

A Tailored Solution for Geology and Exploration Professionals

STUDIO EM



**Release
Notes**

Studio EM 3.2

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The product described in this documentation may be connected to, and/or communicate information and data via, a network interface, which should be connected to a secure network. It is your sole responsibility to ensure a secure connection to the network and to establish and maintain appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of antivirus programs, etc.) to protect the product, the network, your systems, and the interface against any kind of security breach, unauthorised access, interference, intrusion, leakage, damage, or corruption or theft of data. We are not liable for damages or losses related to any such security breach, unauthorised access, interference, intrusion, leakage, damage, or corruption or theft of data.

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Overview



A tailored solution for geology and exploration professionals, **Studio EM** leverages the technology of Datamine's hugely successful Studio software series, making it highly compatible with many other software packages. Studio EM is the perfect geological analysis solution for increasing productivity and on-site efficiencies.

Studio EM 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 NPVS+** for strategic open pit optimization, design and enhanced 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 EM are available via the Datamine Customer Support website. For more details, see

<https://www.dataminesoftware.com/support/>.

For the complete Studio EM documentation, see

<https://docs.dataminesoftware.com/StudioEM>.

Studio EM 3.2 Release Notes

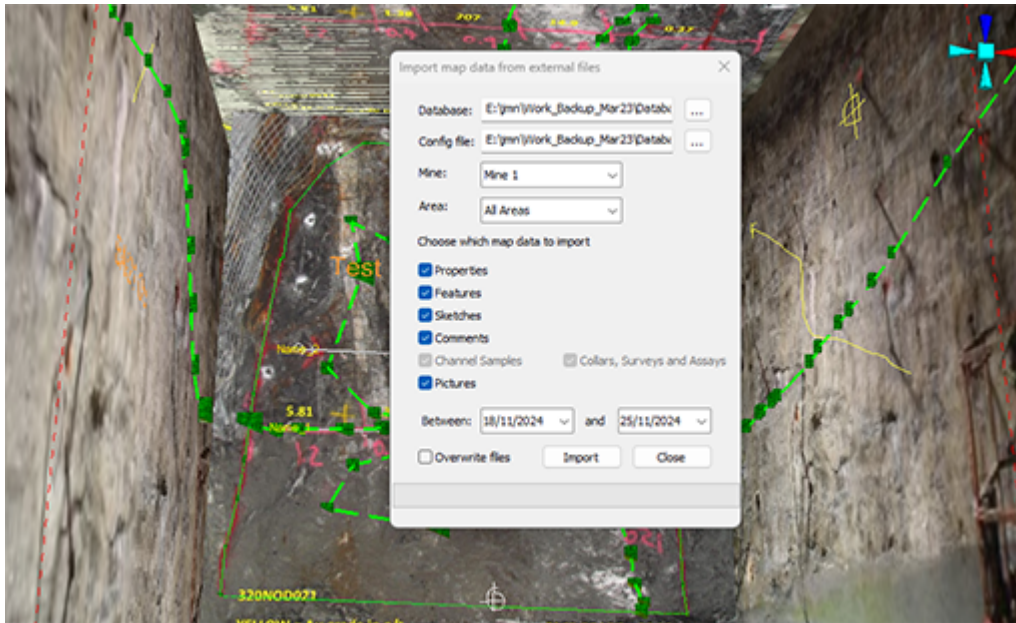
Key Improvements

Drillhole Importer Improvements

This update introduces the following improvements to Datamine's seminal drillhole importation tool:

- Automatically validate the adherence of collar positions to a specified surface topography file, reporting errors above a specified distance threshold.
- Re-import all drillhole component tables to absorb the latest source file changes using a new **Re-import** button on the **Import** tab.
- Automatically generate and choose the display legend for drillholes created with Drillhole Importer.
- Right-click a file in the Drillhole Importer to see a preview of the data table in the Tables window in your application.
- Use existing loaded drillhole component data to build or rebuild drillholes using the Drillhole Importer.
- **Reapply Previous Fixes:** Previously committed drillhole data fixes can now be reapplied automatically when revalidating as part of the Drillhole Importer process, saving time when new sample data comes to light.
- Drillhole Importer has new 'quick fix' options to handle misaligned collar EOH and interval length values.
- Drillhole Importer now automatically detects Leapfrog system field names, saving time when setting up an import scenario.
- Keyboard navigations shortcuts (SHIFT+Tab, SHIFT+Enter) have been added to Drillhole Importer table grids.
- Include or exclude multiple fields at once using new context menu options.
- You can now apply a quick fix to multiple selected validation results.
- Delete custom Drillhole Importer data sources using the data sources list.
- Drillhole Importer now imports data as a background task after launching and, if a data source is missing, this is highlighted.

Import from Studio Mapper



Studio Mapper and **Studio EM** are now more tightly integrated with a new Studio Mapper data importation tool.

Import map and channel sample data from Studio Mapper straight into Studio EM. You can import all or a subset of exported data, filtering by data type (properties, features, sketches and so on) and you can even set the date range from which data is imported.

Access the new tool using the **Data** ribbon.

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.

BOOLEAN Process

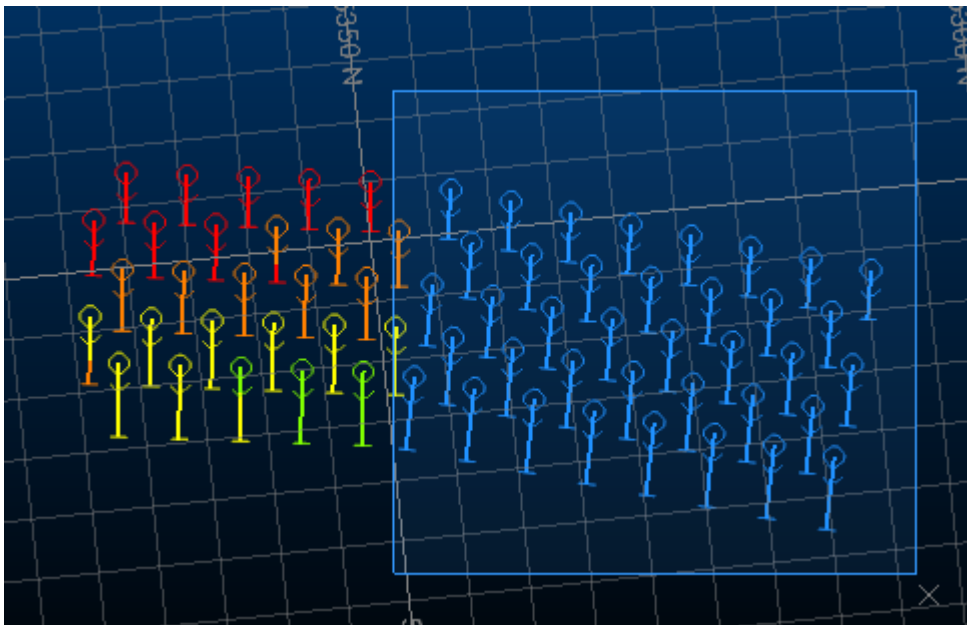
Following the introduction of Boolean and planar wireframe modelling tools in the previous release, the BOOLEAN process is now available to process Boolean and planar functions directly on files.

Custom Coordinate Transformations

You can now 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.

Custom Highlight Colour

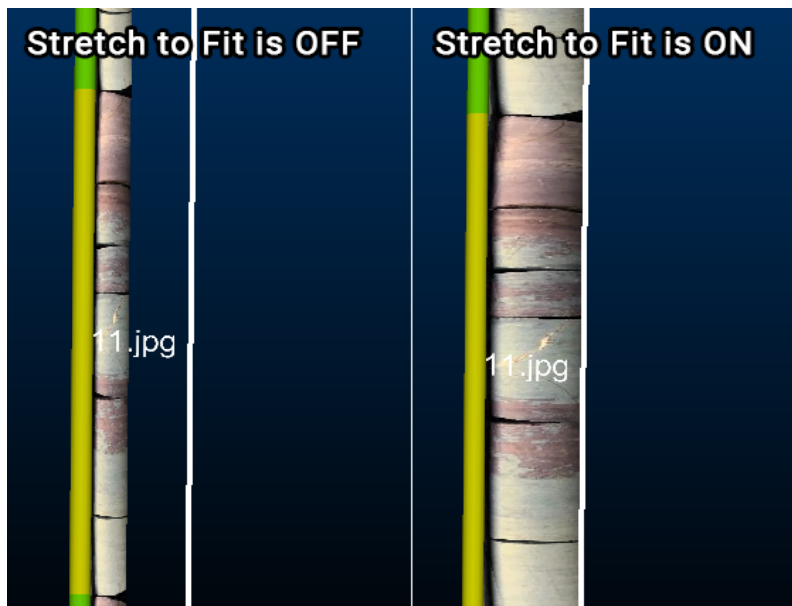


Change the 3D window selection colour to whatever you like, using the new **Options >> 3D >> General >> Selection** options.

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.

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.

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.

Vector Export Improvements

Exporting Plots window data to CAD formats has been completely overhauled to provide support for a wider range of data configurations and to improve accuracy for all exported data types.

Data can be exported as AutoCAD Drawing (.dwg) or AutoCAD Drawing Interchange Binary (.dxb) formats.

The latest changes also remove the need for plot projections to be axis-aligned before exportation, so they can now be exported in any orientation. Several other limitations of the previous export engine have been resolved as a result of this work, including export of labels to a dedicated layer, as outlined in the release notes further below.

EXTRA Improvements

EXTRA is a popular expression translator tool, now in its 27th year!

In this release, we've extended EXTRA and made existing functions easier to access and more consistent with global standards. For example, there's a new arctangent function (`atan2`), an azimuth calculator (`azimuth(dx,dy)`), NOT expression support, simple row number field addition, random number generators and field type detection.

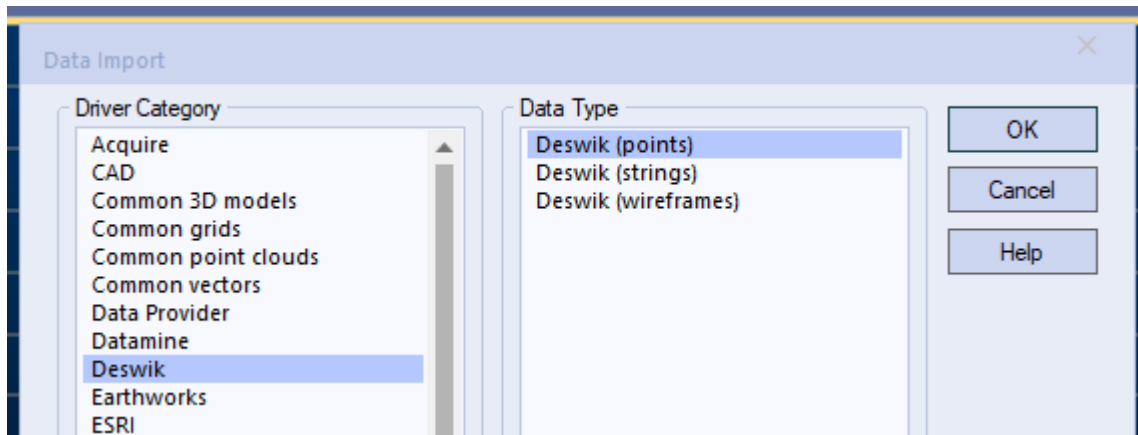
There are improvements elsewhere, such as improved handling of missing fields, new ways to work with IJK values in block models. Inequality definition using "<>" and implicit field creation.

New procedures are here; `exit()` for immediate process termination (pre-data-recording) and `keep()` to name specific fields (cumulatively if required) to retain in data output. It's a useful partner function to `saveonly()`, which requires all output fields to be specified.

New Commands & Improvements

- A new process - **ALPHCODE** - converts between numeric and alphanumeric field values.
- 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 - **create-planar-rectangle** - lets you define a rectangle by height, width, azimuth and anchor point, then position it in a 3D window interactively.
- You can now right-click a visible 3D object to set it as the **current object**.
- **ELLIPSE** now supports a `ZONE` field to allow multiple ellipsoids to be generated simultaneously.
- The **extrude-strings** command now lets you define a field for existing azimuth and dip extrusion values.
- A new process - **RANDOM** - generates random numbers, superseding the legacy MONACO process.
- A new command - **simplify-string** - provides an alternative string conditioning approach to `condition-string`.
- A new process - **TRANSCO** - transforms data coordinates in physical files between Well Known Transformation (WKT) codes.

Import & Export Deswik Data



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

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: STEX-226** The **BOOLEAN** process is available in Studio EM.
- **Case: STEX-225 Report >> Present** tools are now available on the Studio EM Report ribbon.
- **Case: STEX-220** You can now import Studio Mapper data directly into Studio EM.
- **Cases: Multiple** The **EXTRA** process has been extended with new features, procedures and other improvements.
- **Case: CORE-8681** If a maximum file or field length is exceeded in a process, the output report now specifies the maximum amount breached.
- **Case: CORE-8515 ELLIPSE** now supports an input **CENTRE** file containing coordinates for positioning multiple ellipsoid output.
- **Case: CORE-8514 ANISOANG** process feedback has been improved.
- **Case: CORE-8447 DAELLIPS** now features a **ZONE** field that allows for multiple zones to be processed.
- **Case: CORE-8441 ELLIPSE** now supports a **ZONE** field to allow multiple ellipsoids to be generated simultaneously.
- **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-8332 TRIFIL** now considers surfaces where the elevation value is outside the block model Z range.
- **Case: CORE-8297** Use existing loaded drillhole component data to build or rebuild drillholes using the **Drillhole Importer**.
- **Case: CORE-8226** Changing section positions with the move-plane-forward and move-plane-backward commands is now quicker.
- **Case: CORE-8209** The **extrude-strings** command now lets you define a field for existing azimuth and dip extrusion values.
- **Case: CORE-8181** Exporting Plots window data to CAD formats has been completely overhauled to provide support for a wider range of data configurations and to improve accuracy for all exported data types.
- **Case: CORE-8173** During volumetric block modelling, TRIFIL's **@RESOL** (Z Resolution) parameter is now available when using wireframe dip to determine maximum subcelling.

- **Case: CORE-8122** You can now apply a quick fix to multiple selected validation results in **Drillhole Importer**.
- **Case: CORE-8109** Delete custom **Drillhole Importer** data sources using the data sources list.
- **Case: CORE-8101** Drillhole Importer now imports data as a background task after launching and, if a data source is missing, this is highlighted.
- **Case: CORE-8097** Drillhole Importer now automatically detects Leapfrog system field names, saving time when setting up an import scenario.
- **Case: CORE-8096** In the Drillhole Importer, the **Mapping Type** now appears in bold for clarity.
- **Case: CORE-8095** Include or exclude multiple fields at once in Drillhole Importer using new context menu options.
- **Case: CORE-8094** Keyboard navigations shortcuts (SHIFT+Tab, SHIFT+Enter) have been added to Drillhole Importer table grids.
- **Case: CORE-7936** A new command - **switch-drillhole-points-traces** - toggles between pixel line and points drillhole rendering modes.
- **Case: CORE-7934** Automatically validate the adherence of collar positions to a specified surface topography file, reporting errors above a specified distance threshold.
- **Case: CORE-7933** Right-click a file in the Drillhole Importer to see a preview of the data table in the Tables window in your application.
- **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-7892** REBLOCK now cleans up temporary files during processing.
- **Case: CORE-7884** Re-import all drillhole component tables to absorb the latest source file changes using a new Re-import button on the Import tab.
- **Case: CORE-7859** Redundant data import items in the 3D window context menu have been removed.
- **Case: CORE-7801** end-link-selected-strings is now supported by the Maximum Segment Length project setting.
- **Case: CORE-7759** A new process - RANDOM - generates random numbers, superseding the legacy MONACO process.

- **Case: CORE-7733** User feedback when setting up default grid templates has been improved.
- **Case: CORE-7671** The auto alignment option when defining a new 3D section now also applies to Vertical and Perpendicular section types.
- **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-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-7514** An issue causing clipboard items to be pasted twice into the command line has been resolved.
- **Case: CORE-7391** A new command - **insert-segment-intersect** - lets you add a vertex to a string segment where it intersects the projected intersection of another segment.
- **Case: CORE-7342** You can now right-click a visible 3D object to set it as the current object.
- **Case: CORE-7266** A new command - **simplify-string** - provides an alternative string conditioning approach to condition-string.
- **Case: CORE-6886** A consistent **Enter Translation Distance** screen is displayed when translating point, string or wireframe data.
- **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-6369** A new process - **TRANSCO** - transforms data coordinates in physical files between Well Known Transformation (WKT) codes.
- **Case: CORE-5683** Downhole images can now be in any industry-standard image format.
- **Case: CORE-4144** Change the 3D window selection colour to whatever you like, using the new **Options >> 3D >> General >> Selection** options.

- **Case: CORE-2849** You can now control the scale and rotation of downhole images in 3D and Log views.
- **Case: CORE-543** A new command - **create-planar-rectangle** - lets you define a rectangle by height, width, azimuth and anchor point, then position it in a 3D window interactively.
- **Case: GEO-320** You can now automatically generate and choose the display legend for drillholes created with Drillhole Importer.

User Experience

- **Case: STEX-236** Various useful commands have been added to the Studio EM ribbons system.
- **Case: STEX-233** Deprecated or redundant commands have been removed from the ribbons.
- **Case: STEX-230** Product resources have been updated to reflect the latest product branding.
- **Case: CORE-8108** Redundant drive linking settings have been removed from the **Project Settings** screen.
- **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-5851** Installer graphics have been updated following corporate rebranding.

Utilities & Supporting Services

- **Case: STEX-224** Start page resources have been updated to reflect the latest corporate branding.
- **Case: STEX-223** Splash screen resources have been updated to reflect the latest corporate branding.
- **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-7937** A MineScape Block Model Generator utility can be accessed with a new minescape-to-blockmodel command.
- **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-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-8007** Help files have been updated to reflect the latest corporate branding.
- **Case: CORE-3931** More information on IF-ELSE-END loops in EXTRA has been added to the help file.
- **Case: CORE-3574** More examples have been added to the EXTRA help file.

Additional Defect Fixes

- **Case: CORE-8727** The application no longer halts unexpectedly if a macro containing more than 10 macros is right-clicked in the Project Files control bar.
- **Case: CORE-8693** If EXTRA is called from a macro, a missing GO instruction no longer prevents the process from completing.
- **Case: CORE-8581** An issue causing incomplete desurveying of imported holes in Drillhole Importer has been resolved.
- **Case: CORE-8580** Retrieval criteria can now be used in the STATCOM process.
- **Case: CORE-8565** Drillhole Importer now unlocks Excel files after import as expected.
- **Case: CORE-8484** Start pages now show the correct modified data for projects. Previously, some dates were truncated.
- **Case: CORE-8450** Editing scenario settings in Drillhole Importer now triggers a project save prompt when closing the project.
- **Case: CORE-8448** The DAELLIPS field label for ANGLE3 is now correct.
- **Case: CORE-8404** An issue causing system instability when cutting multiple file references to the clipboard via Project Files, has been resolved.
- **Case: CORE-8352** An issue causing the system to halt when reimporting Fusion data has been resolved.
- **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-8285** An issue preventing the import of ODBC-compliant data using the Drillhole Importer has been resolved.
- **Case: CORE-8280** An issue causing the restoration of form values to render process screens incorrectly has been resolved.
- **Case: CORE-8201** Reload All now reloads all data types as expected.
- **Case: CORE-8199** When exporting plot data in a vector format, labels are now position correctly if not exported as vectors.
- **Case: CORE-8184** An issue preventing **Edit Attributes** from working correctly with alphanumeric fields has been resolved.
- **Case: CORE-8126** When assigning attributes via perimeters, you can now group attributes using the system SURFACE attribute.

- **Case: CORE-8112** Drillhole Importer no longer creates files with multiple (drillhole) suffixes after reloading data.
- **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: CORE-7982** Transform Coordinates no longer creates empty output if the input is in single-precision format.
- **Case: CORE-7971** An issue causing the Back, Finish and Cancel buttons to appear incorrectly in the New Legend wizard, after resizing it, has been resolved.
- **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-7826** Block model hulls are now displayed correctly in 3D windows, in relation to the current clipping settings.
- **Case: CORE-7785** The Data Unload screen now lists objects alphabetically.
- **Case: CORE-7783** The Data Unload screen is now resizable.
- **Case: CORE-7666** Pasting text into the Command toolbar no longer duplicates the clipboard contents.
- **Case: CORE-7524** An issue causing an incorrect string segment to be removed, after using the Insert Line command, has been resolved.
- **Case: CORE-7487** EXTRA's calculation of inverse trigonometric function "asin" while there is a mathematical expression which contains columns inside it, is now as expected.
- **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-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-6690** An issue causing misaligned texturing of an imported .obj file has been resolved.
- **Case: CORE-6375** When exporting plot data in vector format, grid data is now exported correctly.
- **Case: CORE-5869** The Point Cloud Reconstruction Console and associated PTCLD2WF process now generate extended precision files.
- **Case: CORE-5654** An issue causing a Microstation DGN wireframe to import has been resolved.
- **Case: CORE-5460** When exporting plot data to a CAD format, precision issues no longer occur when world coordinates are disabled.
- **Case: CORE-3966** Exporting Faces and polylines via the CAD driver no longer export redundant point data.
- **Case: CORE-2248** Macro names in a .mac file now appear correctly via the Project Files control bar.
- **Case: CORE-1498** Exporting to a vector format no longer includes data outside the original view boundaries.

Datamine enables efficient and sustainable mining through the application of world-leading technology and services.

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