

## Surpac 6.6.2

### Enhancements

#### Geology

- **New SCL command SciBlockModelGetValues**

A new SCL command SciBlockModelGetValues has been implemented which helps you to get attribute values in a block identified by a valid index number in a block model. It retrieves values either at the existing blocks' sizes using SciBlockModelIterateStart or SciBlockModelColumnIterateStart, or by the smallest block size using SciBlockModelLevelIterateStart.

#### Configuration

- **Licence Manager 14.7**

Licence Manager 14.7 is provided with Surpac 6.6.2. This version of Licence Manager (LM) includes the following features:

- Support for MineSched 9.0. If you run MineSched 9.0, you must use LM 14.7, instead of an earlier version, to successfully receive MineSched 9.0 licences.
- Rebranded for GEOVIA rather than Gemcom. As part of the rebranding, the installation directory has changed from C:\Users\Public\Gemcom\LicenceManager to C:\Users\Public\GEOVIA\LicenceManager.
- The name of the Licence Manager service is now GEOVIA Licence Manager Service.
- Be aware that Licence Manager is no longer supported on Windows XP.

Note: After installing LM 14.7, use File > Open to open the .udt file that contains your licences, click the Save icon, and then start the service.

### Issues Fixed

#### Geology

- **BM GRAPHICS ATTRIBUTE COLOUR colours blocks incorrectly for boundary values**

Previously, a rounding issue caused Surpac to interpret some decimal values incorrectly. For example, when colouring a block model by attribute, if you were colouring by grade  $\geq 0.7$  and a block had a value of 0.7, the block was not coloured. The problem could also occur when the value was used in a calculated attribute. Now the function BM GRAPHICS ATTRIBUTE COLOUR rounds the values correctly, colours the blocks correctly, and calculates attribute values correctly.

- **Pit numbers not imported from a Whittle model**

Previously, when you imported a Whittle block model into Surpac using the BM IMPORT WHITTLE function, in some circumstances the pit number was not imported. Now the pit number is imported correctly. The pit number is stored in the **pit\_num** attribute.

- **Whittle export - incorrect result for Indicator Kriged models**

Corrected a bug where exporting to an Indicator Kriged Whittle block model could incorrectly assign a grade to an undefined ore parcel.

- **3DM/DTM intersection functions not working**

Corrected a stability issue when intersecting a 3DM with an invalid DTM. If TRISOLATION 3DM/DTM BELOW or TRISOLATION 3DM/DTM ABOVE fail because of an invalid DTM, a meaningful error is displayed in the Message window.

- **Mixed case, upper case, and lower case values in the hole\_path field in the collar table**

In the drillhole database, in the **collar** table, the **hole\_path** field now supports mixed case, upper case, and lower case values. Previously, if **hole\_path** stored values other than lower case values, you could experience errors when using AUDIT DATABASE or other database functions.

- **EXTRACT DISCRETE SAMPLES returns oldest record when multiple records exist with the same sample id**

There are some situations in which the discrete sample table in the database might hold multiple records for the same sample id, for example in water bore monitoring or prism monitoring. Previously, when you ran the EXTRACT DISCRETE SAMPLES function, and there was more than one record with the same sample id, the *oldest* record could be returned. This could occur when using an OLEDB database driver. Now, the record with the most recent sample date is returned.

- **CENTRE LINE SLICE does not extract slices correctly**

Previously, the function CENTRE LINE SLICE produced incorrect slices when the slice plane was exactly on a block face. This problem has now been fixed.

- **Surpac crashes if an invalid Vulcan block model is loaded**

In Surpac 6.6, if you tried to load an invalid Vulcan block model, Surpac would crash rather than display an appropriate error message. Now an appropriate error message is displayed, and no crash occurs.

- **Surpac failed to connect to a password-protected Access database**

Previously, if you used DB MAPPER to connect to, and map, a password-protected Microsoft Access database, the connection failed and Surpac displayed the message "Cannot connect to database of type access". Now, Surpac successfully connects to a password-protected Access database.

- **VARIOGRAM VALIDATION autofill is not working for Nugget, Sill and Range**

Previously, when you used the VARIOGRAM VALIDATION (or BM FILL OK, BM FILL SK, BM IK MAKE CFF, DIRECT KRIGING, or GRID KRIGING) functions, and selected a **.vgm** file, the **Nugget**, **Sill**, and **Range** fields were filled with "0" values. Now, **Nugget**, **Sill**, and **Range** are correctly loaded into the fields of the form.

- **BM EXTRACT SECTIONS attribute output order is incorrect**

In Surpac 6.4 and later versions, BM EXTRACT SECTIONS (incorrectly) ordered attributes alphabetically instead of in the order in which you selected them in the *Sections from block model* form. Now, the attributes are exported in the order in which you selected them. Also, the attribute sort order defined with BM REORDER ATTRIBUTES is now used when you extract all attributes with BM EXTRACT SECTIONS.

- **Block model, multiple percent report errors**

Previously, BM VOL TON REPORT failed to read **.bmr** files correctly for some multiple percentage reports. Specifically, you can now set the number of decimal places for **Report volume and tonnes** successfully. Also, you can now set the **Specific Gravity** column to a value rather than an attribute, and successfully save and load the **.bmr** file.

- **Block Model Report function, formula not working**

This fix relates to the situation where you ran a block model report, and wanted to report on a calculated attribute but not to report the base attribute used in the calculation, for example to report on the (calculated) contained metal, but not grade. Previously, if you cleared the **Display** check box for the (base) attribute you wanted to hide in the report, the value of the base attribute was displayed in the report anyway, as well as the calculated attribute. Now, in that situation, the value of the base attribute is not displayed.

- **BM SAVE MODEL instability saving block model after reblocking**

Previously, when using 64-bit Surpac to reblock a model and save the model, in some circumstances Surpac would crash and display error 1000. Now, you can successfully save the reblocked block model (either in a macro or manually in Surpac), regardless of whether you are using Surpac 32-bit or 64-bit.

- **CLASSIFY STRINGS crashes Surpac when using a very long file path**

Previously, when you used CLASSIFY STRINGS with an output file that had a very long file path (approximately more than 256 characters), Surpac would crash. CLASSIFY STRINGS now successfully saves the result file even when there is a very long file path.

- **Simple Reblocking in Surpac 6.6 (32-bit) not working properly**

Simple reblocking now completes successfully.

- **Block model report creates an extra attribute called 0.000**

Corrected an issue in BM VOL TON REPORT where a .bmr file containing a value for its density attribute created a new attribute for which the name was the value of the density attribute.

- **BM EDIT CONSTRAINT crash on Datamine and free block models**

Fixed an issue where it was possible to run BM EDIT CONSTRAINT on an incompatible block model format (Datamine or free block model), which could cause a crash. It is not valid to enter a constraint for those formats of block model.

- **In variogram modelling, moving the lag slider while the variogram model and variogram map panes are unpinned in a variogram map causes crash**

Moving the lag slider while the variogram model and the variogram map panes are unpinned in a variogram map no longer causes a crash.

- **BM IJK CONSTRAIN crashes when constraint not cleared**

Previously, when you ran BM IJK CONSTRAIN twice with the **Clear constraints** check box not selected, Surpac could crash. Now, Surpac no longer crashes regardless of whether the **Clear constraints** check box is selected.

- **VG COMPOSITE DOWNHOLE no longer crashes when given incorrect geology zones**

Fixes a bug where VG COMPOSITE DOWNHOLE would crash when no data matching the given geology zones was found in the database. Now, a warning is displayed if a given zone is not found at all in the database. If the constraint or zones result in no data, a message is displayed that there are not enough samples to continue.

- **COLLAR SUMMARY crashes when constraint does not return any data**

Previously, when you ran COLLAR SUMMARY with a constraint that does not return any data (such as y=[no value]), Surpac could crash. Now, when none of the drillholes satisfy the given constraints, COLLAR SUMMARY shows a useful message and there is no crash.

- **Datamine block models - constraints not working correctly**

Previously, it was possible to incorrectly get the index of a super block in Datamine models using SciBlockModelIndexFromXYZ. This is incorrect behaviour and has now been fixed.

- **STRING OVER DTM does not produce a correct result**

Fixed an issue in STRING OVER DTM where a point that lies on the boundary string of the DTM could cause the function to produce an incorrect result. Now, the Message window displays an appropriate message when the selected string has triangles that are connected with the DTM.

- **DDB EDITOR function crashes when no survey table is present**

Corrected a potential crash when using DDB EDITOR to map a database that is missing the survey table.

- **TRISOLATION 3DM/DTM BELOW - Clipping solid below surface is not working as a graphical function**

Fixed an issue where graphically clipping a solid using TRISOLATION 3DM/DTM BELOW could produce incorrect results. The problem could occur when some of the trisolations were void instead of solid.

- **TRISOLATION SPLIT CONNECTED FILE function validation error**

Fixed several issues in TRISOLATION SPLIT CONNECTED FILE. Trisolation and Triobject fields are now filled correctly, and incorrect macros no longer cause stability issues.

- **SciBlockModelIterateNext - values retrieved from block models are incorrect**  
SciBlockModelIterateNext now no longer returns incorrect values out of block models.
- **Solids repair crash when language is Russian**  
Previously, if you used the Solids Repair Panel to repair a solid with Surpac set to the Russian language, and then you closed Surpac, reopened it, and performed the solids repair again, Surpac could crash or freeze. This has been fixed.
- **Block Model - SciBlockModelAddBlockToConstraint crashes when adding block indexes [Incorrect result][Crash]**  
Being Groomed
- **Corrected various issues when saving images from the Variogram window**  
Corrected several issues when saving images from the Variogram window (manually or using a macro). It is no longer possible to include a colon character in an image file name. Incorrect file paths no longer cause random placement of output files - errors are correctly reported instead.
- **BM VOL TON REPORT crashes when a density adjustment attribute is not selected**  
In the *Block model report* form, when **Density adjustment** was set to **attribute**, but no attribute was specified, Surpac would crash. This problem has been fixed, and an appropriate error message is now displayed when a density adjustment attribute is not selected.
- **Image in the title block does not appear when creating a drillhole graphical log**  
When using the function DB DRILLHOLE LOG, an image that was added in a title block would fail to appear when the drillhole graphical log was created. This problem has now been fixed.
- **Repetition of long descriptions in drillhole graphical logs**  
Long descriptions in the geology description field are no longer repeated several times when producing drillhole graphical logs.
- **Incorrect file path for a database in a workspace file**  
Previously, saving the workspace file (**.swa**) would record an incorrect path for a database that was loaded from a different drive. This problem has been fixed now. The workspace file records the correct path information regardless of the drive or the current work directory.

## Tools

- **Clipping and trimming do not work in section view**  
The following functions all now function *relative to the active plane*. The command name is in parentheses.
  - DELETE BY BOX (Trim by window box)
  - DELETE BY SEGMENT (Trim by selected segment)
  - DELETE BY TEMP SEGMENT (Trim by digitised segment)
  - CLIP BY BOX (Clip by window box)
  - CLIP BY SEGMENT (Clip by selected segment)
  - CLIP BY TEMP SEGMENT (Clip by digitised segment)
- **Drillholes positioned exactly on one of the section planes are not plotted**  
Previously, Surpac failed to plot drillholes that lay exactly on one of the section planes. This problem has now been fixed.
- **SHEET VIEW PORT CLOSE crashes Surpac if executed when Sheet entities window is not open**  
Fixed a crash triggered by calling SHEET VIEW PORT CLOSE when the sheet entities window is not open.
- **SciSetValueByName and SciGetValueByName do not work with triobjects and trisolations**  
Previously, the SCL commands SciSetValueByName and SciGetValueByName failed to work with triobjects and trisolations. This problem has now been fixed.

- **SUBDIVIDE STRING function is broken - does not subdivide by x, y, z**

SUBDIVIDE STRING now works correctly when **Distance type** is **X-axis**, **Y-axis**, or **Z-axis**.
- **PROCESS MAP has been modified to process an image entity differently**

The following changes have been done for processing an image entity:

  - The **Clashing** field is renamed to **Foreground**. When **Foreground** is selected, and you process a map that includes the image entity, the image appears on top of the other plotted objects, and underneath any title block. Data behind the image is not removed. When **Foreground** is not selected, the image appears underneath the other plotted data.
  - The **Priority** field is removed from the *Define image entity attributes* form.
- **GRAPHICALLY CLIP DTM not clipping correctly or forming DTM properly**

Previously, when using GRAPHICALLY CLIP DTM, and the boundary string was exactly on the trisolation boundary, the function did not always clip the DTM correctly. Now, when the start point of the clipping segment is exactly on the trisolation boundary, GRAPHICALLY CLIP DTM clips the DTM correctly.
- **2D PLANES MODE and 3D PLANES MODE unwanted change of view**

When in planes mode, switching between 2D and 3D no longer moves the camera position.
- **SAVE ALL LAYERS AS crashes when output is GEMS triangulation**

SAVE ALL LAYERS AS now works correctly when the output is GEMS triangulations.
- **SciBlockModelBlockIndexFromXYZ fails to get a valid index in many situations**

SciBlockModelBlockIndexFromXYZ no longer fails to get a valid block index in a block model.
- **Crash when calling EXPAND DTM on an invalid DTM**

Previously, when you ran EXPAND DTM on an invalid DTM, Surpac could crash and display error 5000. Now, EXPAND DTM successfully expands the invalid DTM. Regardless of the fix, it is a recommended step to validate an invalid DTM before doing any further processing on the DTM.
- **SECTIONS THROUGH LAYERS crashes in a macro**

Previously, if you ran SECTIONS THROUGH LAYERS with many sections in a macro, Surpac could run out of memory. Now, the memory management problem has been corrected, and SECTIONS THROUGH LAYERS completes the operation successfully.
- **GROUP PLOT SELECTION causes error 5000**

Fixed a crash triggered by calling GROUP PLOT SELECTION from the main Surpac window. You can now run GROUP PLOT SELECTION successfully.
- **TRIANGULATIONS AS POLYLINES does not render the triangle intercept line correctly**

Previously, the polylines (on some planes) which represented the intercept line generated by the TRIANGULATIONS AS POLYLINES function, appeared as broken lines. This problem has been fixed and the polylines no longer appear broken.
- **Crash when running TCL script to plotting sections when plotting entity does not exist**

In Surpac 6.6, when you ran a TCL macro for plotting, and a plotting entity used by the macro did not exist, Surpac could crash. In Surpac 6.3.2, the macro did not crash. In Surpac 6.6.2, Surpac does not crash in that situation, but displays an appropriate error message.
- **Markers may not be correctly drawn when multiple strings are displayed in the same layer**

Markers are now correctly displayed when multiple strings are displayed in the same layer.
- **Surpac crashes when an entity referenced in a map does not exist while processing the map**

Corrected a stability issue when processing a map that was missing entities.

- **No help available for Plot sheet sizes form**

The *Plot sheet sizes* form is now linked with an appropriate help page.

- **Corrected various SCL memory leaks**

Found and fixed various memory leaks triggered by SciDestroy.

- **Input delay when running cut and between DTMs**

DTM CUT AND FILL VOLUMES no longer reads DTM files automatically when you have chosen a DTM in the Location field or fields. Instead you can click Refresh to fill the Location field or type a value manually. This change prevents unwanted delays when using this function, especially with large DTMs.

- **Unable to load the symbols from block references inserted in a DWG file**

Previously, the software was unable to load the dip and direction symbols from block references inserted in a DWG file. This has been fixed now.

- **In data-centric mode, a selected triangle is not highlighted if graphics driver is DX9 or OpenGL2**

Previously, the triangle was not highlighted when you selected it in data-centric mode and the graphics driver was either DX9 or OpenGL2. This problem has been fixed now.

- **DTM input delay for various functions**

If you loaded some large DTMs, Surpac could take a long time to fill the **Object ID** and **Trisolation ID** boxes while validating the DTMs. Now, the following functions no longer automatically read DTM files when you have chosen one in the location field or fields:

DTM VOLUMES  
INTERSECT DTMS  
SECTION DTM  
DTM CLIP  
BM VOL TON REPORT  
DRILL HOLE INTERSECT DTM  
EXPAND DTM  
STRINGS OVER DTM

You can click the new **Refresh** button to fill the **Object ID** and **Trisolation ID** combo boxes, or enter these values manually.

This modification prevents unwanted delays when using these functions, especially with large DTMs.

- **New SCL command SciDestroyHandle**

Added a new SCL command SciDestroyHandle. The purpose of this command is to destroy a handle to a Surpac object, while not destroying the underlying data. An example of this is destroying a point handle, without destroying the actual point in the segment in which it was created.

- **String draping functions fail to drape strings over a DTM**

Various string draping functions (SEGMENT OVER DTM, STRING OVER DTM, STRINGS OVER DTM and STRING RANGE OVER DTM) now no longer display the spurious error message "Warning: No intersection with triangle" and they complete successfully.

## Applications

- **AUD can now load DTMs**

Fixes a problem where Advanced Underground Design (AUD) did not show the button for selecting a DTM. The button is now displayed and you can use it to load a DTM from Surpac to AUD.

## Configuration

- **FORM PREVIEW with form 00226 causes Surpac to crash**

Fixed a crash triggered by running FORM PREVIEW on form 00226 - the *Plot presentation parameters* form.

- **String styles does not accept the 'polygon' drawing method**

Previously, in the STYLES STRING function or the STRING PROPERTIES function, if you selected the **polygon** drawing method for a string range, and applied the form, Surpac displayed the message: "Validation of field method(x) failed". Now, you can successfully apply the **polygon** drawing method.

- **Context-menu method of promoting or demoting the selection of triangles not working**

Previously, the context-menu method of promoting or demoting the selection of triangles was not working correctly. This has now been fixed.

- **Surpac limited to 4GB file size**

Surpac is now able to open and process files greater than 4GB in size.

## Miscellaneous

- **Graphical display optimization**

Interactive display of large numbers of segments, trisolations, and drillholes is now significantly faster than it was previously. In **Default preferences**, under **Graphics > Hardware settings**, you must select the **Display lists** setting to take full advantage of this optimization.

- **Faster transparency**

In **Default preferences**, under **Graphics > Display options**, the default **Transparency method** (which is **Performance**) has been changed to use a technique called depth peeling. The depth peeling method renders a transparent object in passes that 'peel away' transparent layers to show the objects underneath. You can specify the number of peeling layers using the **Depth layers** setting. For each layer, Surpac uses one layer of transparency. You can enable the legacy method of transparency by setting **Transparency method** to **Quality**. Using the **Quality** setting, all the triangles are sorted from back to front before updating the canvas, which requires significant memory and time in all but the simplest scenes.

## Documentation Changes

### Configuration

- **Block model**

Added help topic with diagrams for **Mine blocks graphically** command.  
For **Validate for Export to Whittle**, added diagram, plus a better overview, explanation of the previously-unexplained fields, and an Output paragraph.

- **Customise topics**

In **Default preferences** topic, explained **Transparency method** and **Depth layers** settings which can greatly boost graphical performance when you are displaying many transparent objects.  
**Upgrade from old installation**. Added help to explain which customised files are copied from the older version of Surpac to the new version.  
Added help topic to explain the three possible choices in the **Window appearance** submenu.

- **Surfaces**

For **DTM cut and fill volumes**, added diagram and words to better explain cut and fill.  
Added help for **Convert grid surface to DTM** which converts Minex grids to DTMs.

- **SCL**

Added help for the new **SciBlockModelGetValues** command that gets the values of block model attributes.  
Added help for the new **SciDestroyHandle** command which releases memory used by handles. This command is likely to be most useful for scripts that involve manipulating many points or objects, when the script fails or runs slowly because it runs out of memory.  
For **SciSystemOption**, added note stating the extra line that you need to add to a script to commit an **SciSystemOption** change that relates to Graphics.

- **Plotting**

Added help to explain image entities and the new **Foreground** option. Also added a task to the Plotting tutorial: **Creating a plot showing an image of a legend**.

**Copy title block**. Explained the fields for placement of the title block, for the size of the protected area, and other fields that lacked help.

Added help for **Create entity legend**.

Reorganised the help for the **Plotting Sheet Setup Window** commands so they are all in the table of contents.

**Plot draw area**. Added diagram to explain where the draw area is in relation to the border.

- **Other**

Edited the help for the numerous **String maths** functions for technical correctness, ease of finding, and ease of maintaining.

Made it so there are hyperlinks on the breadcrumbs at the top of the help topics so you can navigate around the table of contents. Created mini tables of contents where needed to enable this.

- **Geological database and compositing**

Reorganised and edited the **Geological database** help topic. Removed outdated information, explained styles table, highlighted importance of AUDIT DATABASE, clarified naming restrictions and memo field limitations.

Added help for **Label tickmarks selectable** and **Geology patterns selectable**, and added more detail and a diagram to **Drillhole traces selectable**.

Added **Database format and compatibility** concept topic explaining the database compatibility issues with Access.

In **Composite downhole** topic, explained **Determine composite length by: best fit**, and added Downhole Compositing Example #3 plus image as an example of it.

Made substantial changes to the help topic for the **Graphical drillhole log** function including adding an example with an image, and stating how you can control the colour of lines and bar graphs.

- **Drill and blast**

Added help for 18 commands on the **Database** submenu. Added help for 7 **Edit** commands. Added help for 9 **Display** commands. Added help for 8 **Sections** commands.

Added help for **Delete single hole**.