

Surpac 2020

Enhancements

Tools

- **Support for Microstation DGN format files**

Surpac now supports reading and writing of the Microstation DGN format files.

- **Classify .sdm files based on metadata**

You can use the new CLASSIFY SDM function to classify input .sdm files based on the metadata that you provide on the *Solids > Solids tools > Classify SDM > SDM classification* form. The output is a classified .sdm or .dtm file.

- **Save files in the .sdm file format on the Save all layers as form**

On the *File > Save > Save all layers as > Save all layers as* form, you now select the new **GEOVIA SDM Files** option in the **Output format type** list to save files in the .sdm file format.

Engineering

- **Delete small fragments of stopes from the output using the Stope slicer function**

When you use the **Design > Stope design tools > Stope slicer** function, the stopes that have volume below a certain limit are now deleted automatically. You can define this limit in the **Delete trisolation less than volume** field in the **Customize > Default preferences > Settings > Applications** section.

- **Split multiple solids into stopes using the Stope slicer function**

You can now use the **Design > Stope design tools > Stope slicer** function to split multiple solids into stopes, when you enter a valid range of triobjects and trisolations in the new **Object range** and **Trisolation range** fields, respectively, on the **Slicing** tab of the *Stope slicer* form.

- **View the name of the trisolation in the output reports for the Stope slicer or Report volume of solids function**

When you use the **Design > Stope design tools > Stope slicer** or **Solids > Solid tools > Report volume of solids** function, you can now view the name of the trisolation in the output block model or the solid modelling object report, respectively.

- **Extend the toe of a group of blast holes using the BLAST EXTEND SINGLE function**

On the *Design > Blast design > Blast design > Extend collar points > Bottom of hole parameters* form, you can select the new **Select multiple holes** check box and select an option in the new **Selection type** list. The options are:

- **All holes** to extend the toe of all blast holes
- **Holes inside box** to extend the toe of all the blast holes inside the selected box
- **Holes inside segment** to extend the toe of all the blast holes inside the selected closed segment

- **Use various verification entities that are grouped in a triobject with different trisolation IDs**

When you use the STOPE OPTIMIZER or SSO function, you can use various verification entities (such as, seed, slice, undiluted stope, far dilution output, near dilution output, and failed seed) that are grouped in a triobject with different trisolation IDs. These IDs are based on the colours that you can specify in the new **Verification shape colours** section on the **Input/Output > Output customisation** tab of the *Design > Stope shape optimizer > Stope shape optimizer > Stope shape optimization tool* form.

- **Run multiple stope shape optimizer XML project files simultaneously**

You can use the new STOPE OPTIMIZER MULTIPLE or SSOM function to run multiple stope shape optimizer XML project files simultaneously. You can also use the new *Design > Stope shape optimizer > Stope shape optimizer multiple > Run multiple stope shape optimization projects* or *Block model > Block model > Stope shape optimizer multiple > Run multiple stope shape optimization projects* form for the same.

- **Use the Stope Shape optimizer function in multiple ways**

You can now use the **Design > Stope Shape optimizer** function in the following ways:

- In the **Navigator**, double-click a valid **.xml** file, or drag and drop a valid **.xml** file in **Graphics**.
- In the **Navigator**, right-click a valid **.xml** file and choose **Edit** from the shortcut menu.

Also, you can edit an **.xml** file by right-clicking an **.xml** file in the **Navigator**, and choose **Edit** from the shortcut menu.

- **Create and run multiple stope shape optimizer XML project files simultaneously**

You can use the new STOPE SHAPE OPTIMIZATION IN BULK or SSOB function to create multiple stope shape optimizer XML project files and run them simultaneously. You can also use the new *Design > Stope shape optimizer > Stope shape optimization in bulk > Stope shape optimization in bulk* or *Block model > Block model > Stope shape optimization in bulk > Stope shape optimization in bulk* form for the same.

Configuration

- **Change the font, size, and style of the menu commands, text, table header, and message window**

You can use the **Customise > Font editor** function to change the font, size, and style of the menu commands, text, table header, and message window.

- **View metadata types for SDM Version 2 files in the Properties pane**

You can now use the translated text to view metadata types for SDM Version 2 files in the **Properties** pane.

Geology

- **Reduce the point cloud density with the new Deviation method when using the CLOUD 2D MESH function**

On the **Cloud density reduction** tab of the *Surfaces > Mesh tools > Point cloud mesh > Point cloud 2D mesher* form, you can select the new **Deviation** option to reduce the point cloud density based on the deviation parameters, **Maximum deviation** and **Maximum distance**.

- **Define the number of points to reduce the point cloud density**

On the **Cloud density reduction** tab of the *Surfaces > Mesh tools > Point cloud mesh > Point cloud 2D mesher* form, you can use the new **Count of points in cell** field to define the number of points to be considered inside a cell that will be used to reduce the point cloud density.

- **Display or hide the point cloud data in Graphics**

The following are the new functions available in the new **Display > Point cloud** menu:

- **Display point cloud** to display any point cloud data available in **Graphics**.
- **Hide point cloud** to hide any point cloud data available in **Graphics**.
- **Select classifications** to display the point cloud data in **Graphics** using classifications.

Also, in the **Customise > Settings > Graphics** section, you can select the new **Display classifications list** check box to display the *Classifications list* form when you load the point cloud data in **Graphics**.

- **Mesh the point cloud data with classification**

On the **Classification** tab of the *Surfaces > Mesh tools > Point cloud mesh > Point cloud 2D mesher* form, you can now select the new **Use classifications** check box to view the list of the classifications for the point cloud. You can now classify the point cloud data and then mesh these classified subsets.

- **Create a solid mesh from point cloud data using spheres**

You can use the new **Solids > Mesh tools > Point cloud lexicographic mesh** function to create a solid mesh from point cloud data using spheres. For example, you can use this function to create tunnels and similar geometry.

- **Reduce point cloud density when using the CLOUD LEXICOGRAPHIC MESH function**

On the *Solids > Mesh tools > Point cloud lexicographic mesh > Point cloud lexicographic mesher* form, you can select the new **Reduce cloud density** check box and enter **Maximum deviation** and **Maximum distance** values to reduce the point cloud density.

Applications

- **View the name of the user who has uploaded that version of the file on the File properties form**

In the **Enterprise Collaboration** tree, when you right-click a file, you can view the new **Owner** column on the *File properties* form. In this column, you can view the name of the user who has uploaded that version of the file.

- **Add attribute type information to stope slicing function when exporting to SDM**

When we run Stope Slicing function attribute type information is now added in the Surpac SDM file header section. Also values of these attributes will be added in individual triangulation section.

Miscellaneous

- **Retain the selected classifications when you use the CLOUD 2D MESH function**

When you use the CLOUD 2D MESH function, the selected classifications for point cloud data are retained on the **Classification** tab of the *Surfaces > Mesh tools > Point cloud mesh > Point cloud 2D mesher* form, even if you close the form and reopen it.

- **Use the new Point cloud menu for functions related to point cloud**

You can use the new **Point cloud** menu for the following functions related to point cloud:

- Meshing multiple point cloud files simultaneously
- Converting **.xyz** and **.asc** point cloud files to **.str** string files
- Converting **.str** string files to **.xyz** or **.asc** point cloud files
- Filtering **.xyz** and **.asc** point cloud files to lower their resolution

You can use the new **Point cloud** menu to access many existing point cloud functions also.

Issues Fixed

Geology

- **The block line values were not included when you used the BM IMPORT WHITTLE function**

When you use the BM IMPORT WHITTLE function to import a Whittle MSQ file into Surpac, the block line values (mcaf, pcaf, push_back, sg, volume-factor, i, j, k, block-tonnage, and mined periods) are now included even when the **Retrieve Parcel Information** check box is cleared on the *Block model > Block model > Import > Whittle file > Import Whittle file* form.

- **The text in the Description field was displayed incorrectly when you saved a block model in the Datamine or Surpac free block model format**

When you save a block model in the Datamine or Surpac free block model format, the text in the **Description** field on the *Block model > Block model > Summary > Block model summary* form is now displayed correctly, and is the same as the text saved in the original block model.
- **The logical path could not be specified to save the output constraint file when you used the BM MAKE CONSTRAINT or BM GRAPHICS CONSTRAIN ADD function**

When you use the BM MAKE CONSTRAINT or BM GRAPHICS CONSTRAIN ADD function to constraint a block model using a file, you can now specify the logical path to save the output constraint file.
- **A zero was appended to the output CSV file name when you exported the block centroid and dimensions to a CSV file**

When you select the **Output File as** as the **CSV** option and the **Id** field is blank on the *Block model > Block model > Export > Block centroids & dimensions to string file > Create attribute report from block model* form, a zero is no longer appended to the output CSV file name.
- **The invalid azimuth and dip values aborted the macro when you run the ordinary kriging, inverse distance, or nearest neighbour estimation in a macro**

When you run the ordinary kriging, inverse distance, or nearest neighbour estimation in a macro, the invalid azimuth and dip values no longer aborts the macro, and a warning message is no longer displayed.
- **The records of a specified hole ID from a database were not deleted**

When you load a drill database, you can now delete records of a specified hole ID from a database, and the number of records deleted is displayed in the message window.
- **Using the CLOUD EDIT function when the point cloud data was not available in the selected area caused Surpac to exit unexpectedly**

When you use the CLOUD EDIT function, select the **Digitise a polygon** option in the **Edit area** list on the *Point cloud edit* form (**Surfaces > Mesh tools > Point cloud edit** or **Solids > Mesh tools > Point cloud edit**), and the point cloud data is not available in the selected area, Surpac no longer exits unexpectedly. A warning message is now displayed in the message window.
- **A decimal precision issue was caused when you saved a new point cloud**

In the **Customise > Settings > Applications** section, you can use the new **Decimal precision** field to avoid the decimal precision issue when you save a new point cloud. You use this field to define the decimal precision to be considered when you save a new point cloud using the **Point cloud edit** function. By default, three decimal precision is used.
- **Using the calculated attribute (bearing or dip) in the ellipsoid specification of an inverse distance estimation caused Surpac to exit unexpectedly**

When you use the BM FILL INVERSE DISTANCE function for the inverse distance estimation, and the use of a calculated attribute (bearing or dip) in the ellipsoid specification, Surpac no longer exits unexpectedly.
- **The Surpac rendering functions did not work as expected for the OBJ data type**

The Surpac rendering functions, such as EDGES ON, EDGES OFF, FACES ON, FACES OFF, and transparency slider, now work as expected for the OBJ data type.
- **The weight was not applied to the descretisation points when you performed the inverse distance estimation**

When you use the BM FILL INVERSE DISTANCE function for the inverse distance estimation, the weight is now applied to the descretisation points and single samples to generate the output report.
- **The volume was reported as zero in the output report when you used the BM VOL TON REPORT function and the two DTMs overlapped**

When you use the BM VOL TON REPORT function to report volume between DTMs, and the two DTMs overlap, an error is now displayed in the output report.
- **The Quick constrains function did not work when you selected data in the inactive layer**

When you use the **Quick constraints** function and select data in the inactive layer, this function now works for surface, solid, and string object types.

- **The Vulcan block model was displayed incorrectly in Graphics when you applied float attributes as a constraint**

When you apply float attributes of a Vulcan block model as a constraint, the Vulcan block model is now displayed correctly in **Graphics**.
- **The results could not be saved for a new attribute when you used the BM RECOVERABLE PRODUCT function**

When you use the BM RECOVERABLE PRODUCT function, you can now save the results for an existing or a new attribute in the **Recoverable product**, **Cumulative ratio**, and **Individual ratio** fields on the *Block model > Column processing > Recoverable product > Block model recoverable product ratios* form.
- **Inserting or updating records in a database caused a performance issue of the SQL-ODBC connection**

When you insert or update records in a database, the performance of the SQL-ODBC connection has been improved.
- **A failed operation caused the Adjust Triangle Intersection form to appear multiple times**

When you use the TRISOLATION FILE 3DM/3DM INTERSECT function for a failed operation, you can now adjust the intersection to use the operation again, click the **Cancel** button to cancel the entire function, or the **Skip** button to skip calculations on the *Adjust Triangle Intersection* form.
- **An access violation message was displayed when you saved a block model in the datamine block model format**

When you select the **Datamine Block Model** option in the **Model Format** section to save a block model in the datamine block model format on the *File > Save > Block Model as > Save Model* form, the access violation message is no longer displayed.
- **A point cloud was created with incorrect coordinates when you used the DTM TO CLOUD function**

When you use the DTM TO CLOUD function to create a point cloud from a trisolation, a point cloud is now created with correct coordinates.
- **Using the CLOUD 2D MESH (2PCM) function for density reduction caused a performance issue for large point cloud data**

The performance of the CLOUD 2D MESH (2PCM) function for point cloud density reduction has been improved for large point cloud data, and the time taken to complete this operation has been reduced.
- **The block model report for .bmf files displayed incorrect grade class values**

The block model report for extended Vulcan block model (.bmf) files now displays correct grade class values. These values are improved and close to the original values, and displayed as the attribute values of the files that are imported.

Miscellaneous

- **The calculations involving the next point were inaccurate for closed strings when you used the STR MATHS function**

When you use the STR MATHS function, the calculations involving the next point (for example, `_next_2dlen`) are now accurate for closed strings.
- **The multithreaded loading capability of the Teigha library was not used when you loaded the DWG, DXF, or DGN files**

When you load the DWG, DXF, or DGN files, the multithreaded loading capability of the Teigha library is now used to improve performance.
- **A warning message was displayed when you used the CLOUD FILE MESH function and saved the output file with .sdm extension**

When you use the CLOUD FILE MESH function and save the output file with `.sdm` extension, a warning message for invalid extension is no longer displayed. You can now use this function to create a solid or surface mesh from point cloud data, and save it in the output file with `.dtm` or `.sdm` extension.
- **The previous value for some fields were not populated when you selected the Last value for all fields option and re-used the Slope shape optimizer function**

When you use the **Design > Slope shape optimizer** function, select the **Last value for all fields** option, and then re-use this function, the previous value of fields, such as **Project name** and **Block Model**, are now populated.

- **The 3DExperience panel was visible in the Surpac user interface by default**

The 3DExperience panel is no longer visible in the Surpac user interface by default. To access the 3DExperience panel, you have to manually set PWDBY_PANEL = true in the **pbdefaults.ssi** file.
- **Data in Graphics could not be rotated when you used the POINT MOVE function and block model and string were displayed**

When you use the POINT MOVE function, and block model and string are displayed, you can now rotate the data in **Graphics**. However, you may no longer be able to move points that are behind or over the block model in **Graphics**.
- **The metadata was not displayed in the Properties pane when you used the Undo function after deleting an object or a trisolation**

When you use the **Solids > Edit object > Delete** or **Solids > Edit trisolations > Delete** function to delete an object or a trisolation from **Graphics**, and then use the **Edit > Undo** function to undo the deletion, the metadata of the restored object or trisolation is now displayed in the **Properties** pane.
- **The output file overwrote the input file when you used the CREATE DTM function**

When you use the CREATE DTM function, a confirmation dialog box is now displayed. On this dialog box, you can select whether the output file should overwrite the input file.

Configuration

- **The path of the logicals file could not be reset after you had set a custom path**

In the **Customise > Default preferences > Settings > Alias files > Alias files** section, after you set a custom path for the logicals file in the **Logicals file** field, you can now delete this path to reset the path of the logicals file to the default path.
- **The Convert function did not convert multiple files to the specified format**

You can now use the **File > Convert** function to convert multiple files to the specified format.
- **The points below the block model could not be selected or moved**

When you use the POINT MOVE function, the points below the block model can now be selected or moved.
- **The temporary circle was not displayed in Graphics when you used the CIRCLE BY DRAG function**

When you use the CIRCLE BY DRAG function, and position the pointer, and then use a click and drag action to define the centre and radius of the circle, the temporary circle is now displayed in **Graphics**.
- **The files were not displayed in Graphics when you held down the Ctrl key awhile dragging multiple files from Windows Explorer into Surpac**

When you hold down the Ctrl key while dragging multiple files from Windows Explorer into Surpac, the files are now displayed in **Graphics**. All the files are added to the current graphics layer, and the layer is marked as edited. You can also zoom to fit all data in **Graphics**.
- **The string and segment numbers for a specific drawing method were not displayed for a string file in Graphics**

On the *Display properties > Strings and points > Set drawing styles* form, when you select the **#string-segment-no,line,marker,arrow/100/5** option in the **Drawing Method** list, the string and segment numbers, and the direction of the arrow are now displayed for a string file in **Graphics**.
- **Inconsistencies in Russian language translation**

The Russian language translation has been updated to resolve the inconsistencies.
- **The mouse pointer was focused on the All Files list after you closed the shortcut menu in the Navigator**

In the **Navigator**, when you close the shortcut menu and press D on the keyboard, the mouse pointer now focuses on the **Function chooser** instead of the **All Files** list.
- **The None and More Colours buttons on the colour palette of the Cloud colour list were not visible in the Dark theme**

In the **Customise > Default preferences > Settings > Graphics** section, when you select a colour in the **Cloud colour** list, the **None** and **More Colours** buttons on the colour palette are now visible in the **Dark** theme.

- **The information on the About dialog box was not readable in the Dark theme**
On the *Help > About* dialog box, the information about the version of Surpac installed on your computer is now readable in the **Dark** theme.
- **An erroneous file was generated when you exported a single point to a 3D PDF**
When you use the EXPORT TO 3D PDF function to export a single point to a 3D PDF, an erroneous file is no longer generated. An appropriate warning message is displayed in the message window.
- **The table on the Delete multiple layers form could not be expanded when you expanded this form**
When you expand the *Edit > Layer > Close multiple layers > Delete multiple layers* form, the table in which you select the layers to be deleted can now be expanded, and you can view all the layers in the table.
- **Icons on the Settings form were not displayed correctly in the Dark theme**
On the *Customise > Default preferences > Settings* form, icons (such as **Categories**, **Sort**, **Description**, **Expand**, and **Collapse**) have been modified to display these icons correctly in the **Dark** theme.
- **Surpac did not work when you opened it in the Chinese language interface**
When you open Surpac in the Chinese language interface, Surpac now works. Errors are no longer displayed when you use the UPDATE LICENCE (UL) function to open the *Update license* page.

Tools

- **The segment area was displayed incorrectly in the message window after editing the points**
When you use the **Inquire > Segments properties** function, and the points have been moved since the last property operation, the segment area is now displayed correctly in the message window.
- **The details of a temporary string were displayed in an error message when you used the Clip DTM with string function and a zero area triangle error appeared**
When you use the **Surfaces > Clip or intersect DTMs > Clip DTM with string** function and a zero area triangle error appears, the details of a temporary string are no longer displayed in an error message.
- **Changing font properties in the Plotting window caused Surpac to exit unexpectedly**
In the **Plotting window**, when you change the font properties, such as pen, bold, italic, and underline, Surpac no longer exits unexpectedly.
- **The options in the Symbol list were not populated on the Point operations tab of the Define a string entity form when you edited entities**
When you use the ENTITY MODIFY function to edit entities, the options in the **Symbol** list are now populated on the **Point operations** tab of the *Define a string entity* form.
- **The Select Data Source form was displayed multiple times when you connected to the acquire database**
When you connect to the acquire database, the *Select Data Source* form is no longer displayed multiple times.
- **The name GMSG OMF is changed to GMG OMF**
The name of the Global Mining Standards Group has been changed from GMSG to GMG. Therefore, the name of the following UI terms that are related to GMSG OMF are changed to:
 - **GMG OMF Files** option in the **Output format** list on the *File > Save > string/DTM > Save File* and *File > Save as > Save File* forms.
 - **GMG OMF Files** option in the **Output Format Type** list on the *File > Convert > Convert File Format* form.
 - **GMG-OMF** section on the *Customise > Plugin preferences > Plugin Defaults* form.
- **Importing a Microstation (.dgn) file using the CAD IMPORT function caused Surpac to exit unexpectedly**
When you use the *File > Import > AutoCAD or Microstation file into multiple layers > Import AutoCAD or Microstation file into multiple layers* form to import a Microstation (.dgn) file, Surpac no longer exits unexpectedly.

- **Output from different versions of Surpac was inconsistent when you created a DTM using the file-based method by defining the boundary string to clip the surface**
The output from different versions of Surpac is now consistent when you use the **Define the boundary string to clip the surface** section on the *Surfaces > DTM File functions > Create DTM from string file > Create a surface* form to create a DTM.

Engineering

- **The previously selected option in the Horizontal direction field was not retained on the Expand Segment by Berm Width form**
When you select the **Last value** option in the shortcut menu, the previously selected option (**expand** or **contract**) in the **Horizontal direction** field is now retained on the *Design > Expand segments > By berm width > Expand Segment by Berm Width* form.
- **The Assign multiple domains function did not work for objects with multiple trisolations**
The **Database > Analysis > Assign multiple domains** function now works for objects with multiple trisolations. The multiple geology domains for objects with multiple trisolations are assigned to drillholes in a database.
- **The colours of the stopes, sub-economic stopes, and failed stopes were not based on your specification**
When you use the STOPE OPTIMIZER or SSO function, the colours of the stopes, sub-economic stopes, and failed stopes are now based on what you have specified in the **Shape colour** section on the **Input/Output > Output customisation** tab of the *Design > Stope shape optimizer > Stope shape optimizer > Stope shape optimization tool* form.
- **Specify the object IDs for stopes, sub-economic stopes, and failed stopes**
When you use the STOPE OPTIMIZER or SSO function, you can specify the object ID to be used for all output stope shapes, output sub-economic stope shapes, and output invalid (that failed the result filter) stope shapes. You can specify this ID in the new **Object IDs** section on the **Input/Output > Output customisation** tab of the *Design > Stope shape optimizer > Stope shape optimizer > Stope shape optimization tool* form.

Product Analysis

- **An error message was displayed when you imported drillholes from the acquire database**
When you import drillholes using the **Database > Database > Import drillholes from acquire** function, an error message is no longer displayed and the drillholes are imported.

Applications

- **SDM data was not uploaded as Geological Features or Terrains in the 3DEXPERIENCE panel for a specific case**
On the *Customise > Plugin preferences* form, when you select the **Version 2** option in the **SDM output version** list, you can now upload the SDM data as **Geological Features** or **Terrains** in the **3DEXPERIENCE** panel.
- **Support for the latest 3DEXPERIENCE server protocols**
Surpac has been updated to support the latest **3DEXPERIENCE** server protocols.
- **The What's New in Surpac topic is available in the Help**
The What's New document is no longer installed in the default shared files location. You can use the Help command to access information about updates to a Surpac release in the What's New in Surpac topic in the Help.