What's New in Surpac 6.9

The following enhancements have been implemented in Surpac 6.9:

Geology

- On the *Solids > Mesh tools > Point cloud mesh > Point cloud 3D mesher* or *Surfaces > Mesh tools > Point cloud mesh > Point cloud 2D mesher* form, you can use the new **Mesh auto repair** check box to repair a generated mesh.
- When you draw a DTM, on the *Display > Surface or Solid > Drawing* or *Solids > Display > Display object > Drawing* form, you can use the new **Display object number** and **Display trisolation number** check boxes to display the object and trisolation numbers in **Graphics**.
- On the *Surfaces > Mesh tools > Point cloud edit > Point cloud edit* or *Solids > Mesh tools > Point cloud edit > Point cloud edit* form, you can use the new **Retain points inside the polygon** and **Retain points outside the polygon** radio buttons to retain the cloud points inside or outside the polygon or selected region in the output file.
- When you import or export **.dsc** files, on the *Select database tables to include in format* form, you can use the new **Include all tables** and **Space fill all tables** check boxes to select or clear all the rows in the **Include** and **Space fill** columns respectively.
- You can use the new **Solids > Validation > Remove Small Triangles** function to remove specific triangles from a mesh. On the *Remove Small Triangles* form, in the **Triangle Surface Area** field, you can specify a minimum surface area for triangles. All triangles smaller than the specified area are removed. You can also use the **Preview** button to view the impact of removing small triangles from the mesh before you apply it on the mesh.
- In the point cloud meshing functions, the precision of coordinate values of the output mesh data have been improved.
- In the new **Database > Structural suite** function, you can use the tools to orient geological dip and dip direction data for data visualisation, processing, and analysis.
- You can right-click any menu or toolbar, and then select **Menus > Database** to display the **Structural Suite** function in the **Database** toolbar.

Tools

- You can use the **Select Point/Triangle/Block** tool to select an individual point in a point cloud file.
- You can use the *Solids > Solid tools > Solid centroid > Centroid of solids* form to operate on all trisolations in the active layer or on a selected trisolation. The output centroid is now available on the selected graphics layer and contains the object number, trisolation number, and trisolation name in the D1, D2, and D3 fields respectively.
- When you save or convert a file to the SDM file format, you can now select a styles file in the **Styles file name** field on the *Save File* or *Convert File Format* form.

Miscellaneous

- The CLOUD 2D MESH and CLOUD FILE MESH functions are now multithreaded for 2D meshing on the XY plane. For quick results while meshing, you can use multiple CPU cores by changing the **System.Multithread Count** flag in the **defaults.ssi** file.
- When you obtain a solid by automatic stitching of a series of polygons, the separate trisolations are now given incremental IDs. On the *Solids > Triangulate > Connected segments > All > Triangulate all connected segments* form, you can use the new **Validation** section to validate the trisolations created and save these trisolations in the validation report.

Configuration

- In the **Customise > Default Preferences > Applications** section, you can use the new **High precision** check box to perform high precision triangle intersection operations and produce accurate results for small triangles.

Applications

- Previously, if you had Microsoft Office 32-bit installed and you tried to connect to a Microsoft Access (.mdb/.accdb) Database Engine from within Surpac 64-bit, the Microsoft drivers would not allow this connection. A new bridge is now available in Surpac to communicate with the 32-bit drivers. This process is automatic and does not require any user interaction. The next major release of Surpac will be distributed as 64-bit only.
- The **3D**EXPERIENCE platform facilitates collaboration across your entire organization. Flexible solutions are available to provide your business with a single source of truth and full traceability for mining data.
  You can also use roles and apps on the **3D**EXPERIENCE platform to manage mining projects; monitoring tasks, risks, and issues; managing approval workflows; and sharing project information within and outside the team.
  The Enterprise Collaboration functionality in Surpac 6.9 enables you to access and modify existing content and to create and upload new content to the **3D**EXPERIENCE platform directly from Surpac.
  To enquire about platform roles and access, contact GEOVIA sales.

The following issues and defects have been fixed in Surpac 6.9:

Tools

- On the **View > Dockable windows > Planes** panel, you can use the new **Turn polylines selectability on or off** button to control whether polylines are selectable.
- You can now save the string or DTM file in the binary (default) file format to improve precision.
- When you load large SDM files, the progress bar now indicates the state of the loading process.
- You can now use the **Select tool** to select multiple SDM files with the same object number and different trisolation numbers that are loaded in the same layer.
- In the **Plotting** window, when you open and close multiple **Plot Preview** windows, the performance has been improved so that it takes less time to close the **Plotting** window.
- In the **Plotting** window, you can now move the appended data in the viewport.
- On an English operating system, when you save the name of an SDM file in Russian, Surpac no longer exits unexpectedly and a warning message appears.
- When you save an SDM file multiples times, duplicate entries for styles are no longer created. In addition, when you load multiple SDM files containing strings with same number, the segment number is now assigned correctly to the respective strings. The attribute label, which previously appeared twice in the SDM file, now appears only once.

Geology

- On the *Solids > Validation > Validate object/trisolation* form, during solid validation when you select the **Autocorrect problems** check box, Surpac no longer stops responding for certain data. It repairs invalid trisolations - trying up to 20 times before returning the result.
- The CREATE COMPOSITE and GRAPHICALLY EDIT COMPOSITE functions now remain active until you exit the function.
- OBJ files now open with the correct texture information.
- When you zoom in or out or rotate a large point cloud file in **Graphics**, it no longer causes a delay. In addition, you can control zooming in or out in a point cloud file by editing **zoom_factor** in the **defaults.ssi** file.
- When you load a large block model with attributes and constraints, Surpac no longer exits unexpectedly. When you load a constrained block model, if there are incorrect attributes and calculated attributes, the correct attributes are loaded and a warning message appears for any unloaded attributes (including calculated attributes).
- When you use the **Solid repair** tool with the AUTO MESH REPAIR function, Surpac no longer exits unexpectedly.
- The following geology symbols are added in the Structural Suite library:
  - foliation_vertical.str
  - foliation_horizontal.str
  - foliation_inclined.str
  - strata_inclined.str
  - strata_horizontal.str
  - strata_vertical.str
  - cleavage_horizontal.str
  - cleavage_inclined.str
  - cleavage_vertical.str
  - joint_horizontal.str
  - joint_inclined.str
  - joint_vertical.str

Engineering

- The TRISOLATION FILE DTM/DTM UPPER or LOWER and TRISOLATION DTM/DTM UPPER or LOWER functions now determine upper or lower triangles of two surfaces and also generate output for sensitive inputs.

Configuration

- The profiles from Surpac 6.6.2 can now be used in versions 6.7 or 6.8, despite the menus and tool bars that were wrongly recorded.
- Surpac can now operate with multiple physical dongles plugged into the computer's USB ports.
- You can now use the SHAPEFILE TO STRING function with unlicensed Surpac.
- The DirectX 9 (dx9) and OpenGL (opengl) graphics drivers are supported only in Surpac 6.9 and earlier. In Surpac 7.0 and later, these drivers will be deprecated and no longer be available for use.

Applications

- Hub integration has been removed from Surpac. You can no longer access or operate Hub commands in Surpac.

Miscellaneous

- You can now digitise a new point on an OBJ data having extents away from the origin. In addition, the **sclSelectPoint** function works for the OBJ data.

The following documentation changes have been implemented in Surpac 6.9:

Configuration

- In the help section for **Composite downhole** function, a tip is added to help you understand the results when you determine the composite length by fixed length.

Geology

- In the block modelling tutorial, two notes are added for the dynamic anisotropy ordinary kriging task to help you to use a suitable block size during dynamic anisotropy estimation. It also helps you understand that the block size estimated has consistent information in the data.