

Surpac 6.8.1

Enhancements

Geology

- **Export block model faces as valid solids**

The **Block model > Export > Block faces to DTM** function now exports block model faces as valid solids. If a solid has multiple spatially separate elements, it is saved as separate trisolations of the specified object. This is also true if the spatially separated elements share only a vertex or an edge with other spatially separated elements.

- **Select the object number and trisolation number from the drop-down lists for file based solid functions**

You can now select the object number and trisolation number from the **Object number** and **Trisolation number** drop-down lists respectively for all the file based solid functions under the **Solids > Solid tools > File intersection** menu.

- **Generate solids from a group of planes**

You can use the new **Solids > Solid tools > Slice solid using plane group** function to generate solids from a group of planes. The solids are created by slicing the input trisolation based on the input plane group and corridor length.

- **File based function to clean a point cloud and remove outliers**

You can use the new **Surfaces > Mesh tools > File function point cloud clean** function or **Solids > Mesh tools > File function point cloud clean** function to clean a point cloud and remove outliers (noise) when you generate a 2D or 3D solid.

- **Create a point cloud from a solid or surface trisolation**

You can use the new **Surfaces > Mesh tools > DTM to a point cloud file** function or **Solids > Mesh tools > DTM to a point cloud file** function to create a point cloud from a graphically loaded solid or surface trisolation.

- **Save the selected blocks as a constraint (.con) file**

In the context menu, you can use the new **Save blocks as constraint** option to save the selected blocks of a block model as a constraint (.con) file.

- **Remove a disconnected trisolation that has an an area or volume less than the specified threshold**

On the **Surfaces > Validation > Validate as DTM > Validate as DTM** and **Solids > Validation > Validate object/trisolation > Validate objects and trisolations** forms, you can use the new **Trisolation** section to remove a disconnected trisolation that has an area less than the specified threshold for surfaces and an area (for open trisolation) or volume (for closed trisolation) less than the specified threshold for solids.

- **Mesh or triangulate a portion of a point cloud**

On the **Surfaces > Mesh tools > Point cloud mesh > Point cloud 2D mesher** and **Solids > Mesh tools > Point cloud mesh > Point cloud 3D mesher** forms, you can use the new **Selection window**, **Digitize a polygon**, and **Select an existing segment** options in the **Mesh area** list to mesh a selected subset of a point cloud by manually selecting the area or triangulate a portion of a point cloud by defining a closed polygon in **Graphics**. You can define a closed polygon either by digitizing on screen or by selecting an existing closed segment present in a layer. All the points that lie within the polygon when it is projected down to the XY plane is meshed.

- **Modify the triangle intersection adjustment parameters while performing solids operations**

You can now modify the triangle intersection adjustment parameters while performing the solids intersection, outersection, or union operation. If any of these operations fail, the *Adjust Triangle Intersection* form appears and you can adjust the parameters and optionally save them as the default settings.

- **Point cloud data density reduction**

The point cloud 2D meshing functionality (CLOUD 2D MESH) has been enhanced to optionally reduce the cloud density. On the *Point cloud 2D mesher* form, you can reduce the cloud density by choosing the **Screen extents**, **Selection window**, **Layer**, **Digitise a polygon**, or **Select an existing segment** option in the **Mesh area** list.

- **Edit the point cloud in Graphics**

You can use the new **Surfaces > Mesh tools > Point cloud edit** function or **Solids > Mesh tools > Point cloud edit** function to edit the point cloud available in **Graphics**. The point cloud can be constrained either by screen extents, the selection window, or polygon.

Tools

- **Support for the LAZ point cloud format**

Surpac can now read the LAZ point cloud format (compressed LAS). The import process runs automatically the first time you connect to a new LAZ point cloud. A number of files are stored in a cache folder in the active directory. This process is time consuming the first time the data is loaded, but subsequent loads will be more efficient. The point cloud data can be displayed in **Graphics**.

- **The acQUIRE library updated to the latest 4.5.4.2**

The acQUIRE library has been updated to version 4.5.4.2.

- **SDM File format integration**

Surpac now supports reading and writing the new **.sdm** file format. This format has been designed to contain the contents of **.str**, **.dtm**, and **.ssi** files.

On the *Save File* form, when you select the **Force solid validation field on save** check box and save the file, the DTMs in the **.sdm** file are validated and their validation status is recorded in the **.sdm** file.

When you append an **.sdm** file to the current layer, and if the **.sdm** file has data with the same trisolation and triobject number as data in the current layer, the files will be merged together in the layer and the trisolation numbers are incremented appropriately.

On any form where you select a file for processing, such as *String Maths*, you can currently only browse a **.str** or **.dtm** file. The **.sdm** files are not currently compatible with these types of operations.

- **Create a centroid of a closed solid trisolation**

You can use the new **Solids > Solid tools > Solid centroid** function to create a centroid for a closed solid trisolation. If the selected solid trisolation is invalid or not closed, warning messages are displayed in the output window.

Configuration

- **Display point cloud data after you run the CLEAR SCREEN function**

After you run the CLEAR SCREEN function, you can use the new **Display point cloud** check box on the *Display > Strings > As lines > Drawing* and *Display > Points > Markers > Drawing* forms to display point cloud data in **Graphics**.

- **Surpac supports .licz licence file format**

Surpac now supports the **.licz** file format for licences. When you select the **Local** licence type on the *Update Licence* form, the licences provided in a **.licz** file can be extracted and used.

Miscellaneous

- **Hoops upgraded to the latest version**

Hoops has been upgraded to version 22.10.

- **Remove any triangle that has an area less than the specified threshold**

On the *Surfaces > Validation > Validate as DTM > Validate as DTM* and *Solids > Validation > Validate object/trisolation > Validate objects and trisolations* forms, you can use the new **Triangle** section to remove any triangle that has an area less than the specified threshold.

- **Option to set the working directory when double-clicking a folder in the navigator**

On the *Customise > Default Preferences* form, the **System Options > Application Defaults > Mouse settings** section now contains the **Set work directory on double click** option to determine if the current working directory is set when you double-click a folder in the navigator.

Applications

- **Integration with 3DDrive**

You can now use the Navigator to synchronise your files with 3DDrive.

Issues Fixed

Tools

- **Solids validated in Surpac version 6.2 were invalid in newer versions**

When you validate solids containing invalid edges, a warning message is now displayed. The solid can be made valid if you select the **Invalid Edges Check** check box on the *Customise > Default preferences > Application > Applications* form.

- **Segment range was not considered when you plotted a map**

When you plot a map, the **Segment range** field on the *Define a map* form is now considered.

- **Draping a string caused triangles to disappear**

When you use the **Surfaces > Drape string over DTM** function and drape a string in the same layer as a surface or solid with the same string number, the triangles will no longer disappear. Now, the function will be aborted and an error message is displayed requesting you to select a different string.

- **Geological patterns in drill holes were auto plotted only in pink**

When you auto plot, the geological patterns in drill holes are now plotted with the colours and styles defined in the display styles.

- **Various solids tools caused the geometry to lose its texture**

The various solids tools, such as intersection and unions, now leaves the geometry in a visibly select state.

- **The modified graphics layer was not highlighted when you opened multiple files using drag and drop operation**

When you open multiple files (.dtm or .str) using the drag and drop operation to append data, the corresponding modified graphics layer is now highlighted.

- **The EXPORT DTM TO OBJ function saved the output OBJ file to the incorrect working directory**

The EXPORT DTM TO OBJ function now saves the output OBJ file to the correct working directory.

- **Same file name was used for all the generated temporary TCL script files**

Previously, the same file name was used for all the generated temporary TCL script files. When using multiple instances of Surpac concurrently, the tcl scripts failed. This issue has now been fixed to generate temporary tcl script files with a unique name.

- **The .ssi files were not created from TCL scripts**

The .ssi files are now created from TCL scripts.

- **Digits after decimal place were not precise**

The precision of digits after the decimal point have been improved. You can now revalidate DTM/solid files with improved precision after the decimal place.

Geology

- **The TRISOLATION 3DM/DTM INSIDE and TRISOLATION 3DM/DTM OUTSIDE functions took more time to execute than expected**

The TRISOLATION 3DM/DTM INSIDE and TRISOLATION 3DM/DTM OUTSIDE functions now execute as expected.

- **Clip solid above a DTM and Clip solid below a DTM functions generated incorrect output for some scenarios**

When you run the **Solids > Solids tools > Clip solid above a DTM** and **Solids > Solids tools > Clip solid below a DTM** functions, Surpac now generates the correct output.

- **Old macros for certain functions showed incorrect behaviour**

Older macros recorded for the BM FILL INVERSE DISTANCE, BM FILL OK, BM FILL SK, and BM FILL NEAR NEIGHBOUR functions now run as expected and complete the block model estimation operation.

- **DTM CLIP function generated invalid trisolation when clipped using a string that has multiple segments**

The DTM CLIP function no longer creates an invalid trisolation with disconnected triangles when clipped using a string that has multiple segments. The trisolations are now correctly numbered.

- **The Next Page button required a double-click to proceed to the next page**

When you run the EDIT TABLE function, the **Next Page** button on the *Database Table - charge* form now proceeds to the next page with a single click.

- **Error message was displayed when the Drill Hole Intersect DTM form was cancelled**

On the *Drill Hole Intersect DTM* form, when you click **Cancel** an error message is no longer displayed and the form is closed successfully.

- **The coordinate values of the point cloud data were not precise**

The precision of coordinate values of the point cloud data have been improved.

- **Digitizing of a string does not stop when you press the ESC key**

When you press the ESC key, digitizing of a string now stops.

- **Objects and trisolations that are not overlapping with any other trisolation were displayed in the output report**

On the *Solids > Validation > Validate object/trisolation > Validate objects and trisolations* form, when you select the **Check overlaps** option, only the intersecting and overlapping tri-solutions are displayed in the output report.

- **The CLOUD CLEAN function generated incorrect output if the output path was in a different drive**

The CLOUD CLEAN function now generates correct output even if the output path is in a different drive.

- **The resultant point cloud was shifted from the original position**

When you use the CLOUD EDIT function, the resultant point cloud is now at the same datum position of the original point cloud.

- **Unable to save each trisolation into a separate triobject in the BM GRAPHICS DUMP DTM function**

When you use the BM GRAPHICS DUMP DTM function, you can now choose to save each trisolation into a separate triobject.

- **Output layer was not active after the point cloud mesh operations**

After you perform the CLOUD2DMESH and COUD3DMESH functions, the output layer is now active.

- **The default value for removing small triangles in solid validation was large**

The default value for removing small triangles in solid validation is now changed from 0.5 units to 0.025 units.

Configuration

- **Complex viewports saved as a SWA file were not loaded in Surpac**

You can now load complex viewports saved as a SWA file in Surpac.

- **LICZ support for Network Licence Manager**

Network Licence Manager now supports the .licz file format for licences. The licence file can be extracted from .licz to use it.

- **The data representation of the attributes in a plane file was incorrect**

When you create the horizontal, vertical, and inclined planes, the data representation of the attributes in a plane file is now restricted to three decimal places.

- **The OPEN FILE function created the new layer name incorrectly**

The OPEN FILE function now correctly creates the new layer name if the **Replace current data** option is cleared on the *Open File* form.

- **Double-clicking the planes folder changed the working directory to the planes folder**

When you double-click the planes folder, the working directory no longer changes to the planes folder.

Miscellaneous

- **Point cloud files that contain commas or semicolons were not loaded in Surpac**

In Surpac, you can now load the point cloud files that use commas or semicolons instead of blank spaces to delimit the data.

Documentation Changes

Tools

- **Updated help for the Plot insert title image function**

In the help section for **Plot insert title image** function, a tip is added to avoid having a transparent background.

Configuration

- **Print help pages**

In Surpac help, you can use the new **Print** button in the top-left corner to print the current page.

- **Updated help for the SciDrillholeSelect command**

In the help section for SciDrillholeSelect command, the documentation for the DisplayDetails argument has been updated.