

Comprehensive Open Pit Design & Scheduling

STUDIO OP



**Release
Notes**

Studio OP 3.1

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Overview



Studio OP contains functionality for both medium- and short-term planning of open pit mines.

Studio OP has tools for the design of pits and generation of mining surfaces, and allows you to generate mining blocks from pit and phase shapes.

Studio OP 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 OP are available via the Datamine Customer Support website. For more details, see <https://www.dataminesoftware.com/support/>.

For the complete Studio OP documentation, see <https://docs.dataminesoftware.com/StudioOP>.



Studio OP 3.1 Release Notes

Key Improvements

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 Coordinate Transformations

You can now define custom coordinate transformations using the transform-coordinates command.

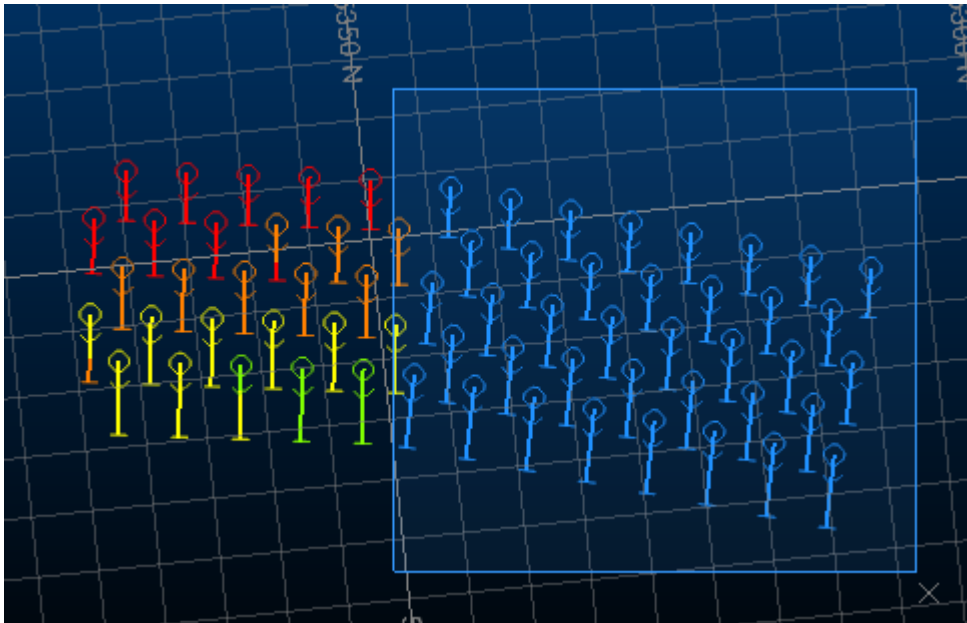
Define one or more control points in 3D space and automatically calculate the transformation between source and target systems. The resulting transformation matrix can be saved and shared with others.

Digitize Ribbon

Data editing commands are now available on the **Digitize** ribbon. Commands have been reordered to make commands used more commonly quicker to access.



Custom Highlight Colour



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

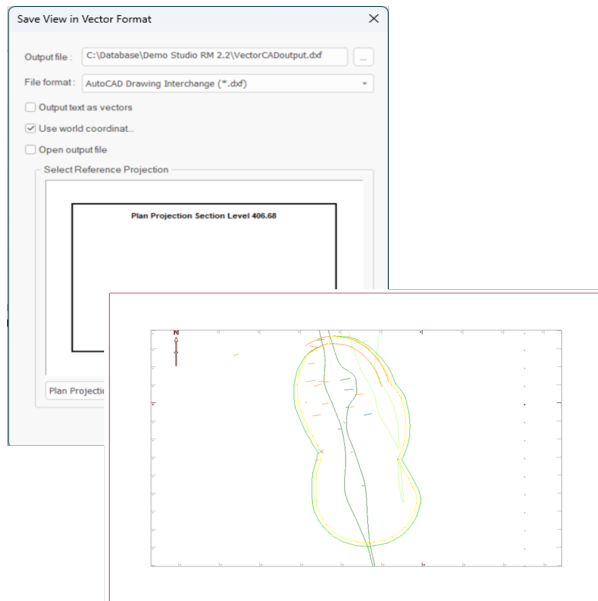
Rotate and Scale Downhole Column Images

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.

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.

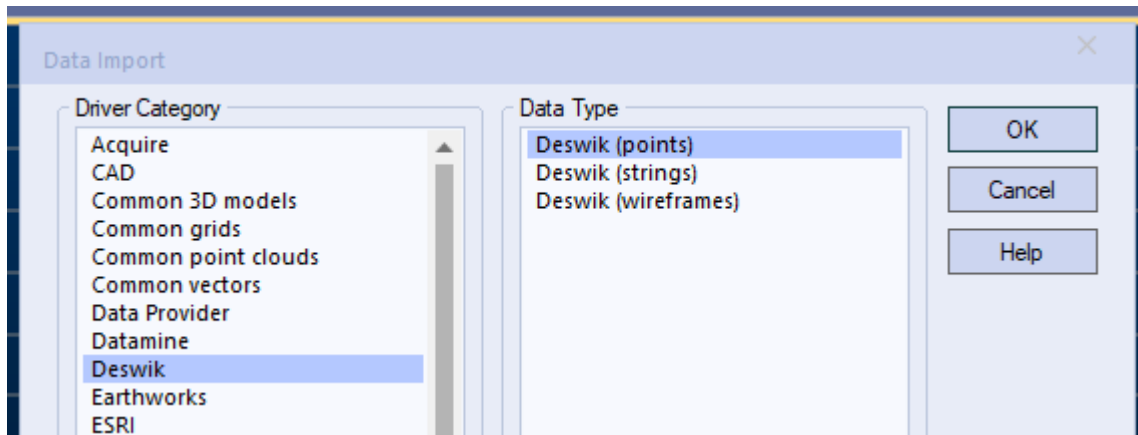
Data can be exported as AutoCAD Drawing (.dwg) or AutoCAD Drawing Interchange Binary (.dxf) formats.

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.

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.

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.

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.

- 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**.
- 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.

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

- **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-8484** Start pages now show the correct modified data for projects. Previously, some dates were truncated.
- **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-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-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-7892** REBLOCK now cleans up temporary files during processing.
- **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-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.

User Experience

- **Case: OP-3720** The translate-string ribbon tooltip has been updated to remove the explicit reference to string data.
- **Case: OP-3674** create-grid-perimeters and attributes-from-perimeters are now available on the new Digitize ribbon.
- **Case: OP-3627** Data editing commands are now available on the **Digitize** ribbon.
- **Case: OP-3614** Studio OP has been translated to the Russian language and will be available soon.
- **Case: OP-3513** Studio OP Start page resources have been updated to reflect the latest corporate branding.
- **Case: OP-3510** The Studio OP splash screen has been updated to show latest company 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-7939** The REBLOCK ribbon tooltip has been modified to make it distinct from the REGMOD process.
- **Case: CORE-7865** Screen text has been added to suggest using <CTRL> when using the assign-attributes-by-selection-order command.
- **Case: CORE-7785** The Data Unload screen now lists objects alphabetically.
- **Case: CORE-7783** The Data Unload screen is now resizable.



Utilities & Supporting Services

- **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-5851** Installer graphics have been updated following corporate rebranding.
- **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-8623** Documentation for the translate-string, translate-point, translate-string-opt and translate-wireframe commands has been updated.
- **Case: CORE-8007** Help files have been updated to reflect the latest corporate branding.
- **Case: CORE-7840** Documentation on macro limits has been updated.
- **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.



Defect Fixes

- **Case: OP-3599** An issue causing the **Targets** control bar to display incorrect target status information has been resolved.
- **Case: OP-3596** A performance issue in Auto Scheduler has been resolved.
- **Case: OP-3593** An issue preventing accurate synchronization of OP and data has been resolved.
- **Case: OP-3498** Changing the Destination name in the Setup window from Schedule now changes the destination selected on the Target tab.
- **Case: OP-3339** An issue causing system instability when using the combine-strings command has been resolved.
- **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-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-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-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-7859** Redundant data import items in the 3D window context menu have been removed.
- **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-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-7514** An issue causing clipboard items to be pasted twice into the command line 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-6988** The Create Ramp String command no longer creates an unexpected additional segment when the gradient is greater than 0.

- **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-6410** An issue causing coincident wireframe data to be displayed contrary to an schedule during animation playback has been resolved.
- **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-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 unwanted 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.



Known Issues for this Beta Version

The following issues are currently being investigated and will be resolved prior to a public release of this update.

- **Case:OP-3339** Work continues to resolve some issues with combine-strings.



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