DATAMINE

Dedicated Mine Surveying Package

STUDIO SURVEY

Release Notes

Studio Survey 2.2

Contents

Overview

Studio Survey is a software solution exclusively designed for the needs of Mine Surveyors. It is not a module inside a complex product but is a dedicated mine surveying product that simplifies and streamlines the processing of everyday survey tasks in mining operations of any commodity with the use of dedicated and automated reporting functionality.

Studio Survey is one of several products in the Studio product family, which includes:

Studio EM for exploration data analysis and modeling.

Studio Geo for structural modeling.

Studio Mapper for geological face mapping and reporting.

Studio NPVS for strategic open pit optimization, design and scheduling.

Studio OP for open pit design and operational scheduling.

Studio PM for very short term open pit operational planning.

Studio RM for mine geology, reserve modeling and resource estimation.

Studio Survey for open pit and underground mine surveying and reporting.

Studio UG for underground mine design and scheduling.

Further Information

Release notes for other versions of Studio Survey are available via the Support Portal
https://www.dataminesoftware.com/support/.

For the complete Studio Survey documentation, see
https://docs.dataminesoftware.com/StudioSurvey.

Studio Survey 2.2 Release Notes

Key Improvements

Drive Compliance Report
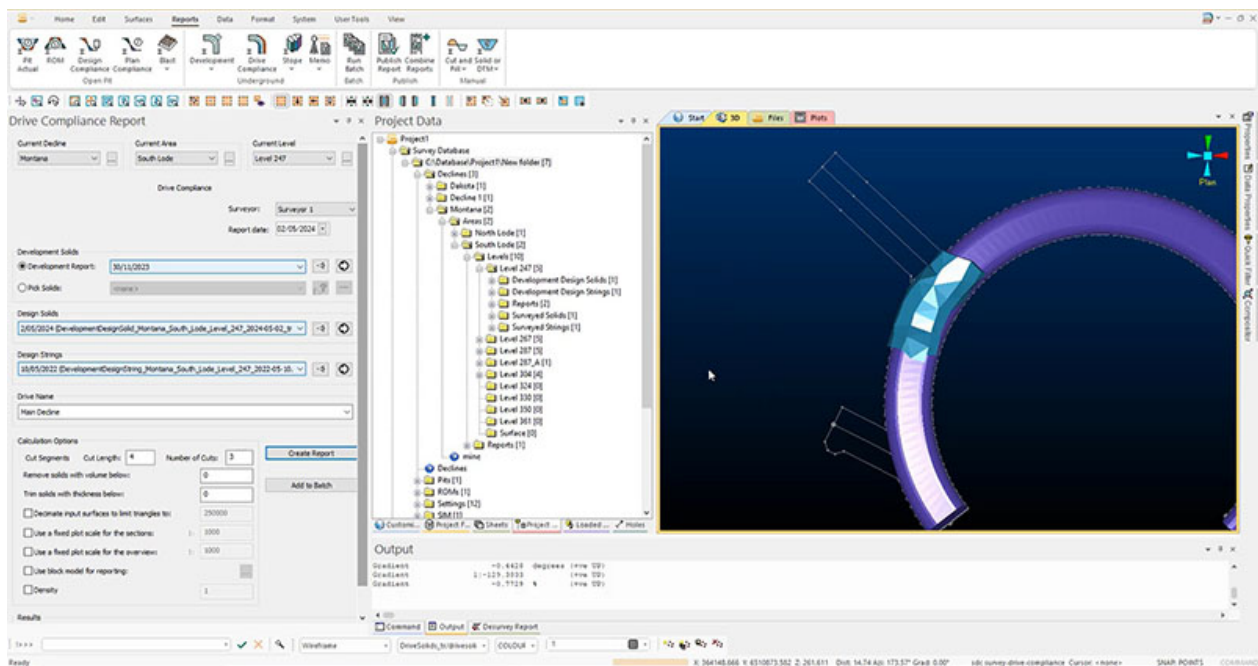
Report volume and drive profile area discrepancies for development extraction using a new Drive Compliance report type.

In addition to the overall overbreak and underbreak volume report (surveyed solids versus designed model), you can set up one or more drive cuts to provide more granular reporting of drive profile area variance at a particular point along the drive centreline. Per-profile overbreak and underbreak results deliver a more detailed analysis of the monthly development activities.

Plan Compliance Report - Constrain by Design Surface

You can now define a constraining design surface when producing an EOM Plan Compliance report. This can avoid reporting volumes mined outside the design as being ahead of schedule.

If a **Design Pit Surface** is specified, and your reporting template is configured to report it, you can report 'mined-not-planned-not-designed' volumes separately (and most importantly, not include these volumes in other categories):
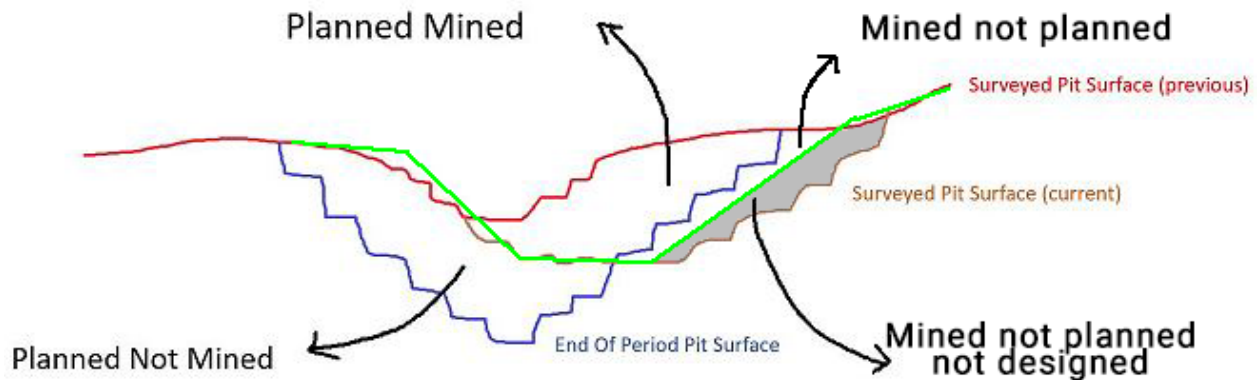
EOM Evaluations

You can now specify a block model in the EOM reporting tasks to allow evaluation results to be generated and included in published output. This includes the following report types:

- **Pit Actual.**
- **Compliance to Design.**
- **Blast Volume Calculator.**
- **Development Report.**
- **Stope Report**

This makes it easy to publish evaluated volumes, tonnages and grades against a block model, in relation to extracted volumes, or alternatively, you can define a default density.

(It's available with the new **UG Drive Compliance** report too)

New Report - Memo Register

Create a summary of all Memo Reports that match specific criteria (decline, area, level, date range) or pick any selection of reports from those available on the active database. The **Memo Register** report is preformatted using an Excel template defined on the Database Settings screen.

Generate Drive Solid - Fragment Removal

Automatically remove data fragments that fall below a particular threshold volume when generating a drive solid from survey string data. You can also (independently) choose to trim data where the thickness of the generated data falls below a specified 2D distance. Drive solid generation then takes these values into account in order to produce more practical results for volume reporting and EOM development reporting.

The **Drive Solid** command now also reports the calculated volume(s) of generated solid(s) and, if any errors occurred during data generation, the drive in question is highlighted in a separate report.

Generate Drive Outline

You can now generate development drive solids in a single click with a new **Home** ribbon command ("**Drive Outline**"). This launches a new command; **survey-drive-outline-from-solid**.

Report Improvements

- PC and account details are now added to output EOM reports automatically to enhance auditability.

- You can now add **custom comments** to any of the memo reports (variables offsets, constant offset or paint lines).

- An optional surveyed pit surface can now be added to the **blast volume report** as a useful visual context.

- You can now constrain EOM Pit and compliance reports to a specific bench range.

- We've updated and improved the **Stope Reconciliation Report** default template in this update.

- You can now define custom fields for stockpile boundary reports.

PixPro Update

Studio Survey 2.2 has been updated to install Datamine PixPro version 1.7.6. For more information on this PixPro version, please refer to your PixPro 1.7.6 release notes.

Custom Coordinate Transformations

Define custom coordinate transformations using the **transform-coordinates** command.

Define one or more control points in 3D space and automatically calculate the transformation between source and target systems. The resulting transformation matrix can be saved and shared with others.

Generate a 2D Grid
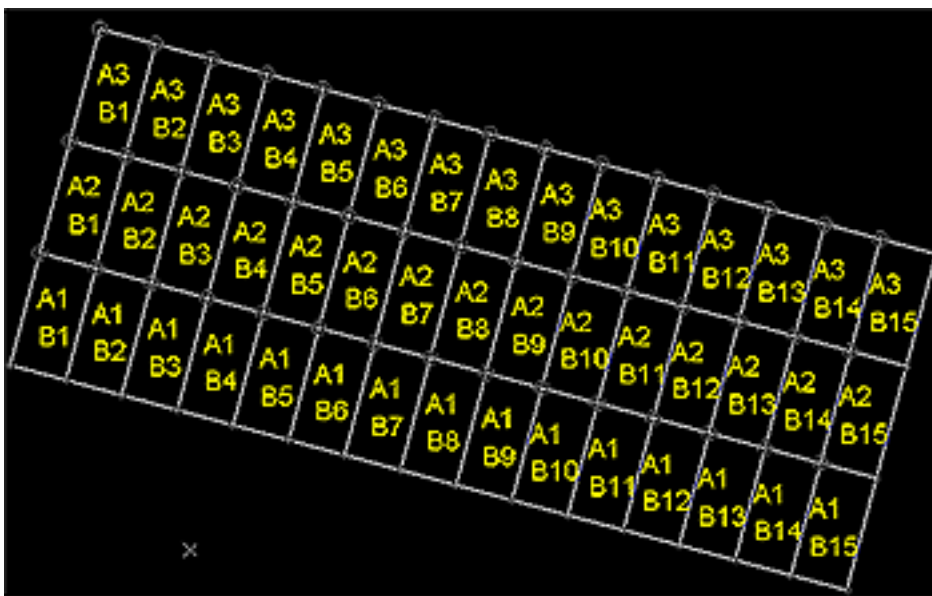
Use **create-grid-perimeter** to generate a 2D grid anywhere in 3D space, with optional grid reference attribution.

Define any origin and azimuth, and design a grid on a 2D plane of any orientation. Each grid cell can be attributed automatically to quickly set up grid reference attributes.

Attributes by Selection Order

It can be useful to define a series of numeric attributes in increasing order along a particular path. For example, assigning a stope index to wireframe volumes along the direction of development, assigning a blasthole row ID throughout a blast pattern and so on. A sequential index can also be useful to create spatial indices that can be used for dependency creation, control / guide schedule sequencing, mapping different areas of the reserve or mine and many other uses.

An excellent new command - **assign-attributes-by-selection-order** lets you do just that; attribute loaded wireframe, drillhole or string data based on the order you select data in a 3D window or how loaded data interacts with a projected string.

Custom Highlight Colour
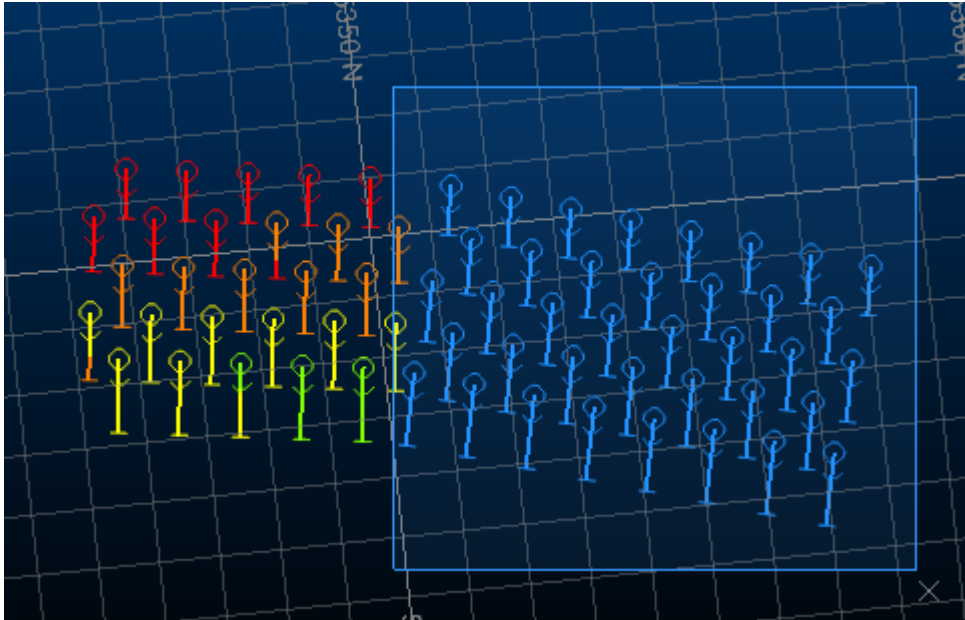
Change the 3D window selection colour to whatever you like, using the new **Options >> 3D >> General >> Selection** options.

Rotate and Scale Downhole Column Images

If displaying downhole column images, you can now scale and rotate image data in both 3D and Log views. You can even set per-image rotations by appending this information within the image database.

Drillholes as Points

A new option has been added to the 3D Drillhole Properties screen to allow drillhole samples to be rendered as points. Choose the position of the symbol and set its style, including 2D and 3D options.

Import & Export Deswik Data

You can now import data in Deswik® unified format data (points, strings or wireframes) using a new data driver, accessible using the various file load and import routines available on the **Data** ribbon. It's a two-way driver, so you can also export loaded data as either points, strings or wireframes in the same .duf format.

Legends Manager Overhaul
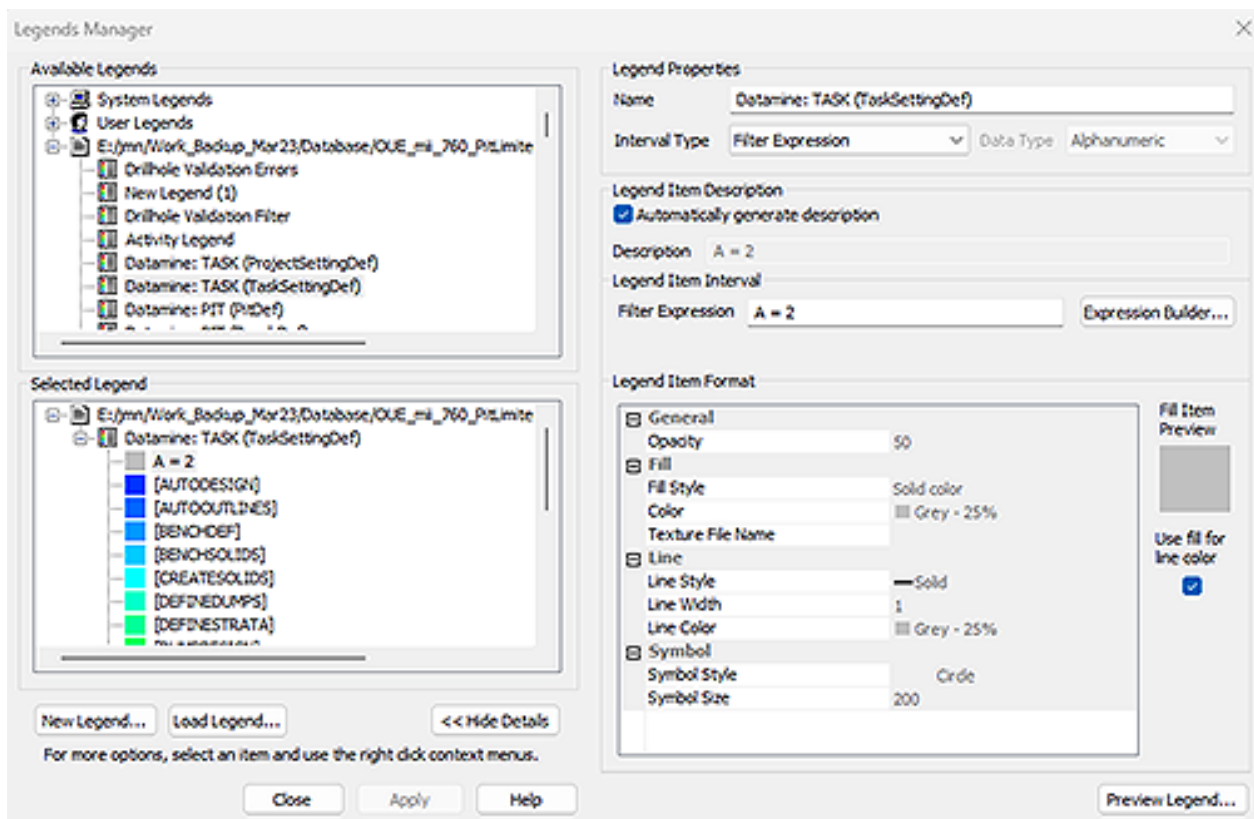
The **Legends Manager** has been overhauled to make it easier to use; Legends and intervals are now in separate lists. This also allows larger legends to be created.

New Wireframe Triangles with 1 Click

Creating new wireframe triangles is now much quicker with an optional 1-click approach for data with shared edges. Digitize the first triangle and, optionally, click another point to generate a new triangle formed from that point and the two previously-digitized points. This makes build up a chain or patch of interconnected triangles much quicker.

New and improved commands

- A new command - **add-zintersect-to-string** - lets you inject string points at a specified elevation.

- The **BOOLEAN** process now supports a @USENORM parameter to determine if wireframe triangle normals are used to determine the inside/outside of input data.

- A new command - **clip-strings-to-perimeters** - lets you clip any string data with one or more selected perimeters.

- **extend-string-to-string** can now be used to extend any string segment.

- **extend-segment-virtual-intersect**: Extend a string segment to virtually intersect a second segment of another selected string (new command).

- **fillet-single-string-point** can now be performed on strings not in the XY plane.

- **filter-point-off**: Prevent the display of point data without removing it from memory.

- **hide-non-selected-points**: Disable the display of all non-selected point data.

- Several string **linking** commands now honour the 'Maximum Segment Length' value (if greater than 0) to limit the segment length of wireframes triangles.

- **Macro path lengths** can now be up to 256 characters (the previous limit was 72 characters).

- **move-string-to-view** projects string data without retaining the original data.

- You can now **restore** previously used **retrieval criteria**.

- A new command - **simplify-string** - provides an alternative string conditioning approach to condition-string.

- **switch-wireframe-edge**: interactively swap the arrangement of internal edges in a two-triangle pair.

- The maximum number of unique values for the ZONE field in **TRIVAL** has increased from 40 to 2000. The amount of text being written to the command text output window has been significantly reduced and a better progress indicator added to the status bar.

- **write-selected-points**: Save selected points to an external file.

Enhanced License Tracking

License Manager's user logging facility has been extended to include the status of all licenses on the target system (locked, unlocked, checked in or checked out) at the start of each logging session. Previously, only licensing events were recorded. This means you can now view the starting snapshot of all licenses on the server before logging continues.

Plotting Enhancements

We continue the campaign to update our plot reporting options in this update:

- You can now use **Quick Filter** and Format ribbon filtering options whilst using the **Plots** window.
- Use the "za" quick key combination to automatically zoom the contents of a target projection to fit the available space.
- Navigate active projections or plot sheets by zooming in or out using the mouse wheel, similar to the 3D window behaviour.
- Use the "zx" quick key combination in a Plots projection to activate zoom-by-area mode.
- Deselect any active projection using <CTRL> and a left click.

Thre are lots more updates to come from this ongoing project.

Enhanced License Tracking

License Manager's user logging facility has been extended to include the status of all licenses on the target system (locked, unlocked, checked in or checked out) at the start of each logging session. Previously, only licensing events were recorded. This means you can now view the starting snapshot of all licenses on the server before logging continues.

All Improvements

Commands & Processes

- **Case: SURV-496** Reporting PC and account details are now added to output EOM reports automatically to enhance auditability.

- **Case: SURV-464** You can now specify a default density to use for EOM report evaluation results if a block model isn't available (or relevant).

- **Case: SURV-497** A check is now made to ensure a Blast Volume report template is compatible with the current software version, reporting a mismatch.

- **Case: SURV-461** You can now restrict EOM Pit and compliance reports to a specified bench range.

- **Case: SURV-460** You can now generate development drive solids in a single click with a new Home ribbon command (**"Drive Outline"**).

- **Case: SURV-456** You can now add **custom comments** to any of the memo reports (variables offsets, constant offset or paint lines).

- **Case: SURV-453** Create a summary of all Memo Reports that match specific criteria (decline, area, level, date range) using a new **Memo Register** report type.

- **Case: SURV-452** Display volume information and automatically remove data fragments that fall below a particular threshold volume or thickness when generating a drive solid from survey string data.

- **Case: SURV-442** We've updated and improved the **Stope Reconciliation Report** default template in this update.

- **Case: SURV-430** Many EOM reports now provide an option to calculate and display model evaluation results.

- **Case: SURV-415** You can now define custom fields for stockpile boundary reports.

- **Case: SURV-410** An optional surveyed pit surface can now be added to the **blast volume report** as a useful visual context.

- **Case: SURV-274** You can now define a constraining design surface when producing an **EOM Plan Compliance** report.

- **Case: CORE-8411** When saving objects, files are no longer unnecessarily converted to lower case, invalid characters and spaces are now replaced with underscores.

- **Case: CORE-8321**An issue causing the capping surface of a block model cell to be displayed, even when clipping is disabled, has been resolved.
- **Case: CORE-8319** An issue causing clipped block model cells to render incorrectly has been resolved.
- **Case: CORE-8226** Changing section positions with the move-plane-forward and move-plane-backward commands is now quicker.
- **Case: CORE-7936** A new command - **switch-drillhole-points-traces** - toggles between pixel line and points drillhole rendering modes.
- **Case: CORE-7931** Drillholes can now be rendered as points.
- **Case: CORE-7925** When exporting vector data, each overlay now contributes to a unique CAD layer.
- **Case: CORE-7924** The **BOOLEAN** process now supports a @USENORM parameter to determine if wireframe triangle normals are used to determine the inside/outside of input data.
- **Case: CORE-7801** end-link-selected-strings is now supported by the Maximum Segment Length project setting.
- **Case: CORE-7792** Link-strings now honours the Maximum Segment Length wireframe linking setting.
- **Case: CORE-7855** The performance of commands that involve moving points has been improved when a lot of visual data is loaded and displayed in a 3D window.
- **Case: CORE-7844** **DAELLIPS** can now input rotated models, and **ANISOANG** has been updated to provide expected angular **POINTS** output (plus an optional **REJECTED** output points file). See your process documentation for more details.
- **Case: CORE-7804** The command link-multiple-strings ("lms") now uses the 'Maximum Segment Length' value (if greater than 0) to limit the segment length of wireframes triangles.
- **Case: CORE-7803** The command link-selected-strings-attrib ("lma") now uses the 'Maximum Segment Length' value (if greater than 0) to limit the segment length of wireframes triangles.
- **Case: CORE-7802** The command link-selected-strings-plane ("lmpl") now uses the 'Maximum Segment Length' value (if greater than 0) to limit the segment length of wireframes triangles.
- **Case: CORE-7800**The command end-link-boundary (elb) now uses the 'Maximum Segment Length' value (if greater than 0) to limit the segment length of wireframes triangles.

- **Case: CORE-7799** The command end-link (eli) now uses the 'Maximum Segment Length' value (if greater than 0) to limit the segment length of wireframes triangles.
- **Case: CORE-7780** You can now pan plot views using the cursor as expected.
- **Case: CORE-7778** A new command - **write-selected-points** - lets you save selected points to an external file.
- **Case: CORE-7733** User feedback when setting up default grid templates has been improved.
- **Case: CORE-7689** When importing a Minescape Prism model, multiple layers can be selected, and you can also create a SEAM column during import.
- **Case: CORE-7671** The auto alignment option when defining a new 3D section now also applies to Vertical and Perpendicular section types.
- **Case: CORE-7670** **Macro path lengths** can now be up to 256 characters (the previous limit was 72 characters).
- **Case: CORE-7644** Use the "za" quick key combination to automatically zoom the contents of a target projection to fit the available space.
- **Case: CORE-7643** Use the "zx" quick key combination in a Plots projection to activate zoom-by-area mode.
- **Case: CORE-7641** You can now use **Quick Filter** and Format ribbon filtering options whilst using the **Plots** window.
- **Case: CORE-7612** During point cloud reconstruction, you are now prompted to save recent changes when closing the command.
- **Case: CORE-7611** Point reconstruction scenarios are now automatically enabled after creation.
- **Case: CORE-7592** Deselect any active projection using <CTRL> and a left click.
- **Case: CORE-7588** You can now define custom coordinate transformations using the transform-coordinates command.
- **Case: CORE-7558** You can now automatically align the view when swapping between preset section orientations (N-S, E-W etc.).
- **Case: CORE-7557** Optionally, orient the 3D view direction after defining a one-point section.
- **Case: CORE-7398** **move-string-to-view** projects string data without retaining the original data.
- **Case: CORE-7397** **extend-string-to-string** can now be used to extend any string segment.

- **Case: CORE-7396 extend-segment-virtual-intersect**: Extend a string segment to virtually intersect a second segment of another selected string.
- **Case: CORE-7395** A new command - **add-zintersect-to-string** - lets you inject string points at a specified elevation.
- **Case: CORE-7361** An issue causing incorrect icons to be displayed for Data options in the Loaded Data/Sheets context menu has been resolved.
- **Case: CORE-7310** The **Legends Manager** has been overhauled to make it easier to use.
- **Case: CORE-7266** A new command - **simplify-string** - provides an alternative string conditioning approach to condition-string.
- **Case: CORE-7152** A new command - **clip-strings-to-perimeters** - lets you clip any string data with one or more selected perimeters.
- **Case: CORE-6988** The Create Ramp String command no longer creates an unexpected additional segment when the gradient is greater than 0..
- **Case: CORE-6934** You can now **restore** previously used **retrieval criteria**.
- **Case: CORE-6827** An issue causing a DGN mesh to import has been resolved.
- **Case: CORE-6813** You can now define a segment length below 1 when using the **create-ramp-string** command.
- **Case: CORE-6705** When clipping perimeters to other perimeters, interacting with the Quick Filter bar now persists the previous selection.
- **Case: CORE-6536** Probability plots can now be displayed as either lines or points.
- **Case: CORE-6389** A new command - **assign-attributes-by-selection-order** - lets you attribute string, drillhole or wireframe data based on data selection or string direction order.
- **Case: CORE-6388** Use **create-grid-perimeter** to generate a 2D grid anywhere in 3D space, with optional grid reference attribution.
- **Case: CORE-5683** Downhole images can now be in any industry-standard image format.
- **Case: CORE-5284 filter-point-off** and **show-non-selected-points** commands have been created.
- **Case: CORE-4438 fillet-single-string-point** can now be performed on strings not in the XY plane.
- **Case: CORE-4144** Change the 3D window selection colour to whatever you like, using the new **Options >> 3D >> General >> Selection** options.

- **Case: CORE-3974** Define an upper limit for **triangle edge length** during string linking via the Project Settings screen. This can also be set using the reinstated **dtm-new-point-separation** command.
- **Case: CORE-3957** A new command - **switch-wireframe-edge**, lets you quickly adjust the internal organization of wireframe triangles in a quadrilateral.
- **Case: CORE-2849** You can now control the scale and rotation of downhole images in 3D and Log views.

User Experience

- **Case: SURV-524** The **Surface Road** generator tool is now available on the Home ribbon.
- **Case: SURV-499** Your Start page will update to reflect the colours of the current Look and Feel mode.
- **Case: SURV-499** You can now access the **Create Drive** command via the **Home** ribbon (**Create >> Drive Solid >> From Centerline**).
- **Case: CORE-8108** Redundant drive linking settings have been removed from the **Project Settings** screen.
- **Case: CORE-8060** **write-selected-points** has been added to the 3D window context menu (Save >> Selected Points).
- **Case: CORE-8008** The default Customization window watermark logo has been updated.
- **Case: CORE-7944** Options for managing loaded ellipsoid data have been added to the Data ribbon menus.
- **Case: CORE-7865** Screen text has been added to suggest using <CTRL> when using the assign-attributes-by-selection-order command.
- **Case: CORE-7702** An issue causing the degrees symbol to be displayed incorrectly in various parts of the application has been resolved.
- **Case: CORE-7658** The **Find Command** dialog now reacts to visual theme changes.
- **Case: CORE-7574**The **Wireframe Decimate** screen now displays the latest visual themes.
- **Case: CORE-7568** The **Wireframe Verify** screen now displays the latest visual themes.
- **Case: CORE-7534** The **Wireframe Smooth** screen is now supported by extended visual themes.

- **Case: CORE-5851** Installer graphics have been updated following corporate rebranding.

Utilities & Supporting Services

- **Case: SURV-536** Studio Survey 2.2 installs Datamine PixPro version 1.7.6.
- **Case: CORE-8328** When importing MineScape Stratmodel data, you can now choose if overlapping seam data is consolidated or left overlapping.
- **Case: CORE-8233** User logging in **License Manager** now records the status of all licenses on the host system at the start of data recording.
- **Case: CORE-8051** Datamine License Services is now supported in networks utilizing the TLS (Transport Layer Security) protocol versions 1.2 and 1.3.
- **Case: CORE-7937** A MineScape Block Model Generator utility can be accessed with a new minescape-to-blockmodel command.
- **Case: CORE-7662** Swapping from online to offline mode (or vice versa) now automatically reloads the current Start page content.
- **Case: CORE-4876** You can now load and import data in Deswik Unified Format (.duf). The new driver option appears on the Data Import screen, accessed via the **Data** ribbon.

Automation

- **Case: CORE-8292** The Studio Script Helper's **varsave()** method now produces a file that interacts with VARLOAD as expected.
- **Case:CORE-7782** The Grid DTMs command is now scriptable.

Documentation & eLearning

- **Case: CORE-7840** Documentation on macro limits has been updated.
- **Case: CORE-3574** More examples have been added to the EXTRA help file.

Defect Fixes

- **Case: CORE-8404** An issue causing system instability when cutting multiple file references to the clipboard via Project Files, has been resolved.

- **Case: CORE-8201** Reload All now reloads all data types as expected.

- **Case: CORE-8184** An issue preventing Edit Attributes from working correctly with alphanumeric fields has been resolved.

- **Case: CORE-8153** The User License Logging template spreadsheet has been updated to meeting Windows 11 requirements.

- **Case: CORE-8068** Unexpected parameters have been removed from the wireframe-section and wireframe-plane-project command interfaces.

- **Case: CORE-8042** If BHID values were numeric and larger than seven significant figures DESURV could fail. This is now resolved.

- **Case: CORE-8041** A data-specific issue causing HOLES3D to process indefinitely has been resolved.

- **Case: CORE-7989** DXF import now imports frozen layers by default, and an issue causing duplicate points has been resolved.

- **Case: SURV-479** An issue causing a volume discrepancy between EOM ROM and equivalent cut/fill routines, where a stockpile boundary is coincident with an input surface, has been resolved.

- **Case: SURV-439** An issue causing system failure during a development report run whilst using the split string tool has been resolved.

- **Case: CORE-7998** An issue causing system shutdown when creating a legend for a recently modified drillhole has been resolved.

- **Case: CORE-7982** Transform Coordinates no longer creates empty output if the input is in single-precision format.

- **Case: CORE-7970** New Legend bins now have correctly assigned values when the distribution is logarithmic.

- **Case: CORE-7949** An error in the write-all-strings help file has been corrected.

- **Case: CORE-7891** An issue preventing the full import of AutoCAD data has been resolved.

- **Case: CORE-7837** An issue causing processes to fail, if long path names were used in conjunction with !LOCDBOFF, has been resolved.

- **Case: CORE-7788** An issue causing potential system instability when sorting by Date Modified in the Project Browser has been resolved.

- **Case: CORE-7723** You can now update the License Services product name registration database more than once.
- **Case: CORE-7722** In some circumstances in models with a large number of fields including alphanumeric fields, **PROMOD** volume calculations were incorrect. This is now resolved.
- **Case: CORE-7666** Pasting text into the Command toolbar no longer duplicates the clipboard contents.
- **Case: CORE-7618** Selecting and deselecting individual drillholes or segments is now significantly faster.
- **Case: CORE-7530** An issue causing an unexpected system restart after a product installation has been resolved.
- **Case: CORE-7441** An issue causing a Micromine block model to fail to load has been resolved.
- **Case: CORE-7248** An issue causing unexpected value distributions in histogram and log histogram data when customizing the X axis has been resolved.
- **Case: CORE-6886** A consistent **Enter Translation Distance** screen is displayed when translating point, string or wireframe data.
- **Case: CORE-6872** When using **SELPER**, If the perimeter file contains DPLUS and DMINUS fields and the values are zero a small tolerance is applied internally to avoid numerical comparison errors. This is now consistent with the methodology used for the DPLUS and DMINUS parameter values when either of them is zero.
- **Case: CORE-6375** When exporting plot data in vector format, grid data is now exported correctly.
- **Case: CORE-5654** An issue causing a Microstation DGN wireframe to import has been resolved.
- **Case: CORE-3966** Exporting Faces and polylines via the CAD driver no longer export unwanted point data.

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