59211](#) Display/Drawing Tools/Curve - Draw connecting line option checked by default

[61087](#) Display/Location Map enhancements

[63631](#) Display/Web Map Service allows ArcGIS layers to be selected from a tree

[63643](#) Display/Web Map Service allows transparency to be set when displaying WMS data

[63516](#) Improved error messages for Display/Web service image when connecting to WMS servers

## *Mapping - GIS, Spatial and Culture*

[66983](#) Support for MrSID raster format dropped

## *Mapping - Map Sheets*

[12680](#) The 'Simple Scale Bar' option has been upgraded

## *Mapping - Wells*

[64742](#) Added support for a text posting suffix when annotating formation thickness

[64657](#) Additional Petrel-driven well coloring options available in Mapping

## *Spatial Data Translator*

[48432](#) Spatial data translator allows open lines to be optionally closed when writing polygons

## *Surface Modeling - Contouring*

[64184](#) Contouring and interpolation improvements

[65058](#) Contouring by cell performance improvements

## *Surface Modeling - Exchange*

[62264](#) Grid import ASCII - scanning and import performance improvements

[54662](#) Allow manual setting of interpolation method when importing XYZ ASCII file to Petrosys grid

[66265](#) Support added for CRS conversion in fault stick exchange

## *Surface Modeling - Gridding*

[34686](#) Bias gridding improvements

[19576](#) Direct gridding of third party grids

[37486](#) Grid/Merge/Regrid did not preserve fault information stored in each input grid

[51889](#) Added ability to scale stacking velocity Z-value

[58160](#) Added post processing smoothing and clipping for 3D interpolated velocity grids

[66818](#) Creation of Petrosys .gri grid files greater than 10GB now supported

[63052](#) Extended Petrel drag and drop support to include clipping polygons in Surface Modeling

[44394](#) Updated arithmetic formulae for isochron calculation

## *Surface Modeling - Workflows/Scripting*

[61430](#) Add support for looping over 3D seismic surfaces for Petrel in Tools/Draw map

[61473](#) Select task parameter or function panel can be closed by double clicking on selected parameter or function

## *Velocities/Depth Converter*

[61535](#) Added ability to highlight selected data points/wells in Mapping

[61179](#) Added cross-validation to Time depth trend depth conversions

[61320](#) Time Depth conversion tasks have the options to exclude/include data points from data points table

[59230](#) Well Checkshot Depth Conversion added option to show data point list at run time

# Detailed Release Notes Summary PRO 2017.1

## Bug Fixes

### *3D Viewer - General*

- [67469](#) Display/Picture image coordinate values were not remembered when re-opening the layer panel
- [53957](#) Time series grids from mapped network drive can now be used

### *Application - General*

- [62128](#) Mapping no longer freezes when closed with measure tool active
- [52478](#) SDF seismic selection panel updated when seismic line selection file is updated
- [65263](#) Search text appeared in the wrong position if not left aligned in the table widgets

### *Application - Launcher*

- [61471](#) Changing the project will change the project dynamically in applications started from that session

### *Application - Printing and Publication*

- [57950](#) CGM Reader - Support added for reading transparent bitmaps

### *Application - User Interface*

- [51371](#) Date entry made easier

### *Configuration - General*

- [62310](#) LocalDir retains current value when running Windows Installer repair

### *Connections, Import and Export*

- [45479](#) Text stacking velocities shows loaded data when cancelled
- [59503](#) Files/Exchange/Stacking velocities from text files no longer has empty line names
- [53153](#) Fixed an issue with not copying stacking velocity data to SDF from dbMap
- [57949](#) CGM Output - Transparency support added for grid color fill rectangles hardcopy option
- [57434](#) Stacking velocity datum (time shift) now applied before time scale factor

### *Connections, Import and Export - DUG Insight*

- [58698](#) Grid Exchange now correctly reads the origin for DUG Insight grids
- [52103](#) External data not shown for selection

### *Connections, Import and Export - IHS*

- [65424](#) IHS Info Hub well subsea reference depths are now read correctly

### *Connections, Import and Export - OpenWorks*

- [66611](#) Fixed a crash when attempting to connect to OpenWorks through Dispatch Server when no licenses available

### *Connections, Import and Export - Petrel*

- [64471](#) Changing Petrel project CRS is now reflected in Petrosys

### *Connections, Import and Export - SEG Y*

- [61049](#) SEG Y format matching now allows for negative shotpoint numbers

### *dbMap/Web - Client*

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## *Mapping - Grids, Surfaces and Sampled Data Files*

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## *Mapping - Map Sheets*

- [62968](#) Corner annotation draws degrees symbol correctly on all operating systems

## *Mapping - Seismic*

- [61835](#) Fixed dbMap 2D seismic line filtering by survey type
- [50541](#) 3D SEG Y seismic import to dbMap now creates 3D bin grid
- [61155](#) Fixed potential crash when launching the Edit/Survey option from the Seismic Survey list

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- [64884](#) Crash when toggling seismic line activity fixed

## *Spatial Data Translator*

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- [47143](#) Spatial Data Translator allows geographic coordinates to be written in DMS format
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## *Surface Modeling - Contouring*

- [54358](#) Contours no longer have kinks when grid surface has nodes equalling the contour value
- [55835](#) Contouring produces correct contour in faulted cell when grid node value matches contour level

## *Surface Modeling - Exchange*

- [61464](#) Exporting Petrosys grid to Zmap text grid with very small rotation angle now works
- [51224](#) Dump Fault file allows overwrite existing Z values when interpolating from grid
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## *Surface Modeling - General*

- [59340](#) Tools/DrawMap parameters restored on task open
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- [48003](#) Points can now be displayed using Single-Colour in Sampled Data Editor
- [61342](#) Surface Modeling sets up PRIMARY database connection at application start up
- [60933](#) Tools/DrawMap was now prompts for correct raster file name

## *Surface Modeling - Gridding*

- [55048](#) Grid/Merge/Blend now supports grids in different CRSes
- [51400](#) Added gridding option to use slope+curvature when estimating grid nodes
- [20921](#) Grid/Create Grid with Openworks Point Data panel is not user friendly
- [15470](#) Grid/Merge/Blend now sets AOI correctly
- [37930](#) Gridding panels showed error when opening for missing fault files when faults were turned off
- [61238](#) Kriging sill and range are always displayed on linear variogram

## *Surface Modeling - Workflows/Scripting*

- [31183](#) File/Merge option merged task scripting incorrectly
- [59811](#) Tools/DrawMap uses file selectors in scripting

## *Velocities/Depth Converter*

- [61322](#) Well Checkshot Depth Conversion panel was not updated correctly when WDF changed
- [59852](#) Well Time Depth Trend Conversion now uses two significant figures when displaying small values

## *Wells (WDF) Editor*

- [40834](#) Back interpolate to WDF used bottom hole location when directional survey was missing and the MD was set to blank or zero
- [62525](#) Tree view now shows well and zone selection files in sub-folders on Windows

# Petrosys Release PRO 2017.1

## Detailed Release Notes

### [3D Viewer - General](#) [Enhancements](#)

#### **Restrict 3D display to user specified bounding box**<sup>17311</sup>

Users are able to specify a static bounding borders in XY plane to limit the amount of data being loaded and rendered, thus improving 3D Viewer performance. The dynamic option is still available and it is the default option. This new option is under 'Extent/Select...'.

#### **Added View-All functionality**<sup>39596</sup>

Added functionality to view all 3D Viewer currently displayed layers. This means the camera will attempt to position itself in such way that all layers are in the view.

#### **Indicate activity by displaying message in the status bar when displaying map files**<sup>63592</sup>

Setting status bar message when displaying MapFile item to indicate activity for larger maps that take longer to display.

---

### [3D Viewer - General](#) [Bug Fixes](#)

#### **Display/Picture image coordinate values were not remembered when re-opening the layer panel**<sup>67469</sup>

The image coordinate values entered in the /Display/Picture panel are remembered when re-opening the panel for not geo-referenced raster files.

#### **Time series grids from mapped network drive can now be used**<sup>53957</sup>

Time series grids located on mapped network drive are supported for Display/Grid time series. Previously grids on network drives could not be used.

### [3D Viewer - Visualization](#) [Enhancements](#)

#### **Added milliseconds and seconds to vertical units**<sup>17583</sup>

Added the annotations of time units (sec or msec) to 3D Viewer.

Note - this option will not perform a depth conversion.

#### **Point data symbol size were not automatically calculated**<sup>40802</sup>

The symbol size for point data can now be calculated automatically based on the spatial extent of the input data. when set to constant. This is enabled when the size text field is left blank.

### [Application - General](#) [Enhancements](#)

#### **Support for Red Hat Enterprise Linux 5 ceased**<sup>60781</sup>

Petrosys PRO 2017.1 supports Redhat Enterprise Linux 6 and newer versions only.

## **All Windows executable and shared libraries now digitally signed** 66844

All released executable files (i.e. .exe and .dll files) are now digitally signed, either by Petrosys or a Petrosys supplier. This gives confidence that the files executed have not been tampered with by a third party.

## **File tool bar includes an icon to open the file explorer application in the current project directory** 66952

The icon was available in previous versions, but not shown by default. The file explorer shown is system dependent - this will open Windows Explorer when running on Windows, whereas on Linux the file browser configured for the current desktop will be shown.

---

### **Application - General**

### **Bug Fixes**

## **Mapping no longer freezes when closed with measure tool active** 62128

In previous versions, closing Mapping with the measure tool active would result in Mapping freezing.

## **SDF seismic selection panel updated when seismic line selection file is updated** 52478

On seismic data selection panel, if the data source type is SDF, the panel is now updated if the seismic line selection file is updated.

## **Search text appeared in the wrong position if not left aligned in the table widgets** 65263

Search word appears in the correct location in the panel table widgets.

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### **Application - Launcher**

### **Bug Fixes**

## **Changing the project will change the project dynamically in applications started from that session** 61471

Changing a project in the Launcher will now update any running application from that same session to switch to that project, without the need to quit and restart the application.

---

### **Application - Printing and Publication**

### **Bug Fixes**

## **CGM Reader - Support added for reading transparent bitmaps** 57950

Support for reading certain types of CGM files that use raster elements (cell arrays) with transparency is now supported.

## **Application - User Interface** **Enhancements**

## **Shortcut keys for Cut/Copy/Paste/Undo/Redo options are now listed in menus** 62772

Shortcut key sequences for Cut, Copy, Paste, Undo and Redo are now listed in the associated top level menu items for the relevant options.



### Date entry made easier

51371

Date editing has been improved to allow better keyboard entry of date values.

---

### LocalDir retains current value when running Windows Installer repair

62310

During a repair operation, the Petrosys PRO local directory (LocalDir) registry key is no longer reset to the value used on original install. In previous versions, if a LocalDir value was changed after the original install, and then the application was repaired via the Windows Installer package, the LocalDir was reverted back to the original value.

### Seismic import to SDF screen - added filtering options and a refresh button to fetch data

48084

On Seismic import to SDF screen now data can be filtered by using various filters and a refresh button is added to control when data panel should be refreshed.

### Large text file sizes now supported for various SDF import/export options

66306

The range of SDF text import/export options will now support text files that are greater than 2GB.

### Text stacking velocity format matching improved

51363

Stacking velocity selection panel format matching method for text files has been improved.

### CGM Output - Support added for writing CGM using 24bit RGB alpha raster

45182

CGM files exported from a map with sun-shaded color grid display will now be written using CGM native 24bit cellarray (raster) primitives. This results in a higher color fidelity CGM file.

### CGM Reader - Support for reading CGM 24bit RGB colors

45192

The display of CGM files now better supports CGM 24bit raster elements (cell arrays), resulting in better quality display of some CGM files.

### ps\_well\_path\_tvd dbMap SQL functions no longer require a map sheet

63318

The following dbMap SQL functions to compute well TVD and subsea depths from directional surveys can now be used by report options when Dynamic map sheet mode is selected:

- ps\_well\_path\_tvd\_ft
- ps\_well\_path\_tvd\_m
- ps\_well\_path\_tvd\_ss\_ft
- ps\_well\_path\_tvd\_ss\_m

These functions are available for Petrosys-dbMap along with any other data source that supports SQL querying of well data.

Previously an error saying that a current map sheet was required would be displayed and columns shown in the report using these functions would be blank.

## Stacking velocity text file format updated for western 2D format to have coordinates defined

55397

Petrosys shipped Western 2D stacking velocity text file format is now upgraded to having X and Y coordinate fields.

---

### Connections, Import and Export

### Bug Fixes

#### Text stacking velocities shows loaded data when cancelled

45479

In previous version if stacking velocity preview was cancelled nothing was shown in the preview window. Now the loaded data will be shown in the preview window.

#### Files/Exchange/Stacking velocities from text files no longer has empty line names

59503

Stacking velocities exchange task can now handle long input files. Previously, the line name could be lost in large files.

#### Fixed an issue with not copying stacking velocity data to SDF from dbMap

53153

Stacking velocity data is now correctly copied when exporting dbMap seismic data to SDF.

#### CGM Output - Transparency support added for grid color fill rectangles hardcopy option

57949

CGM files exported from Mapping now support transparency when using /Display/Grid/Colorfill and using the rectangles hardcopy option.

#### Stacking velocity datum (time shift) now applied before time scale factor

57434

Stacking velocity option 'Datum (time shift)' is now applied before applying time scale factor. Previously these operations were performed in the opposite order.

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### Connections, Import and Export - DUG Insight Bug Fixes

#### Grid Exchange now correctly reads the origin for DUG Insight grids

58698

A bug has been fixed in Grid Exchange whereby some DUG Insight grid origins were being read incorrectly.

#### External data not shown for selection

52103

When reading data from DUG Insight, if the data (Well, Seismic, etc.) is stored externally it now no longer appear for selection in Petrosys. Previously, the data was shown for selection, but could not be accessed.

### Connections, Import and Export - Esri Enhancements

#### Compressed file geodatabases are now supported

58209

Compressed Esri FileGDBs are now supported by the /Display/GIS option. Using compressed FileGDBs can also improve performance if the file is on a network drive.

## [Connections, Import and Export - Excel Enhancements](#)

### **Performance of reading data from xlsx files on Linux significantly improved** 48553

The performance of reading data from an Excel xlsx file type is now significantly faster on the Linux platform. The performance can be two to five times faster depending on the workflow in use and size of xlsx file.

## [Connections, Import and Export - GeoFrame Enhancements](#)

### **Discontinued support for GeoFrame 4.4 and 4.5** 41736

Support for importing and direct display of data from GeoFrame 4.4 or 4.5 has been discontinued.

Currently supported versions of GeoFrame are GeoFrame 2012.

### **Replaced the use of IESX with GeoFrame when using 3D Seismic Bin Grid** 51041

The use of the IESX plugin has been replaced with the newer GeoFrame plugin connection to display and use Seismic 3D bin grids throughout the Mapping and Surface Modeling applications.

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## [Connections, Import and Export - IHS](#)

## [Bug Fixes](#)

### **IHS Info Hub well subsea reference depths are now read correctly** 65424

Well header Subsea reference depths are now read correctly from IHS Info Hub databases. Previously the subsea reference depth was being read as zero for all wells.

## [Connections, Import and Export - OpenWorks Enhancements](#)

### **Added support to drag-and-drop data from DecisionSpace Geosciences to Petrosys Mapping and Surface Modeling** 63984

DecisionSpace Geosciences (DSG) users can now drag supported data from the DSG directly into Petrosys. The following areas are supported for DSG drag-and-drop.

You can drag the following OpenWorks data types from the DSG Inventory view directly to the Petrosys mapping canvas and select dialogs:

- Wells Lists
- Surface Picks
- 2D Line Lists
- 3D Surveys
- 2D and 3D Horizons
- Surface Grids
- Mapping Polygon sets

Key areas of the Grid/Create Grid, Well Tie and Phantom process have been DSG drag-and-drop enabled for OpenWorks data:

- Datasource input
- Output Geometry using 3D Surveys
- Faults tab

3D Viewer and Import/Export/Exchange are not yet supported.

## All SeisWorks functionality has been migrated to use OpenWorks connections

30446

The use of SeisWorks as a data source connection in the Petrosys PRO suite of applications, has now been removed and replaced with using an OpenWorks connection.

The following types of data have been changed to now use OpenWorks:

- Seismic 2D navigation
- Seismic 2D interpretation
- Seismic 3D survey (bin grid)
- Seismic 3D interpretation (reading and writing)
- Fault Sticks (reading and writing)

OpenWorks is now listed as a connection type where SeisWorks was previously available. It is now no longer possible to add or connect to SeisWorks projects through the Connection Manager.

This also means that only a single OpenWorks connection is required to access data from a project that has multiple 2D and 3D surveys. Previously, this would have needed multiple SeisWorks connections.

Previously saved maps and task files using SeisWorks can still be used in Mapping, Surface Modeling and 3D Viewer. Upon loading these files, the SeisWorks connection and data selection information will be migrated over to use an OpenWorks connection.

Note: Clients using the Dispatch Server to access SeisWorks/OpenWorks data on Windows are required to upgrade their Dispatch Server to the latest version shipped with this release, as older versions of the Dispatch Server are no longer compatible with this release of Petrosys.

## Added support for accessing shift data directly from OpenWorks

25369

Petrosys now supports the ability to select and read shift data directly from OpenWorks, in addition to the previously supported OpenWorks shift files (\*.shf),

Where it was possible to select a shift file when using seismic data from OpenWorks, the user now has the ability to select shift data from OpenWorks.

## Discontinued support for OpenWorks R5000.0, R5000.1 and R5000.3 connections

66004

Connections to OpenWorks R5000.0, R5000.1 and R5000.3 projects are no longer available. Petrosys continues to maintain support for OpenWorks R5000.8 and R5000.10 on both Linux and Windows.

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## Connections, Import and Export - OpenWorks Bug Fixes

### Fixed a crash when attempting to connect to OpenWorks through Dispatch Server when no licenses available

66611

A crash has been fixed that occurred when attempting to connect to an OpenWorks Dispatch Server connection when an error occurred, such as no available OpenWorks licenses or the Dispatch Server was off-line.

## Connections, Import and Export - Paradigm-EposEnhancements

### Discontinued support for Paradigm 2011.3, 14, 14.1 & 15 on Linux and Windows

65902

Support for importing and direct display of Paradigm 2011.3, 14, 14.1 and 15 by Petrosys has been discontinued.

Currently supported versions are Paradigm 15.5 and 17 (Enterprise Linux 6+, Windows 7+).

## [Connections, Import and Export - Petrel Enhancements](#)

### **Added support for exporting grids to Petrel from domains other than Time and Depth** 62139

The output domains supported by Grid Exchange to Petrel has been increased to support all of the built-in Petrel data domain types. Previous versions only allowed ELEVATION\_TIME and DEPTH.

### **Added support for Petrel Geopolygons** 61147

Geopolygons can now be read from and written to Petrel. Support includes:

- Display
- Spatial Data Translator
- Spatial Editor

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## [Connections, Import and Export - Petrel](#) [Bug Fixes](#)

### **Changing Petrel project CRS is now reflected in Petrosys** 64471

Previously, a Petrel project's CRS stored in the user panels.pnd would override the CRS provided by Petrel. Now, the CRS provided by Petrel will always be used for Petrel connections.

*Note:* Petrosys applications must be restarted to reflect a change in Petrel project CRS.

## [Connections, Import and Export - SEGY Enhancements](#)

### **Added 2D SEGY format with shotpoint number at CDP Ensemble number (byte 21-24)** 61409

When selecting SEGY format the bytes 21-24 are automatically detected and treated as a valid shotpoint field candidates for 2D SEGY file.

### **Mismatched 2D SEGY files now give warning** 57122

When multiple 2D SEGY files are selected and not all of them have the same format a warning is displayed and the details can be logged into diagnostics.

### **SEGY format detection has been enhanced to consider additional byte ranges for shot-point data** 56610

SEGY format detection now allows bytes 9-12 to be treated as a valid shotpoint field.

---

## [Connections, Import and Export - SEGY](#) [Bug Fixes](#)

### **SEGY format matching now allows for negative shotpoint numbers** 61049

In SEGY format checking and automatic detection the shotpoint number (for 2D) or crossline number (for 3D) are changed to allow negative values. Previously negative shotpoint or crossline numbers would cause the format selection algorithm to reject the candidate format.

## [Coordinate Reference Systems](#) [Enhancements](#)

### **Support added for Cylindrical Equal Area; Lambert 2SP (Belgium) and Mollweide projection methods** 61456

Support has been added for CRSes using the following projection methods:

- Cylindrical Equal Area
- Cylindrical Equal Area (Spherical)
- Lambert 2SP (Belgium)
- Mollweide

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## dbMap/Web - Client

## Bug Fixes

### dbMap 2D seismic import now does CRS conversions correctly 57365

The Admin/dbMap Data Transfer/Import/Seismic option now correctly converts the CRS of the input data when displaying the preview on the current map sheet, and also when loading coordinates with the selected output geographic CRS different to that of the input. Previously the display preview assumed the input data was in the same CRS of the current map sheet. You would also get an error if the selected output Geographic CRS was different to that of the input data, and no conversion would occur.

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## Mapping - Editors

## Enhancements

### Added Petrel folder data selection filter to 2D seismic line edit list 47853

Petrel 2D seismic line selection lists can now be defined using Petrel folder data selection filters.

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## Mapping - Editors

## Bug Fixes

### Seismic line edit list for dbMap now remembers current selection file name when saving 61775

When saving changes to an existing dbMap seismic line selection list, the prompt for output selection file is no longer shown. The existing selection file is overwritten as expected.

File/Save As still allows the selection of an alternative output selection file.

### Adding new contour labels via overpost correction uses a better default label size 59586

In previous versions, contour labels added in overpost correction mode could use label sizes from inactive contour increments, resulting in labels that did not match existing labels.

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## Mapping - General

## Enhancements

### Display/Grid/Colorfill and Display/3D Seismic Surface/Colorfill layers have picking enabled by default 51974

In previous versions picking was not enabled by default for these layers.

### Display/Drawing Tools/Curve - Draw connecting line option checked by default 59211

The /Display/Drawing Tools/Curve.. option now has the "Draw connecting line" option checked by default in a new project. This makes it easier to draw a simple line on the screen when first using the option.

### Display/Location Map enhancements 61087

The Display/Location Map option has been improved:

- The area of interest is set interactively, rather than being based on a scale factor from the current map. This allows the location map to be placed in the best position to indicate the position of the map relative to surrounding geography.



- A new base map style using state and province data is available.
- Annotation can now be included for the base map.
- The position of the location map annotation can be set to left, right, above or below the area of interest.

## **Display/Web Map Service allows ArcGIS layers to be selected from a tree**

63631

The Display/Web Map Service option to display images from ArcGIS server has been enhanced to allow layers to be selected from a tree view, rather than a flat list. The tree view is a better reflection of the way that layers are stored in ArcGIS server and removes ambiguity for layers with the same names in different parts of the tree.

## **Display/Web Map Service allows transparency to be set when displaying WMS data**

63643

When displaying WMS data using Display/Web Map Service, there is now an option to request the image background to be set as transparent or filled. Note that the transparency setting is passed to the WMS server, but may not be honoured by a particular server. For example, some image formats do not support transparency.

## **Improved error messages for Display/Web service image when connecting to WMS servers**

63516

The error messages shown in the Display/Web Service Image when attempting to connect to WMS servers have been improved.

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### **Mapping - General**

### **Bug Fixes**

## **Display/Web Service Image handles more variations of WMS server URLs**

63222

In previous versions the URL for a WMS server had to be specified using a precise format, for example the request could not be included. This behaviour has been improved to automatically handle a number of variations of URLs that are seen in practice.

## **The display list description shows the file name without the path**

52753

File names in the Mapping display list now show the file name only. Previously, in some cases on Windows, the preceding relative path would be shown causing the file name to be clipped.

### **Mapping - GIS, Spatial and Culture**

### **Enhancements**

## **Support for MrSID raster format dropped**

66983

Support for displaying MrSID raster format files has been removed from this version.

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### **Mapping - GIS, Spatial and Culture**

### **Bug Fixes**

## **Exporting 3D bin grid to spatial formats includes the survey name**

54938

In previous versions, when the "Export Spatial" option was used to export 3D bin grids, the survey name was not included in the exported attribute data.

## **Display/GIS correctly displays Excel worksheets that have names with trailing spaces**

60802

In previous versions, selecting an Excel worksheet with a trailing space would not be correctly remembered - the first worksheet would get used instead

## Display/GIS shows correct meta-data for dbMap culture layers 51767

In previous versions, incorrect data could be shown in the "remarks" column for dbMap culture data in some situations.

## Display/GIS shows points correctly on geographic border maps with varying central meridians 55342

In previous versions, point data shown via Display/GIS on maps with a geographic border could be incorrectly not shown. This would occur when the central meridian of the projection used to show the map was not zero and would be more likely to happen the further away the central meridian was.

## Display/GIS uses the correct symbol style when the same data is displayed more than once 60564

Previously, when the same data was displayed using the "symbol style" method in two separate Display/GIS layers, the same style would be incorrectly used for both layers.

---

## Mapping - Grids, Surfaces and Sampled Data Files Bug Fixes

### 3D Seismic Display clears horizon when survey changed 50201

In previous versions on 3D seismic surface display panel there could be an inconsistency between survey and horizon when changing surveys. Now they are consistent and picking a new survey will clear the horizon button.

## [Mapping - Map Sheets](#) [Enhancements](#)

### The 'Simple Scale Bar' option has been upgraded 12680

The map sheet in previous versions had the option to display a "simple scale bar". This option has been removed and replaced with the equivalent Display/ScaleBar alternative. Any existing map sheets using the simple scale bar will be automatically upgraded when opened.

---

## Mapping - Map Sheets

## Bug Fixes

### Corner annotation draws degrees symbol correctly on all operating systems 62968

The corner annotation for map sheets will now correctly draw degree symbols if they are enabled. Previously, symbols were drawn correctly on Windows while on Linux the degree symbol was not shown.

---

## Mapping - Seismic

## Bug Fixes

### Fixed dbMap 2D seismic line filtering by survey type 61835

The dbMap survey type filter of Display/2D Seismic Lines was not working. This option now correctly filters the line selection.

### 3D SEG Y seismic import to dbMap now creates 3D bin grid 50541

Importing 3D seismic from SEG Y to dbMap has been enhanced to also create a 3D bin grid before importing Inline/Xline data.

### Fixed potential crash when launching the Edit/Survey option from the Seismic Survey list 61155

A potential crash has been fixed, which could occur when using the Edit/Survey menu option from within the dbMap Seismic Survey list dialog.

## Added support for a text posting suffix when annotating formation thickness 64742

It is now possible to specify a text posting suffix when annotating well formation/zone thickness information on a map. This is in addition to the already supported text posting prefix.

## Additional Petrel-driven well coloring options available in Mapping 64657

When displaying wells from Petrel, in addition to specifying a fixed color, there are now options to color the surface hole symbol, bottom hole symbol, well path and formation tops using either the well color or well folder color defined in Petrel. Additionally, formation tops can be colored using the formation color defined in Petrel.

When using drag and drop, the colors from Petrel will be used by default.

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## Seismic (SDF) Editor

## Bug Fixes

### Crash when toggling seismic line activity fixed 64884

A crash when selecting the option "Select/Toggle Line Activity" when no lines were selected has been fixed.

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## Spatial Data Translator

## Enhancements

### Spatial data translator allows open lines to be optionally closed when writing polygons 48432

An option has been added to the Spatial data translator to allow open line shapes to be closed (via a direct connection from the end coordinate to the start coordinate) when writing polygon data. Previously, open lines were always discarded when writing to a polygon format.

---

## Spatial Data Translator

## Bug Fixes

### CRS Text File conversion correctly replaces existing projected coordinate values 66749

When CRS converting a text file, the "Replace coordinate columns" can be used to replace the coordinate columns with CRS converted values. A bug was fixed for this option where the converted Easting value was written twice instead of the Northing value being written.

### Spatial Data Translator allows geographic coordinates to be written in DMS format 47143

The spatial data translator has been enhanced to allow geographic coordinates to be written in either DMS or decimal degree format, when writing to relevant output formats (text file or Excel).

### Spatial Data Translator honours selected shape type writing to dbMap Culture 60736

The spatial data translator allows polygon data to be converted to line data. Previously, when this was done using dbMap culture, polygons written as lines would be incorrectly written as polygon shape type.

## Spatial data translator writes correct geographic column names when writing to Excel

58445

In previous versions, column names automatically generated for geographic data, would incorrectly suggest that the coordinate format was actually projected. This would cause the coordinate format to be incorrectly assumed to be projected if the Excel was subsequently read.

### [Surface Modeling - Contouring](#) [Enhancements](#)

#### Contouring and interpolation improvements

64184

Interpolation was improved in faulted and polygoned areas to achieve better consistency and smoothness in areas separated by faults and polygons, as well as better stitching to Z-values of polygons.

Contouring around faults and polygons was refined to achieve better consistency between contours, avoiding crossing contours, and higher accuracy correspondence between contours and colorfilled values beneath.

Also contouring and interpolation of flat and clipped areas has been enhanced to avoid contouring artefacts when bicubic interpolation is used (broken and ringing contours), and interpolation bumps in flat areas.

By utilizing multi-threading contouring performance is improved in about three time fast on a four-core system for grids without or with few faults and polygons.

For grids with heavy faults or polygons there is extra computation involved for the interpolation improvements around faults and polygons, multi-threading has offset the performance impact of the improved contouring to make the overall contouring performance for faulted and polygoned grids is comparable to previous versions, except for the 'Contour up to faults' option.

Improvements in the quality of the contours produced by the 'Contour up to faults' algorithm makes contouring noticeably slower than previous versions.

#### Contouring by cell performance improvements

65058

Performance of contouring by cell in Surface modelling has been improved by using multi-threading. Contouring on-the-fly when displaying surfaces/grids in Mapping has been improved as well.

---

### [Surface Modeling - Contouring](#)

### [Bug Fixes](#)

#### Contours no longer have kinks when grid surface has nodes equalling the contour value

54358

Contouring a grid does not produce kinks in the contours when the grid node values are equal to the contour level.

#### Contouring produces correct contour in faulted cell when grid node value matches contour level

55835

Contours generated in a faulted cell when one of the grid nodes has a Z-value matching the contour level now works as expected.

### [Surface Modeling - Exchange](#) [Enhancements](#)

#### Grid import ASCII - scanning and import performance improvements

62264

In Surface Modeling, the performance of grid scan and import ASCII file to Petrosys grid file is improved. Performance will vary between hardware and particular inputs but Petrosys has measured improvements of 2 to 3 times.

## Allow manual setting of interpolation method when importing XYZ ASCII file to Petrosys grid 54662

Interpolation method can now be set in when importing an XYZ ASCII file to a Petrosys grid file. Supported options are bilinear and bicubic.

## Support added for CRS conversion in fault stick exchange 66265

The Fault Stick Exchange option now has support for CRS conversion. The fault sticks will be CRS converted as long as there is a valid transformation for the source and destination CRSes.

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### Surface Modeling - Exchange

### Bug Fixes

## Exporting Petrosys grid to Zmap text grid with very small rotation angle now works 61464

Exporting grid to Zmap text grid now uses a tolerance when checking the rotation angle of the input grid. If the tolerance is exceeded then the grid can not be exported as Zmap grids do not support rotation.

## Dump Fault file allows overwrite existing Z values when interpolating from grid 51224

Option added for overwriting existing fault values when dumping interpolated fault points.

## Export to Z-MAP grid was adding incorrect extension to output file 38622

Correct extension (.dat) is applied in Export/Landmark/Zmap/Grid

## Export/Petrel/Grids continues when Overwrite mode is set to Keep and grid exists 55480

The task exporting grid to Petrel no longer fails when Overwrite mode is set to keep and the target already exists in Petrel.

## Grid/Load Fault File Surface/Groups now updates when selecting a fault file 59060

Grid/Load Fault File now updates Surface/Groups on fault file selection

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### Surface Modeling - General

### Bug Fixes

## Tools/DrawMap parameters restored on task open 59340

When re-opening saved Tools/Draw Map task the printing properties are restored correctly.

## Grid Arithmetic output grid functions documented 54690

Grid Arithmetic functions under group 'Output Grid functions' are now documented in help.

## Points can now be displayed using Single-Colour in Sampled Data Editor 48003

In previous versions selecting 'Single-Colour' did not work in 'Sampled data editor'. This has now been fixed.

## Surface Modeling sets up PRIMARY database connection at application start up 61342

PRIMARY database now connects automatically at the Surface Modeling application start up.

## **Tools/DrawMap was now prompts for correct raster file name** 60933

Tools/DrawMap displays an error if the raster output file is incorrect or if a file name is not set. Previously, a file would be generated with a name like .png.

## Surface Modeling - Gridding Enhancements

### **Bias gridding improvements** 34686

The bias gridding method has been improved. There are two methods for accounting for bias behaviour.

Bias-Polyline uses various types of polyline data files as an input information about bias structure.

Bias-Grid uses a more general, which has less requirements for quality, form grid as an input.

The UI has been update with several controls added to allow better flexibility and better fit to actual cases.

### **Direct gridding of third party grids** 19576

Third party grids can now be used as a grid input data source for Surface Modeling.

### **Grid/Merge/Regrid did not preserve fault information stored in each input grid** 37486

A new option has been added that allows embedded faults from input grid to be loaded into the output grid.

### **Added ability to scale stacking velocity Z-value** 51889

On Grid/Create Grid task stacking velocities data source panel TWT input seismic selection has 'Scaling' option.

### **Added post processing smoothing and clipping for 3D interpolated velocity grids** 58160

Added options of smoothing and clipping as post processing for 3D interpolated velocity grids.

### **Creation of Petrosys .gri grid files greater than 10GB now supported** 66818

Petrosys .gri grid files of greater than 10GB are now supported. Previously, Petrosys grids were limited to 10GB is size.

### **Extended Petrel drag and drop support to include clipping polygons in Surface Modeling** 63052

Clipping polygons can now be dragged and dropped from Petrel into Surface Modeling/Create Grid.

### **Updated arithmetic formulae for isochron calculation** 44394

Provided updated arithmetic formulae for isochron calculation keeping negative values in order to preserve correct zero edge.

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## Surface Modeling - Gridding Bug Fixes

### **Grid/Merge/Blend now supports grids in different CRSes** 55048

Grid/Blend works correctly when grids are in different CRSes. Previously if an input grid was not in the same CRS as the output grid it would be ignored.



## Added gridding option to use slope+curvature when estimating grid nodes

51400

Previously, the gridding has been using the slope (1st degree Taylor series) when estimating grid nodes. The new option using slope+curvature (2nd degree Taylor series) has been added. The default value is set to use the slope estimation.

## Grid/Create Grid with Openworks Point Data panel is not user friendly

20921

The selection button has been moved to the top of the panel to make the selection steps more obvious and user friendly.

## Grid/Merge/Blend now sets AOI correctly

15470

Grid/Merge/Blend now sets up AOI correctly. Previously, the AOI was not set automatically.

## Gridding panels showed error when opening for missing fault files when faults were turned off

37930

Unnecessary error messages about missing fault files no longer pop up. Previously, warning could occur if a fault file was set, but faults were not being used for the task.

## Kriging sill and range are always displayed on linear variogram

61238

Kriging variogram panel checkbox 'Display sill and range' now works as expected if 'Variogram type' is 'Linear'. Previously, the sill and range may not have displayed on the variogram if the sill and/or range were well beyond the data values.

## [Surface Modeling - Workflows/Scripting Enhancements](#)

### Add support for looping over 3D seismic surfaces for Petrel in Tools/Draw map

61430

Petrel 3D seismic horizons can now be looped through and be scripted in Tools/DrawMap workflow task.

### Select task parameter or function panel can be closed by double clicking on selected parameter or function

61473

Selecting scripting task parameter or function can be done by double clicking on selected item in the panel.

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## Surface Modeling - Workflows/Scripting

## Bug Fixes

### File/Merge option merged task scripting incorrectly<sup>31183</sup>

The File/Merge merges their scripting parameters correctly.

### Tools/DrawMap uses file selectors in scripting

59811

Tools/DrawMap task interactive scripting panel file fields are presented as file selectors instead of leaving them as plain string fields.

## [Velocities/Depth Converter](#)

## [Enhancements](#)

### Added ability to highlight selected data points/wells in Mapping

61535

On 'Well Checkshot Depth Conversion' and 'Well Time Depth Trend Conversion' panels the currently single selected point/well is highlighted and flashing in Mapping window. All well data sources other than WDF are supported.

## Added cross-validation to Time depth trend depth conversions <sup>61179</sup>

On 'Well Time Depth Trend Conversion' panel cross-validation function is now added with some extra columns in the original data points table.

## Time Depth conversion tasks have the options to exclude/include data points from data points table <sup>61320</sup>

On 'Well Checkshot Depth Conversion' and 'Well Time Depth Trend Conversion' panels' data points table two right-mouse-button menu items 'Exclude selected points' and 'Include selected points' have been added.

## Well Checkshot Depth Conversion added option to show data point list at run time <sup>59230</sup>

Added checkbox 'Show at runtime' for 'Well Checkshot Depth Conversion' panel. When it is enabled the Chart dialog will be shown at task run time.

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### Velocities/Depth Converter

### Bug Fixes

## Well Checkshot Depth Conversion panel was not updated correctly when WDF changed <sup>61322</sup>

Well Checkshot Depth Conversion panel is up-to-date when changing WDF. Previously, zone and well list information from the previous WDF could have been displayed.

## Well Time Depth Trend Conversion now uses two significant figures when displaying small values <sup>59852</sup>

Well Time Depth Trend Conversion panel TWT column is using more decimal places showing small numbers correctly, for example 0.00013, rather than zero. Values are displayed to two significant figures. Previously values were only shown to two decimal places which caused small values to be rounded to 0.

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### Wells (WDF) Editor

### Bug Fixes

## Back interpolate to WDF used bottom hole location when directional survey was missing and the MD was set to blank or zero <sup>40834</sup>

When back interpolating from an attribute grid to a WDF well and when the well has no directional survey, the MD is blank or zero, then the grid value is interpolated at the associated zone top and surface hole location. If surface hole location does not exist, the attempt is made to use bottom hole location instead.

## Tree view now shows well and zone selection files in sub-folders on Windows <sup>62525</sup>

The WDF Editor application on Windows will now show well and zone selection files that have been saved in a sub-folder of the project. Previously, on Windows only, selection files in sub-directories were not displayed. Application behaviour on Linux has not changed.